Tulare County Association of Governments

2018 Regional Transportation Plan/ Sustainable Communities Strategy SCH # 2017041018

Final Program Environmental Impact Report

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August 2018

TULARE COUNTY ASSOCIATION OF GOVERNMENTS

2018 REGIONAL TRANSPORTATION PLAN / SUSTAINABLE COMMUNITIES STRATEGY

FINAL PROGRAM ENVIRONMENTAL IMPACT REPORT

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1.0 INTRODUCTION

This document is the Final Program Environmental Impact Report ("PEIR") for the 2018 Regional Transportation Plan/Sustainable Communities Strategy ("2018 RTP/SCS" or "Plan"). This document together with the Draft PEIR and its technical appendices comprise the Final PEIR. The document has been prepared by the Tulare County Association of Governments (TCAG) in accordance with the California Environmental Quality Act (CEQA).

As required under Section 15132 of the *State CEQA Guidelines,* the Final PEIR includes the Draft PEIR (as a separate volume), comments and recommendations received on the Draft PEIR, TCAG's responses to significant environmental issues raised by those comments, and revisions to the Draft PEIR.

Public Resources Code Section 21081.6 and *State CEQA Guidelines* Section 15097 require a lead agency to adopt a Mitigation Monitoring and Reporting Program when CEQA findings are adopted. TCAG will adopt the MMRP as a separate document, but it is also included in the Final PEIR.

This document also provides revisions to the Draft PEIR made in response to comments, staff review, and/or changes to the Plan. These revisions also correct, clarify, and amplify the text of the Draft PEIR, as appropriate, but do not alter the conclusions of the Draft PEIR.

PROCESS

In accordance with Section 15050 of the *State CEQA Guidelines* TCAG is the lead agency that prepared the Draft and Final PEIR for the project, the 2018 RTP/SCS.

TCAG prepared and circulated the Draft PEIR beginning on May 11, 2018 and ending on June 26, 2018. TCAG then re-circulated Appendix 43 (technical corrections to greenhouse gas (GHG) calculations in the 2018 RTP/SCS Technical Methodology) of the 2018 RTP/SCS on June 1, 2018 for a period of 45 days (ending July 16, 2018). A public hearing was held on June 18, 2018 at 1:000 pm at the Dinuba Community Center located at 1390 E. Elizabeth Way, Dinuba, CA 93618 regarding the 2018 RTP/SCS PEIR. TCAG placed the Draft PEIR at the office of TCAG and at three local libraries in the County, and posted an electronic copy of the Draft PEIR on the TCAG website. Additionally, a Notice of Availability of the Draft PEIR was transmitted to responsible and trustee agencies, regulatory agencies and other to request comments on the Draft PEIR, pursuant to CEQA Guidelines Section 15086. Comments on the Draft PEIR were received during the comment period, and those comments are responded to in the Final

PEIR. Comments were also received after the close of the public review period, and are also responded to in the Final PEIR although there is no requirement to do so.

On August 10, 2018 TCAG posted the responses to comments on the Draft EIR on TCAG website; TCAG provided written proposed responses to all public agencies that commented on the Draft PEIR 10 days prior to certifying the PEIR.

The TCAG Board must certify the Final PEIR before making a decision to approve the 2018 RTP/SCS. Prior to approval of a project for which the EIR identifies significant environmental effects, CEQA requires the adoption of CEQA Findings (*State CEQA Guidelines* Sections 15091 and 15092). If the CEQA Findings identify significant adverse impacts that cannot be avoided or substantially lessened, TCAG must adopt a statement of overriding considerations for those impacts (*State CEQA Guidelines* Section 15093(b)).On August 20, 2018, the TCAG Board is meeting to consider certifying the Final PEIR, and adopting the CEQA Findings, Statement of Overriding Considerations, and MMRP.

CONTENT OF THE FINAL PROGRAM EIR

This Final PEIR includes the following chapters:

Section 1.0, Introduction: This chapter provides a brief introduction to the Final PEIR and its contents.

Section 2.0, Comment Letters and Responses: This chapter provides a list of commenting agencies, organizations, and individuals. Responses to all comments on the Draft PEIR are also included in this chapter. Some of the comment letters received on the Draft PEIR also provided comments on the Plan (not on significant environmental issues in the PEIR). These Plan-related comments are addressed separately as part of the RTP/SCS process.

Section 3.0, Corrections and Additions: This chapter provides corrections and additions to the Draft PEIR. None of the changes affect the conclusions presented in the Draft PEIR.

Section 4.0, Mitigation Monitoring and Reporting Program: This chapter includes the Mitigation Monitoring and Reporting Program (MMRP) prepared in compliance with the requirements of Section 21081.6 of the California Public Resources Code and Section 15091(d) and 15097 of the *State CEQA Guidelines*.

PUBLIC AVAILABILITY OF THE FINAL PEIR

Consistent with CEQA (Public Resource Code Section 21092.5), responses to agency comments are being forwarded to each commenting agency 10 days prior to certification of the Final PEIR. The Final PEIR is available for public review at libraries throughout the County and TCAG's offices. Additionally, the Final PEIR can be downloaded at www.tularecog.org.

DRAFT EIR RECIRCULATION NOT REQUIRED

The *State (CEQA) Guidelines* Section 15088.5 provide that:

> *(a) A lead agency is required to recirculate an EIR when significant new information is added to the EIR after public notice of its availability … "significant new information" requiring recirculation includes, for example, a disclosure showing that:*
>
> *(1) A new significant environmental impact would result from the project or from a new mitigation measure proposed to be implemented.*
>
> *(2) A substantial increase in the severity of an environmental impact would result unless mitigation measures are adopted that reduce the impact to a level of insignificance.*
>
> *(3) A feasible project alternative or mitigation measure considerably different from others previously analyzed would clearly lessen the environmental impacts of the project, but the project's proponents decline to adopt it.*
>
> *(4) The draft EIR was so fundamentally and basically inadequate and conclusory in nature that meaningful public review and comment were precluded.*
>
> *(b) Recirculation is not required where the new information added to the EIR merely clarifies of amplifies or makes insignificant modifications in the adequate EIR.*

New information is "significant" if as a result of the additional information "the EIR is changed in a way that deprives the public of a meaningful opportunity to comment upon a substantial adverse environmental effect of the project or a feasible way to mitigate or avoid such an effect." *Laurel Heights Improvement Ass'n v. Regents of Univ. of Cal*. 864 P.2d 502, 510 (1993) (*Laurel Heights II*). *State CEQA Guidelines* Section 15088.5(a). Recirculation is not mandated when the new information merely clarifies, amplifies, or makes an insignificant modification to an adequate draft EIR. (*Vineyard Area Citizens for Responsible Growth v. City of Rancho Cordova*, 150 P.3d 709 (2007) (quoting *Laurel Heights II*, 864 P.2d at 510); see also *Marin Mun. Water Dist. v. KG Land California Corp*., 235 Cal.App.3d 1652, 1667 (1991) (citing *Sutter Sensible Planning v. Board of Supervisors* 122 Cal.App.3d 813 (1981)).

In response to public comments received, revisions to the mitigation measures, as well as text changes have been made to the Draft Program EIR ("Draft PEIR"). Additional information has been provided in comments to the Draft EIR and responded to in **Section 2.0, Comment Letters and Responses**, of this Final PEIR. These changes made since publication of the Draft PEIR do not substantially affect the analysis contained in the Draft PEIR, do not result in a substantial increase in the severity of a significant impact identified in the Draft PEIR, and do not change the impact conclusions. As such, the comments, responses, and Draft PEIR revisions presented in this document are not "significant new information;" instead, they clarify, amplify, or make insignificant modifications to the Draft PEIR. For example, none of the comments, responses, and Draft PEIR revisions disclose new or substantially more severe significant environmental effects of the 2018 RTP/SCS, or new feasible mitigation measures or alternatives considerably different than those analyzed in the Draft PEIR that would clearly lessen the 2018 RTP/SCS' significant effects.

2.0 COMMENT LETTERS AND RESPONSES

Chapter 1 reviews the CEQA process conducted for the Draft and Final Program EIR (PEIR). Five comment letters on the Draft PEIR were received during the comment period, and those comments are responded to in this Final PEIR.[1] Three comment letters on the Draft PEIR were received after the close of the original circulation period and are also responded to in this Final PEIR, although TCAG is not required to do so. No comments on recirculated material were received during the public review period for this material.

This Final PEIR addresses only the comments on the Draft PEIR. Comments on the 2018 RTP/SCS are addressed in Appendix 39 of the Final RTP/SCS. Some comments on the Draft 2018 RTP/SCS could be considered relevant to the PEIR's discussions of environmental issues or alternatives, and are therefore included in this Final PEIR. For letters that contain both comments on the Draft PEIR and the Draft 2018 RTP/SCS, this Final PEIR indicates where portions of a letter are within the 2018 RTP Appendix 39 and directs the reader to specific responses.

A list of commenters on the Draft PEIR is shown in **Table 2.0-1** below.

In this chapter, the original bracketed comment letters are provided followed by a numbered response to each bracketed comment. Individual comments within each letter are numbered and the response is given a matching number. Where responses result in a change to the Draft EIR, it is noted, and the resulting change is identified in *Section 3.0 Corrections and Additions*. Additions are in <u>underline</u> and deletions are shown in ~~strikethrough~~ format.

Table 2.0-1
List of Commenters on the Draft EIR

Letter Number	Organization	Commenter Name	Comment Date	Response Page Number
Letter A	County of Fresno, Department of Public Works and Planning	Steven E White, Director	June 11, 2018	

[1] For purposes of this document, comments received at public hearings are also termed "letters."

Letter Number	Organization	Commenter Name	Comment Date	Response Page Number
Letter B	Leadership Counsel of Justice and Accountability & Sequoia Riverlands Trust	Pedro Hernandez, Leadership Counsel for Justice and Accountability Ruben Salazar, Tooleville Nonprofit Mutual Water Company Adam Livingston, Sequoia Riverlands Trust Reinelda Palma, Matheny Tract Committee Maya Becerra, Ivanhoe Town Council Lucy Hernandez, Community of West Goshen Mayra Becerra, Ivanhoe Town Council	June 25, 2018	
Letter C	Leadership Counsel of Justice and Accountability; Sequoia Riverlands Trust; Et Al.	Adam Livingston, Director of Planning and Policy Sequoia Riverlands Trust Pedro Hernandez, Policy Advocate Leadership Counsel for Justice and Accountability	June 26, 2018	
Letter D	Department of Fish and Wildlife	Julie A Vance, Regional Manager	July 3, 2018	
Letter E	San Joaquin Valley Air Pollution Control District	Arnaud Marjollet, Director of Permit Services Brian Clements, Program Manager	July 25, 2018	
Letter F	Governor's Office of Planning and Research	Scott Morgan, Director, State Clearinghouse	June 26, 2018	
Letter G	Governor's Office of Planning and Research	Scott Morgan, Director, State Clearinghouse	July 12, 2018	
Letter H	Public Comment		June 18 Public Hearing	

2.0-1 RESPONSES TO COMMENTS RECEIVED ON THE DRAFT PROGRAM EIR

The original bracketed comment letters are provided on the following pages, followed by a numbered response to each bracketed comment. Individual comments within each letter are numbered and the response is given a matching number.

Letter A

County of Fresno

DEPARTMENT OF PUBLIC WORKS AND PLANNING
STEVEN E. WHITE, DIRECTOR

June 11, 2018

Gabriel Gutierrez, Senior Regional Planner
Tulare County Association of Governments
210 N. Church Street, Suite B
Visalia, CA 93291

SUBJECT: 2018 Regional Transportation Plan/Sustainable Communities Strategy and Draft Environmental Impact Report

Dear Mr. Gutierrez:

The County of Fresno appreciates the opportunity to review and comment on the subject 2018 Regional Transportation Plan/Sustainable Communities Strategy and Environmental Impact Report. The Fresno County Department of Public Health, Environmental Health Division has this comment to offer:

The proposed construction project has the potential to expose nearby residents to elevated noise levels. Consideration should be given to the County of Fresno Noise Ordinance. A-1

For more information regarding the Noise Ordinance, please contact Sukhdeep Sidhu of the Environmental Health Division at (559)600-3271.

If you have any questions, you may e-mail me at tkobayashi@FresnoCountyCA.gov or contact me at (559) 600-4224.

Sincerely,

Thomas Kobayashi, Planner
Development Services and Capital Projects Division

TK:ksn
G:\4360Devs&Pln\PROJSEC\PROJDOCS\Environmental\OAR\County - Tulare\TCAG 2018 RTP - SCS\TCAG OAR 2018RTP-SCS OAR Comment Letter.docx

cc. Bernard Jimenez, Assistant Director
William M. Kettler, Development Services and Capital Projects Division
Chris Motta, Development Services and Capital Projects Division

Letter A: County of Fresno Department of Public Works and Planning

Steven E. White, Director
County of Fresno Department of Public Works and Planning
2220 Tulare Street, Sixth Floor
Fresno, CA 93721
June 11, 2018

Response A-1

The comment relates to construction noise and the potential for increased noise levels within the neighboring county of Fresno. The comment further states that consideration should be given to the County of Fresno Noise Ordinance. Construction projects are required to comply with the regulations, (e.g., noise ordinances) of the jurisdiction within which they are located.

Please note that the 2018 RTP/SCS itself is not a "construction project." As individual projects move forward, project specific environmental review will be required. If an individual project in the TCAG 2018 RTP/SCS were to have the potential to significantly impact sensitive receptors – in whatever County – during CEQA review mitigation would be required to reduce impacts to the maximum extent feasible.

Section 4.8 of the PEIR evaluates the potential for increased noise levels as a result of construction associated with projects under the 2018 RTP/SCS (see pages 4.8-26 through 4.8-29 of the Draft PEIR). The PEIR indicates that "[i]mpacts to sensitive receptors resulting from the construction of transportation and development projects would depend on several factors, such as the type of project proposed, adjacent land use, and duration of proposed construction activities. Based on the above analysis, the 2018 RTP/SCS would substantially increase construction noise levels, and this impact would be significant." **Mitigation Measure MM-NOI-1(a)** outlines processes and procedures for reducing construction noise impacts that can and should be implemented by lead agencies. Even with this mitigation, impacts would remain significant.

Regarding cumulative impacts which would include impacts to neighboring jurisdictions, the Draft PEIR indicates that "[w]ithin the cumulative analysis impact area, implementation of the 2018 RTP/SCS, combined with cumulative development outside the region, has the potential to result in noise and vibration impacts occurring outside Tulare County. As discussed above, implementation of the 2018 RTP/SCS would have significant impacts related to increases in noise and vibration impacts. The 2018 RTP/SCS would add to impacts from RTP/SCS plans in adjacent counties.

The 2018 RTP/SCS contribution to these impacts would be cumulatively considerable. Implementation of **Mitigation Measures NOI-1(a)**, **NOI-1(b)**, and **NOI-4** would reduce the 2018 RTP/SCS contribution to

cumulative noise and vibration impacts; however, impacts from the 2018 RTP/SCS would remain cumulatively considerable."

Letter B

June 26, 2018

Benjamin Kimball
Tulare County Association of Governments
210 N. Church Street, Suite B
Visalia, CA 93291

Re: Comments on TCAG's 2018 Regional Transportation Plan/Sustainable Communities Strategy/ Programmatic Environmental Impact Report

Leadership Counsel for Justice and Accountability is an environmental justice nonprofit that works with rural and low-income communities affected by degraded environmental conditions, inequitable access to public transit, and adverse public health metrics. Sequoia Riverlands Trust is a Visalia-based, accredited land trust that inspires love and lasting protection for important lands, including habitat and farmland in Tulare County. We collectively have also held the Environmental and Environmental Justice seat on the RTP Roundtable and submit these comments to the TCAG policy board and staff with the intent to meaningfully shape the 2018 RTP/SCS to meet Tulare County's transit and environmental sustainability needs for all residents with particular emphasis on low-income, disadvantaged, and rural communities in the region. TCAG has made several improvements over the last two cycles of updates however, we believe there are several substantial and minor policy and programmatic improvements that can be made to ensure both GHG reduction targets and social equity are realized in Tulare County.

I. Recommended Changes to Policy Element

a. Identify and Include Rural Transportation Issues as a Regional Concern

Gov. Code § 65080(b)(1) states the RTP shall include a "policy element that *describes the transportation issues in the region, identifies and quantifies regional needs,* and describes the desired short-range and long-range transportation goals, and pragmatic objective and policy statements" (emphasis added). Furthermore, according to Caltrans' RTP Guidelines:

> The consideration of rural communities within the region in the development of the RTP (including the SCS) is a key element in the process, to ensure that regional GHG reductions and associated co-benefits such as improved access to jobs and services are not achieved at the expense of small towns and rural communities where high frequency transit and/or high-density development is not feasible. The RTP process should consider policies and programs for investments in rural communities that improve sustainability and access to jobs and services and that protect resource areas, farmland, and agricultural economies."[1]

We believe that the Draft RTP does not fulfill its potential or the direction of the Government Code or the RTP Guidelines to consider and respond to the transportation needs of the Tulare

[1] CTC RTP Guidelines for MPOs, p. 153.

County region and disadvantaged unincorporated and rural communities in particular. With roughly one-third of Tulare County's population living in unincorporated communities, a significant portion of residents face unique mobility needs and transit dynamics compared their urban counterparts. For example, many unincorporated communities have lower than average street conditions, unsafe pedestrian and bicycle infrastructure, lack robust transit, and face longer commutes.

To complete this addition, TCAG should use existing data including but not limited to Complete Streets studies, Community Infrastructure Plans, the Regional Active Transportation Plan, surveys collected for planning purposes and other sources of existing data to inform this section and identify short-range and long-range transportation goals to lower vehicle emissions and meet existing needs.[2] These short- and long-term goals should be accompanied by the identification of potential funding sources and actual allocations as needed to ensure any planning and project applications are completed in a timely fashion. We strongly encourage the completion of all remaining Complete Streets studies for unincorporated communities in addition to identifying vulnerabilities and barriers relating to transportation investments in rural communities including but not limited to risk of ground subsidence, impact of truck traffic on active transportation infrastructure, dust, and the role that streets play in absorbing heat during summer. Increasing below-state average transit ridership and bike/pedestrian trips via improved safety and operational measures, provision of active transportation infrastructure, and innovative solutions to rural barriers should be a pillar of the 2018 RTP/SCS.

Through a series of community meetings in addition to the June 25th TCAG workshop, several overarching themes were identified by residents including:

- Need for safety protection from high velocity corridors that intersect or are adjacent to communities
- Need for increased prioritization of projects for intra-community navigation
- Need for improved transit that increases intra-community accessibility and increases inter-community connectivity
- Desire for incorporation of climate adaptation for resiliency of infrastructure including support facilities like bus shelters to increase conveniences and reduce barriers to access
- Increased consideration for social and mobility needs of youth and residents without personal vehicles
- Full inclusion for communities in regional and local planning
- Urgency for long-term, sustainable solutions to poor road quality

We recommend that TCAG fully incorporate the feedback from community residents to reassess the current policy element.

b. Policy Element Must be Pragmatic, Action-Oriented to Meet Needs of Disadvantaged Communities

State law requires that the RTP be "*action-oriented and pragmatic, considering both the short-term and long-term future,*" and that it *"present clear, concise policy guidance to local and*

[2] SB 375 Sec 4. 65080 (b)(1)(F) The requirements of this section may be met utilizing existing sources of information.

state officials."[3] "As written, many of the policies are phrased to avoid the directive terms "must" and "shall," and instead, use suggestive terms like "should", "encourage" or "support". This language renders the Policy Element vague and does not provide the clear, action-oriented, and pragmatic guidance called for by state law. TCAG must revise the Draft RTP to address this deficiency and strengthen its language to create "pragmatic "and "action-oriented policies" that serve all segments of the population in both the "short-term and long term." Below is a list of recommendations and modifications to existing policy we believe will further these goals:[4]

GOAL: PROVIDE AN EFFICIENT, INTEGRATED, MULTI MODAL TRANSPORTATION SYSTEM FOR THE MOVEMENT OF PEOPLE AND GOODS THAT ENHANCES THE PHYSICAL, ECONOMIC, AND SOCIAL ENVIRONMENT IN TULARE COUNTY REGION

Objective: Encourage and support a connected and multimodal regional circulation network that is convenient, safe, and efficient

Policies:

2. Implement a Complete Streets Program whereby agencies will prepare plans to accommodate all transportation users, including pedestrians, bicyclists, transit riders, and motor operators and riders, and *utilize existing revenue and other funding sources to coordinate with local agencies to* implement completed plans as aggressively as feasible *by submitting at least 5-10 projects applications per funding cycle*

4. Make *existing* road and bridge maintenance a high priority

Objective: Support communities in developing walkable, bikeable, and transit-ready neighborhoods that work in tandem with motor vehicle facilities for a safe and complement local circulation system for people of all levels of income and various availability of resources

Policies

1. ~~Fund~~ *Frontload the funding of* feasibility studies, complete streets studies, and community and neighborhood plan to evaluate for transit readiness, walkability, and bike ability, as funds are available

4. Ensure *and measure progress in achieving* equitable access to effective and viable transportation options for all, regardless of race, gender, income, national origin, age, physical ability with a focus on benefiting the regions' most vulnerable populations and closing existing unmet transportation gaps that are warranted

5. ~~Consider conducting~~ *Fund* barrier studies, consistent with state recommendations

SYSTEM PERFORMANCE

GOAL: ENCOURAGE AND SUPPORT AN EFFICIENT, MAINTAINED, AND SAFE CIRCULATION NETWORK THAT MAXIMIZES CIRCULATION, LONGEVITY, AND FISCAL RESPONSIBILITY WHILE MINIMIZING ENVIRONMENTAL IMPACTS

[3] SB 375 Sec 4. 65080

[4] Within this section, proposed revisions to existing text are in italics and deletions are shown with strikethrough.

Objective: Encourage and support and efficient regional road and circulation system that provides maximum achievable mobility and accessibility for vehicles, bicycles, pedestrians, and public transportation

Policies:

1. Maintain a Level of Service C or better on rural roads and Level of Service D or better on urban roads
2. Assist member agencies with completion of *new and* partial systems, such as gaps in bicycle paths and underserved locations requiring public transit
3. *Maintain a PCI of at least 65 for rural and urban communities.*

Objective:

Encourage and support a safe and reliable regional road system

Policies:

1.Consider safety improvement projects *for regional and local traffic corridors*.
3. Identify future *local and* regional road and circulation needs an an as-needed basis
6. *Prioritize benefits for disadvantaged communities*

Objective: Plan for and implement cost-effective transportation improvements which utilize all types of public funds, including federal, state, and local funds and funds allocated by formula, competitive grants, or other sources

Policies:

1.Rank and score transportation projects based on regional significance, safety, cost-effectiveness, environmental benefits, *benefits to disadvantaged communities* and project warrant based on specific funding guidelines and Measure R project identification
3. Encourage and support alternative transportation improvements, such as roundabouts *and flexible micro transit*, when feasible
5. By 2020 convene a public working group similar to the RTP roundtable to reevaluate and develop transparent scoring criteria including SB 32 and SB 375 goals and defining equity metrics and benefits to disadvantaged communities to ensure TCAG affirmatively removes the effects of discriminatory practices pursuant to Title VI of the Civil of the Rights Act.

Objective: Encourage and support a sustainable regional road and circulation system

Policies:

1.Encourage and support projects that are valuable to the *local and* regional road and circulation system that reduce vehicle miles traveled, improve level of service, contribute to a reduction in air quality pollutants and greenhouse gases, conserve agricultural land, habitat, groundwater recharge areas, and create safe travel corridors within the region

Objective: Minimize environmental impacts of transportation projects and encourage the coexistence of nature and human circulation needs

Policies:

1.Evaluate and assist agencies with mitigation possibilities, when feasible, working with Measure R environmental funds and other funding opportunities, to asset with mitigation of road projects found in the RTP

4. When feasible, encourage clean and mass transit as a mitigation measure to significant environmental impacts resulting from highway projects

Objective: Promote fair and equitable transportation improvements throughout the region

Policies:

2.Conduct an equity analysis using existing studies and expenditure data to assess historical trends of inequitable development and needs for low-income and disadvantaged communities

Objective: *Allocate sufficient funding to* perform public outreach to ensure the reasonable satisfaction and meeting of needs of the public

Policies:

5. *Identify funding to ensure public notices and key documents are readily available in multiple languages, electronically and TCAG's office*

6. Provide response to oral and written comments with a transparent process for consideration and incorporation in planning updates

7.Ensure translation and interpretation is available and hold meetings at reasonable times and accessible locations for low-income residents

8. Provide follow-up meeting and outreach to stakeholders involved in scenario selection and throughout the transportation decision-making process

TRANSIT

Objective: Encourage and support the development of a safe, efficient, effective, and economical public transit system

Policies:

16. Launch community vanpools and flexible micro transit service with special attention to rural and disadvantaged communities

ACTIVE TRANSPORTATION

Objective: Encourage bicycle usage in Tulare County by providing safe and convenient bike routes and facilities

Policies

9. Utilize Cap and Trade funds *along with other sources of funds* for bicycle and pedestrian projects, if available, for projects in Tulare County

10. Support the closure of gaps in the bicycle and pedestrian systems to improve connectivity and attractiveness of these modes of transportation
12. Utilize SB-1 planning funds to continue completion of Complete Streets Plans for rural communities, when funds are available
13. Double walking and triple biking in rural and urban communities in alignment with Caltrans' State Bicycle and Pedestrian Plan

Objective: Educate, incentivize, and enable residents to utilize active mode of transportation

Policies:

3.Encourage and support maintenance and enhancement of existing bicycle and pedestrian facilities
7. *Prioritize projects that increase safety and meet a community's identified active transportation needs*
8. *Design or modify active transportation outreach and educational materials, including online resources specific to community needs and are relevant, accessible, practical, and available in the spoken languages of those communities*

Objective: Support safe pedestrian walkways within the transportation network in Tulare County

Policies:

2. Encourage cities *and county agencies* to consider needs of pedestrians and people with disabilities during the project review process and policies in their general plans
6.~~Utilize~~ *Actively seek out* Cap and Trade *and other* funds, if available, for various projects n Tulare County that will contribute to the reduction of greenhouse gas emissions.

AIR QUALITY AND GREENHOUSE GASES

Objective**:** Plan for and implement coordination of land use and alternative mode of transportation that would reduce vehicle miles traveled by providing residents transportation options in multiple modes

Policies:

1. Plan for and implement coordination of land use and alternative modes of transportation that would reduce miles traveled by providing *rural and urban* residents transportation options in multiple modes

Objective: Prioritize projects that contribute to improved air quality and reduced greenhouse gas emissions

Policies:

3.Promote the *equitable* adoption of clean, renewable energy technologies to ensure a reliable energy supply, enhance the region's economy, and improve air quality *locally and regionally.*
4. Expand awareness of the need to reduce greenhouse gases *to both agencies and the public* and incorporate the latest scientific information into planning efforts.

PUBLIC HEALTH
Objective: Consider effects on pubic health when investing in the transportation system, giving specific attention to bicycle and pedestrian projects

Policies:

1.Support investment in bicycle and pedestrian systems, giving attention to projects and networks that will allow residents to walk and bicycle to frequented destinations *and key service providers*, including transit stops
3. Prioritize projects to reduce pedestrian-vehicle related injuries
4. Analyze the air quality and pedestrian safety implications when considering highway expansion

ENVIRONMENTAL JUSTICE
Objective: Require regional transportation planning that is consistent with Title VI and Environmental Justice Federal Requirements

Policies:

1. ~~Assure that transportation project benefits and burdens are not inequitably distributed throughout the region~~ *Prevent the denial of, reduction in, or significant delay in the receipt of benefits by minority and low-income populations throughout the region by frontloading projects within short- and long-term planning horizons*
2. *Identify and address, as appropriate, disproportionality high and adverse human health or environmental effect of its programs, policies, and activities on minority populations by ensuring low-income and disadvantaged communities given first priority for investment in short and long-term planning periods*
3. *Assure that TCAG avoid, minimizes, or mitigates disproportionately high and adverse human health and environmental effects of projects it funds, including social and economic effects, on minority populations and low-income populations through development of equity analyses and incorporation of community-identified benefits.*

We believe with these policies will affirm TCAG's intention to comply with existing obligations under state and federal law. Furthermore we believe meaningfully implementing these policies will allow TCAG to begin the 2018-2022 cycle with a more robust policy element in better position to continue to meet resident need and to pursue grants for low-income and disadvantaged communities.

II. Recommended Changes to Action Element

a. Identify a Timeline Within the 2018-2022 Cycle to Ensure Timely Benefits to Disadvantaged Communities

We appreciate the addition of many policies intended to further the goals of SB 375 and to reduce VMT and meet GHG reduction targets such as providing first and last mile connections, increasing public use of transit, and inclusion of barrier studies. However, while

the Draft RTP provides some timelines for potential construction projects, the timelines included in the RTP are deficient from lack of detail and potential for significant delay of benefits for low-income and disadvantaged communities. Government Code § 65080(b)(3) requires that the RTP include an Action Element that describes "programs and actions necessary to implement the plan and assigns implementation responsibilities." Section 65080(b)(3) compliments and reinforces the requirement set forth in Section 65080(a) that the RTP be "action oriented and pragmatic." Without these timelines, the Draft falls short of Section 65080's mandate that the RTP be "action oriented and pragmatic" and identify clear roles and responsibilities for implementation.

We recommend that TCAG revise the timelines for projects identified to meet the needs of the low-income Tulare County residents within each year to ensure the needs of disadvantaged communities are met in a timely fashion within the 2018-2022 planning cycle and throughout the 2042 planning horizon.[5] Well-timed implementation of policy will facilitate TCAG's goals of 18.6% GHG reductions per capita and assure TCAG is planning affirmatively to address historical inequity. Many projects for rural communities are small and inexpensive and their impact on public safety is much more critical than other projects slated for more immediate construction. TCAG should include a policy to address the public health and safety risks associated with absent or deficient infrastructure and take affirmative actions to remove or ameliorate disparate adverse conditions impacting disadvantaged communities.

Identifying timelines will assist in planning and assuring protected classes within Tulare County are adequately served within the 2018-2022 RTP Cycle. Federal Transportation Administration Circular 4703.1 identifies three guiding environmental justice principles which COGs must incorporate within the transportation decision-making process. The third principle require COGs and other agencies to "prevent the denial of, reduction in, *or significant delay in the receipt of benefits* by minority and low-income populations."

To provide clear direction to address community needs and satisfy TCAG's duty to ensure timely delivery of benefits and services to minority and low-income populations, we also ask that the 2018 RTP/ SCS include a description of specific investments, funding sources, and actions that will be implemented during the first four years to address the needs identified and prioritized by disadvantaged communities in existing planning documents or during public comment periods.[6] Adequate incorporation into timelines is key to address the documented creation of disadvantaged unincorporated communities as a product of redlining and discriminatory real estate practices coupled with historic trends of disinvestment.

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[5] Section 21.5 (b) (7) "Where prior discriminatory practice or usage tends, on the grounds of race, color, or national origin to exclude individuals from participation in, to deny them the benefits of, or to subject them to discrimination under any program or activity to which this part applies, the applicant or recipient must take affirmative action to remove or overcome the effects of the prior discriminatory practice or usage. Even in the absence of prior discriminatory practice or usage, a recipient in administering a program or activity to which this part applies, is expected to take affirmative action to assure that no person is excluded from participation in or denied the benefits of the program or activity on the grounds of race, color, or national origin."

[6] U.S Dept. of Transportation, updated Environmental Justice Order 5610.2 (a) (amended 5/2/2012), pp. 14-15. App. sec 1 (f); Federal Transit Administration Circular 4703.1, "Environmental Justice Policy Guidance for Federal Transit Administration Recipients" (Aug. 15,2012), pp.2)

b. Revise Project Selection Criteria

TCAG's project selection criteria should be developed to facilitate addressing the needs of disadvantaged communities including fully mitigating the potential significant environmental impacts of the RTP identified in the PEIR As an internally consistent document, this selection criteria would complement TCAG's proposed objective to "Ensure equitable access to effective and viable transportation options for all, regardless of race, gender, income, national origin, age, physical ability with a focus on benefiting the regions' most vulnerable populations and closing exiting unmet transportation gaps that are warranted." We also encourage TCAG to create a selection criterion for prioritizing projects for public participation throughout the project planning and environmental review phases.

III. Recommended Changes to Sustainable Communities Strategy

a. Maximize funding for healthy, equitable, and sustainable communities and the transportation choices that make them possible

Despite the projected goals for GHG reductions, TCAG's Blueprint Scenario projects minimal increases for walking and biking by the 2042 planning horizon. As currently drafted, the 2018 RTP/SCS reads: "Walking and biking mode count are expected to increase by 0.63% and 0.08% percent, respectively, when compared to existing conditions. The growth will be more significant in urban areas with the increase number of close destinations and activities, and less so in rural areas where distances and lack of infrastructure may make some walk and bicycles trips impractical."[7]

Larger increases in transit are needed to provide real and timely alternatives to residents of Tulare County. Currently, transit ridership is lower than the state average since many barriers prevent widespread usage thus perpetuating reliance on personal vehicles or informal carpooling for transportation. For example, the draft document states "TCAT is the county connector service for rural to urban areas with the largest area to cover and receives the lowest estimated ridership in the county on some routes"[8]. To increase use of transit especially in rural areas of the county we suggest a policy to expand use of micro transit. While the existing partnership with CalVans Vanpool program we encourage other models of micro transit like Cantua Creek *Van Y Vienen*, a community-led rideshare program that provides reliable service, local hire, and flexibility in destination to meet a community's local needs. [9] This model provides valuable insight to reducing VMT and GHG emissions through rural electrification and the flexibility to meet community needs and destinations and has potential for implementation in Tulare County.

Furthermore, statute requires TCAG to "explicitly consider" the input of the public participation process.The results from the 71 outreach events identified barriers as to why survey participants do not use transit. Data reveals that some of the most significant barriers to using public transit were that transit:

A) does not stop near their homes

[7]2018 RTP/SCS, Health Impact Assessment. Pg. 11
[8]Ibid. pg 12.

[9] "Van Y Vienen" Brings Electric Vehicle Ride Sharing to Two Rural Fresno Communities. Retreived from: http://kvpr.org/post/van-y-vienen-brings-electric-vehicle-ride-sharing-two-rural-fresno-communities

B) does not stop where they need to go
C) does not run late
D) does not come often enough.

As a result, the policy element should include policies to explicitly consider, address and overcome the barriers recorded through outreach. Meaningful actions may yield higher than projected increases in transit ridership and help mitigate road congestion and improve farebox recovery.

b. Shift Funds Away From Road Expansion and Toward Investments That Meet Regional Health, Equity, and Sustainability Goals

It is well established that by 2042 Tulare County will experience a vast population growth of roughly 133,000, an increase of 22% in vehicle trips per day by the year 2042 so planning includes roadway expansion and congestion management i.e. "Caltrans and the Tulare County region will be placing more emphasis on corridors as an important element of the transportation system."[10] However, minimal increases in transit and active transportation fundamentally preserve a transportation system predicated on continued reliance of passenger vehicles as the primary source of transit. The 2018 RTP/SCS states that, although the preferred scenario will provide different mobility options, "the clear majority of Tulare County Residents will still use automobiles to complete a majority of trips, especially those over three miles." Current assumptions conclude a -0.10% reduction in total mileage traveled and a 11.20% increase in Transit ridership (from 35,700 to 39,700 rides per day).The Highway and arterial investments included in the Plan attempt to optimize the existing system and expand it were necessary to ensure that the mobility needs of the region are met yet still result in an estimated 287 new miles of road to be built. The new lane miles in TCAG's 2018 RTP/SCS reduce congestion yet in doing so but creates various significant environmental impacts as a result.

The Draft RTP's emphasis highway expansion and road development to facilitate travel by car neglects existing and future active transportation and public transit needs of Tulare County residents, and in particular, the needs of lower income residents and residents of color who disproportionately lack access to personal vehicles to meet their transportation needs. By failing to invest adequately in these modes of transportation, the RTP entrenches existing disparities in access to appropriate transportation options that impact historically disadvantaged communities and runs counter to applicable law and guidance which emphasizes the importance of holistic transportation planning to meet the needs of all users, including pedestrians, cyclists, and residents of disadvantaged communities, and addresses resiliency needs. See e.g., 23 C.F.R. § 450.300 (setting forth the national policy that each MPO conduct a comprehensive transportation-planning process which encourages and promotes the mobility needs of pedestrians and cyclists); 23 C.F.R. § 450.305 (Requiring MPOs to conduct a comprehensive planning process which increases the accessibility and improves resiliency of the transportation system); 23 C.F.R. § 450.324(f) (providing that the metropolitan transportation system should function as an integrated system with pedestrian and bicycle facilities). The Final RTP must

[10] 2018 RTP/SCS Action Element pg. B-50.

correct this imbalance by dedicating additional resources to address active transportation and other transportation needs of people without access to a personal vehicle. Our recommendations in other parts of this letter regarding improving allocations to address the transit needs of disadvantaged communities generally support this aim.

c. Prioritize Existing Road Maintenance Needs

Regional Transportation Plans adopted after May 26, 2018 must "[e]mphasize the preservation of the existing transportation system."[11] The 2018 RTP/SCS adds 287 miles of roadway however does not identify the roads, active transportation, and public transit infrastructure slated to be continually affected by deferred maintenance . Without the ability to meet its current maintenance burden, the existing transportation system will further deteriorate over the 2042 horizon.

According to TCAG statistics, Tulare County has over 3,100 miles of rural roads that are behind in maintenance. However, with current funding, the County estimates that overall Pavement Condition Index (PCI) would drop from overall at 66 to 57 by 2027. To maintain the existing PCI an additional $7 million is needed. The City of Visalia determined it will take an additional $7.5 million to maintain its current PCI at a level of 60. With the current level of funding, the City's PCI is also estimated to decline. The City of Tulare estimates there is a $60 million in deferred maintenance that will necessitate ongoing expenditures of at least $4.5 million a year to maintain a PCI of 70. Porterville estimates there is a $13.15 million shortfall for road maintenances to reach its goal of increasing its current rating of 55 to 75.[12]

Many unincorporated communities have PCIs much lower than the averages of larger metropolitan areas. In community meetings, residents from Matheny Tract, West Goshen, Ivanhoe, Tooleville, and Tulare claim that the general state of disrepair leads to increased costs burdens concerning general wear and tear on their personal vehicles and prevents safe active transit. This had led to increased pedestrian danger and inability to fully utilize local travel corridors to navigate within a community and access key transit stops or routes that connect to essential services.

Additionally, to the extent that active transportation and public transit infrastructure does exist in disadvantaged communities and lower-income neighborhoods, it is more often than not crumbling or in a state of disrepair.

In keeping with MAP-21, we strongly urge that TCAG revise the Draft RTP to account for the maintenance needs of existing roads and active and public transportation infrastructure with emphasis in considering the needs disadvantaged communities.[13] Maintaining local roads will also provide for increased traffic to be redirected from major highway corridors by personal and transit vehicles, potentially lessening the need for costly highway expansion and subsequent maintenance burdens.

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[11] Title 23 U.S.C. § 134 *(amended by Moving Ahead for Progress in the 21st Century (MAP-21) and Fixing America's Surface Transportation (FAST) Acts, which apply to RTPs adopted after May 26, 2018) (*H) emphasize the preservation of the existing transportation system.

[12] 2018 RTP/SCS Action element pg. B 66 - B 68.

[13] (23 C.F.R. 450.316(a)(1)(vii) (23 C.F.R. 450.316(a)(1)(vii).

d. Recognize That Roadway Expansion Induces More Driving Demand and Prioritize More Effective Strategies That Not Only Reduce Congestion But Better Meet Air Quality And Climate Goals

Although congestion management is required through regulations, the 2018 RTP/SCS allocates a disproportionate share of funding to this end rather than towards alternatives that make it easy and convenient for people to drive less and that support the state's infill development and greenhouse gas reduction goals. Research has found that expanding roadway capacity has the potential to be counterproductive. It fails to alleviate congestion and leads to both short- and long-term increases in vet and associated air pollution. Susan Handy concludes, "A capacity expansion of 10% is likely to increase VMT by 3% to 6% in the short-run and 6% to 10% in the long-run."[14] Other research has demonstrated that induced traffic from highway expansion leads to increased congestion on feeder streets and on-ramps that offset some of the air quality and congestion benefits of the project.[15]

Transit plays a key role in the regional effort to reduce traffic congestion, VMT and vehicle emissions particularly in urbanized areas. The increased use of transit is a key element to meeting legislative requirements such as AB 32 and SB 375. Transit systems also play a key role in the mobility for those individuals who are unable to drive, including youth and the elderly, as well as low income individuals and people with disabilities. MAP-21/FAST Act added a new requirement for RTPs to also include transportation and transit enhancement activities, including consideration of the role that intercity buses ay play in reducing congestion, pollution, and energy consumption in a cost-effective manner and strategies and investments that preserve and enhance intercity bus systems, including systems that are privately owned and operated, including transportation alternatives, as defined in 23 U.S.C. 101(a)

e. Incorporate Projects Other Than Highway Expansion Early On In Planning Period to Meet Address Needs of Low-Income and Disadvantaged Communities

While the 2018 RTP/SCS does reduce congestion overall compared to a no project scenario, TCAG claims "However, there is an insignificant amount of roadway experiencing poor service levels in environmental justice TAZ's overall." However, service levels are not the only concern as identified in community meetings or TCAG's public workshop on June 25th. As such, we recommend that TCAG should analyze and frontload other community-driven projects which fit EJ communities' needs including but not limited to improving safety and increased multi-modal connectivity more appropriately to identify if these needs are met and if investments are as equitable as TCAG claims otherwise.

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[14] Handy, Susan. (2015) Increasing Highway Capacity Unlikely to Relieve Traffic Congestion. *National Center for Sustainable Transportation* Retrieved from http://www.dot.ca.gov/newtech/researchreports/reports/2015/10-12-2015-NCST_Brief_InducedTravel_CS6_v3.pdf.

[15] Font, Anna et al (2014) Degradation in urban air quality from construction activity and increased traffic arising from a road widening scheme in *Science of the Total Environment.* Retrieved from https://www.sciencedirect.com/science/article/pii/S0048969714010900. Vedantham, Ram et al (2011) Combining continuous near-road monitoring and inverse modeling to isolate the effect of highway expansion on a school in Las Vegas in *Atmospheric Pollution Research.* Retrieved on https://www.sciencedirect.com/science/article/pii/S1309104215304608.

For example, the Communities of Matheny Tract, Tooleville, Ivanhoe, Ducor, and West Goshen have expressed interest in increased access to micro transit in their communities. A viable option which is currently in service is *Van y Vienen*, a community-operated on-demand 100% electric vanpool. This innovative partnership with Green Commuter and Fresno EOC fills gaps in service for community residents in Cantua Creek and El Porvenir, two disadvantaged unincorporated communities in west Fresno County.[16] This program formalizes to some degree an internal culture of carpooling that exists through necessity in many low income and disadvantaged communities in the Valley and Tulare County.

We also recommend the explicit consideration of projects proposed by community members. A recipient of federal funding may not "utilize criteria or methods of administration which have the effect of subjecting persons to discrimination because their race, color, or national origin."[17] TCAG's method of selecting projects of allowing local jurisdictions to select which projects are included in the RTP results in the near categorical exclusion of projects proposed by residents to benefit communities disproportionately comprised of protected classes and therefore has an unlawful effect of denying transportation improvements based on residents' inclusion in a protected class. Without any analysis, TCAG effectively ignores that input. TCAG's methodology therefore conflicts with the federal requirement that MPOs "explicitly consider" input provided by the public and that carretera identified by the Department of Transportation to assess TCAG's Title VI compliance.

f.Support Rural Smart Growth

TCAG should implement effective policies for rural smart growth to comply with its obligation to address current disparities in transportation investment.[18] Such a policy would also preserve farmland and reduce GHG emissions by encouraging existing developments in rural communities and compliment the recently approved Community, Hamlet, and Legacy Plans conducted by Tulare County. In order to comply with law requiring requiring the RTP to be an "internally consistent" document, TCAG should integrate rural smart growth throughout the document, including in the Policy Element, Action, Growth Scenario, and other chapters.[19]

IV. Environmental Justice Chapter

a. Define and provide metrics for "Fair Share"

While we appreciate TCAG's initial analysis to identify projects' adverse impacts on disadvantaged and federally protected communities there is no clear definition as to what a community's' "fair share" of project allocation is. Existing statue states "Each MPO is required by federal regulation and by state laws to plan for and implement transportation system improvements that will provide a fair share of benefits to all residents, regardless of race, ethnicity or income level".[20] A formal definition of "fair share" should be developed by TCAG in

[16] http://kvpr.org/post/van-y-vienen-brings-electric-vehicle-ride-sharing-two-rural-fresno-communities
[17] 49 CFR Section 21.5(b)(2); See also Gov. Code Section 11135
[18] DOT Title VI Regulations 49 CFR 21.5(b)(7).
[19] Government Code Section 65080 (b).
[20] CTC RTP Guidelines for MPOs, pg 74.

consultation with community members to provide clear and actionable direction to inform the 2018 RTP/SCS's 2018-2022 and 2018-2042 planning horizons.

To ensure the 2018 RTP/SCS incorporates a "fair share" of expenditures and benefits to low-income and disadvantaged communities we recommend referencing the California Air Resources Board's Greenhouse Gas Reduction Fund expenditure guidelines as a measure of equity. These guidelines require implementing agencies to "give priority to those [investments] that maximize benefits to disadvantaged communities" by favoring projects which "provide. . .the most significant benefits to them." More specifically, the Guidelines require that every investment intended to benefit a disadvantaged community and "provide direct, meaningful, and assured benefits to one or more disadvantaged communities." [21] ARB's guidelines specify the benefit each GGRF investment must provide as "a benefit that meaningfully addresses an important community need" in a disadvantaged community and as such we recommend a total investment ratio *at least* between the 25% per recommendations of the GGRF and the 33% which represents the percentage of total EJ TAZ population for Tulare County utilized for modeling purposes.

b. Redefine Equitable Distribution of Benefits

As an internally-consistent document, TCAG's 2018 RTP/SCS should be guided by a policy that states: "*Ensure equitable distribution of benefits and burdens of transportation projects in alignment with TCAG's Title VI and Environmental Justice obligations through timeline implementation of projects identified in needs assessments and requested by disadvantaged communities and environmental justice communities."* As an key planning document, the RTP affords an opportunity to meet California's climate goals relating to drastically reducing vehicle emissions or incorporating climate adaptation into policy and projects. Next, both state and federal law mandates TCAG to ensure the RTP incorporates equity and does not cause intentional or disparate impacts and fully incorporates low-income and disadvantaged communities into the transportation decision-making process. To this end, 23 CFR 450.316 (a)(1)(vii) states that TCAG must consider the needs of those traditionally underserved by existing transportation system, such as low-income and minority households, who may face challenges accessing employment and other services.

As written the 2018 RTP/SCS provides for an inequitable share of projected investments for Disadvantaged Communities in Tulare County. First, we do not endorse the metric of "Share of Area in County" as an adequate environmental justice determinant when determining "fair share". If this calculation is based on population and proportion of vehicles over "Share of Area in County", logic would lead one to insist "Share of Roadway Projects in EJ Communities" were increased to 33% instead of 10.2%.[22] As a result, we do not agree with TCAG's claim that "EJ Communities will be receiving a larger share of roadway projects than just the area that they cover" being equitable.

Total Distance of RTP Road Projects (mi)	344

[21] Air Resources Board, Cap-and-Trade Auction Proceeds Funding Guidelines for Agencies that Administer California Climate Investments (Dec. 2015), p.2 A-6.
[22]TCAG RTP/SCS Environmental Justice Chapter, pg. 12.

Total Distance of Road Projects in EJ Communities	35.15
Share of Roadway Projects in EJ Communities	10.2%
EJ Communities Share of Area in County (Excluding National Park and unpopulated areas)	1.7%

There is further inadequate analysis as to what percentages of total investment in the RTP serve disadvantaged communities (See figure below). We insist such an analysis be conducted prior to the adaptation of the 2018 RTP/SCS to ensure that timely projects are planned for communities. For consideration of historical inequity and investment trends over time we also insist TCAG utilize current expenditure records to perform a retroactive analysis to identify the percentages of roadway investments for the last 20 or 30 years to provide insight to possible inequity and trends of disinvestment that can be addressed through the 2018 RTP Update.[23]

TCAG should also develop metrics for equitable investments in rural areas for overall electrification of the transit system within the proposed Electric Vehicle Implementation Plan. Currently, disadvantaged unincorporated communities do not have access to reliable charging infrastructure thus making alternative fuel sources effectively out of range. Access to charging stations and alternative fueling infrastructure will be essential in overcoming barriers like range anxiety and inability to fully utilize a ZEV in Tulare County.

Investment Share of RTP Projects

Operation & Maintenance	36%
Transit	22%
Bike/Pedestrian	5%
Total Roadway*	38%
*SR-99 Widening	9%
*Regional Widening	12%
*Regional Interchanges	6%
*Local Road Projects	11%

[23] Section 21.5 (b) (7) "Where prior discriminatory practice or usage tends, on the grounds of race, color, or national origin to exclude individuals from participation in, to deny them the benefits of, or to subject them to discrimination under any program or activity to which this part applies, the applicant or recipient must take affirmative action to remove or overcome the effects of the prior discriminatory practice or usage. Even in the absence of prior discriminatory practice or usage, a recipient in administering a program or activity to which this part applies, is expected to take affirmative action to assure that no person is excluded from participation in or denied the benefits of the program or activity on the grounds of race, color, or national origin."

TCAG concludes that "environmental justice communities will receive more in roadway expenditures than the area that they cover in the Country, while also benefiting more from the transit investments in the plan that non-environmental justice communities." *However, without an analysis based on total population vs total investments that applies to more than road way investment, these conclusions are not robustly founded nor publicly transparent.* Such an analysis can be supported by TCAG's claim that "TCAG is committed to refining and improving the techniques its uses to measure impacts on Environmental Justice Communities, to better assess the benefits and burdens of the planning process on the various populations within the Tulare Region."[24]

Government Code 65080 (B)(1) requires the inclusion in the RTP of a Policy Element which describes transportation issues and identifies and quantifies transportation needs throughout the region. While the Environmental Justice section of the Draft RTP Policy Element states generally that "TCAG seeks to assure that plan benefits and burdens are not inevitable distributed within the region" the Policy Element includes no actual discussion of existing or potential inequalities in transportation infrastructure or service in the County nor access to basic services. The 150,000 residents in Tulare County's unincorporated regions face unique and heightened barriers to mobility in comparison to other areas other Country such as increased carpooling due to inability to maintain a personal vehicle or general lack of physical infrastructure.

To further assess equity, we recommend a Near-Term Equity analysis for Environmental Justice Communities- identified in recent best practice literature intending to "supplement the standard, long-range forecasting approach [to analyzing Title VI and EJ] with nearer-term analyses."[25] While these current patterns and conditions may have not been created by TCAG, the RTP and its investments pay a significant role in determining whether they will be maintained, exacerbate, or ameliorate. Recommended steps include:

- Identifying with the participation of affected low income and minority residents, current patterns and conditions relating to an unfair share of the burdens based on health metrics, race, ethnicity, and income
- Identifying contributing factors
- Setting a quantified goal for impacting the factors
- Identifying actions and investments that will be made during the four-year life of the RTP to achieve those goals
- Tracking progress

We believe including other metrics may provide a comprehensive view of equity that allows TCAG to robustly inform short-term and long-term planning and investments to meet the needs of low-income and disadvantaged communities in Tulare County.

[24]2018 RTP/SCS Environmental Justice Chapter, pg 17.

[25] Karner, A. and D. Niemeier (2013). "Civil rights guidance and equity analysis methods for regional transportation plans; a critical review of literature and practice." Journal of Transport Geography 33: 126-134, pg. 132. "This approach 'allows for adaptive responses that can help guard against unexpected incremental inequities that lock in larger effects, potentially improving the analytical treatment of race. Conducting these types of analyses would also serve to increase responsiveness to public input."

V. PEIR - Highway expansion and significant impacts after mitigation

a. Hydrology

Although the Environmental Justice Chapter claims that TCAG "requires that these projects to be financially and environmentally sustainable as to not fall into disrepair or have negative impacts on the surrounding environment following construction."[26] However, with concerns to hydrology the 2018 RTP/SCS contains many impacts that are deemed "significant after mitigation" - particularly due to the addition of 287 new lane miles. This is a concern to our organization because the Kaweah sub basin that provides groundwater to Tulare County is already categorized as a critically overdrafted basin and is extremely vulnerable to impairment of water quality. The expansion of the regional transportation systems will affect the Sub basin's ability for recharge and anticipates increased stormwater runoff[27] and increased likelihood for impairment of water quality. The PEIR identifies the following impacts Significant and unavoidable after mitigation:

- Impact W-1: Violate any water quality standards or waste discharge requirements
- Impact W-2: Substantially deplete groundwater supplies or interfere substantially with groundwater recharge such that there would be a net deficit in aquifer volume or a lower of the local groundwater table level
- Impact W-3: Substantially alter the existing drainage pattern of a site or area, including through the alteration of the course of a stream or river, in a manner which would result in substantial erosion or siltation on- or off=site or result in substantial soil erosion or loss of topsoil
- Impact W-4: Substantially alter the existing drainage pattern of a site or area, including through the alteration of the course of a stream or river, or substantially increase the rate or amount of surface runoff in a manner which would result in flooding on-or off-site
- Impact W-5: Create or contribute runoff water that would exceed the capacity of existing or planned storm water drainage systems or provide substantial additional sources of polluted runoff
- Impact W-6: Otherwise substantially degrade water quality
- Impact W-9: Not have sufficient water supplies available to serve the project from existing entitlements and resources, so that new or expanded entitlements would be needed

B-1

The Sustainable Groundwater Management Act identifies groundwater contamination as an undesirable result. When considering current communities with trends of water quality impairment and the absence of a static source of funding for operations and maintenance, increasingly impaired water bodies pose a disproportionate risk to unincorporated and majority minority communities and as a result poses a significant environmental injustice. This is not

[26] 2018 RTP/SCS Environmental Justice Chapter, pg. 3.

[27] Title 23 U.S.C. Section 134. (I) improve the resilience and reliability of the transportation system and reduce or mitigate stormwater impacts of surface transportation
(amended by Moving Ahead for Progress in the 21st Century (MAP-21) and Fixing America's Surface Transportation (FAST) Acts, which apply to RTPs adopted after May 26, 2018)

internally consistent with the policy to "conserve agricultural land, habitat, groundwater recharge area."

While acknowledging the role of Highways in the current assumptions of the 2018 RTP/SCS, the expansion of highways creates a scenario that reduces GHG emissions at the cost of the extremely vulnerable hydrology of the region. As an alternative to the creation of more lane miles, it is suggested that TCAG sets a metric to triple transit ridership and increase maintenance of existing road infrastructure. Through a specific goal, TCAG will have metrics to gauge the effectiveness and efficacy of its transit policy. B1

B. air quality

A universal criterion listed in Guidelines for the Selection of RTIP Projects (Table A-4) cities that "capacity increasing highway projects must not degrade air quality. This will be determined through the conformity process". Title 40 CFR Parts 51 and 93 also state "transportation conformity to a SIP means that on-road transportation activities will not produce new air quality violations, worsen existing violations, or delay timely attainment of the NAAQS."[28] The protection of air quality is a priority of Leadership Counsel and several studies illustrate linkages between capacity-increasing projects and increased emissions resulting from induced driving on feeder streets.

The PEIR also claims that "given the unknown scale of construction over the 24-year period covered by the 2018 RTP/SCS, it is possible that criteria pollutant emission could exceed the annual SJVAPCD significance thresholds listed in Table 4.3-4. In addition, increased dust from construction activities could increase the number of cases of Valley Fever. Consequently, short-term emissions resulting from construction would have a significant impact." This violates the protections of 23 CFR 450.334(d) that state **"**Transportation conformity to a SIP means that on-road transportation activities will not produce new air quality violations, worsen existing violations, or delay timely attainment of the NAAQS." [29] It is the obligation of TCAG to ensure that the 2018 does not result in any additional air quality violations with Tulare County having many sensitive regions and higher rates of asthma than state averages. B2

For example, the projects in the metropolitan areas of Tulare, Visalia, and Porterville may have potential that may affect the nearby EJ TAZs of West Goshen, Matheny Tract, Soults Tract, Lone Oak Tract, East Tulare Villa, Poplar, Woodville, Townville, Decor, Terra Bella, and Strathmore.

V. Recommended Changes to Public Participation Plan

a. Sustained, Targeted Outreach to Meet Identify and Address Needs of Low-Income and Disadvantaged Communities

TCAG's Public Participation Plan must be developed "in consultation with all interested parties" and must, among other things, "at a minimum, describe explicit procedures, strategies, and desired outcomes for . . . *seeking out and considering the needs of . . . low-income and minority households*." We applaud the robust round of outreach at 71 events during the scenario

[28] CTC RTP Guidelines for MPOs, p. 107.

[29] "Transportation conformity to a SIP means that on-road transportation activities will not produce new air quality violations, worsen existing violations, or delay timely attainment of the NAAQS." CTC RTP Guidelines for MPOs, p. 107*"*

selection process. However, considering this initial round of. However statue also requires "periodically reviewing the effectiveness of the procedures and strategies contained in the participation plan to ensure a full and open participation process."[30] As such, we recommend that TCAG should include policies in the Public Participation Plan to provide follow-up meetings to communities involved in the initial scenario selection process and to translate all key materials to languages other than English in a timely fashion in order to "provide the public with the information and tools necessary to provide a clear understanding of the issues and policy choices."[31]

A recommendation that affirms TCAG's commitment to "ensure the full and fair participation by all potentially affected communities in the transportation decision-making process" can be incorporated as follows:

Goal: Increase opportunities for public involvement in transportation planning processes.
Strategy: Provide varied opportunities for public review and input and be responsive to that input.

Procedures:

- Provide timely public notice of meetings.
- Conduct or attend project/process focused meetings outside the usual monthly TCAG Board meeting to gather public input.
- Work with other public agencies and organizations to gather public input regarding transportation processes and issues.
- Respond to public input in a professional, timely and accurate manner
- *Conduct follow-up meetings with communities participating in initial scenario selection process*

Furthermore, despite claims that TCAG does have translation software, not even the executive summary of the 2018 RTP/SCS update is not available in another language other than English.[32] According to American Community Survey, 13.90% of the population of Tulare County is affected by Language Isolation. For EJ TAZs, the percentage increases to 21%. Translated from percentages, this totals 63,111 and 31,821 residents in the County at large and in EJ TAZs that are excluded from full participation by lack of informational material. However, when extrapolated, EJ TAZs' total population is roughly one-third of the entire county (pg. 5). We strongly urge TCAG change its Public Participation Plan to include translated documents and/or of factsheets at least available online.

[30] 23 C.F.R. § 450.316 (a) (1) (x)

[31] SB 375 § 4. 65080 (b)(2).

[32] 49 CFR § 21.5 (b) (1) (vii) Deny a person an opportunity to participate in the program through the provision of services or otherwise or afford hum an opportunity to do so which is different from that afforded others under the program.

Thank you for the opportunity to provide comment on the 2018 RTP/SCS Update. TCAG staff may direct any comments or questions to phernandez@leadershipcounsel.org or (559) 816-5303.

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Fresno, CA 93721
June 25, 2018

The majority of the comments in this letter relate to the 2018 RTP/SCS and are responded to in the Final RTP/SCS Appendix 39. (See RTP/SCS Responses Leadership Counsel Joint Letter Responses 1-101). These include responses to comments related to Plan alternatives (comments 68, 71, and 83), which are hereby incorporated by reference.

The following responses are to comments on the Draft PEIR.

Response B-1

The comment references several water quality and hydrology impacts that are identified as significant in the Draft PEIR (see page 4.13-32 through page 4.13-47). The commenter indicates that the findings of significance for these impacts are inconsistent with a statement in the Environmental Justice Chapter of the 2018 RTP/SCS which states that TCAG "requires that these projects be financially and environmentally sustainable as to not fall into disrepair or have negative impacts on the surrounding environment…" and the comment further states that the finding of significance is related to the addition of new lane miles.

Environmental justice issues are addressed in Appendix 39 of the RTP/SCS and in responses to comments on the Draft RTP/SCS (Leadership Council Joint Letter Responses 88-97).

The Draft PEIR pages 4.13-23 and 4.12-24) recognizes the Sustainable Groundwater Management Act (SGMA's) role planning for sustainable groundwater management in Tulare County. Regarding the connection between the addition of lane miles and hydrology and water quality impacts, the Draft PEIR identifies numerous mitigation measures that would reduce impacts including preparation of storm water pollution prevention plans (SWPPPs), implementation of BMPs to reduce runoff, and other methods to reduce effects on receiving water bodies (see **Mitigation Measure MM-W-1(a)**). However, as TCAG is not the implementing agency for these projects, they cannot require such measures to be implemented. However, impacts to water bodies are of critical concern to the State of California and are

well-regulated. The PEIR notes (page 4.13-35) that "[b]ecause this PEIR evaluates impacts at the programmatic level, all project circumstances are not foreseeable …." In order to present a conservative analysis, the PEIR identifies the impact as significant at the programmatic level. As individual projects move forward as part of project-specific CEQA review they will be required to reduce impacts to a less than significant level when feasible. The fact that some transportation projects may have project-specific significant and unavoidable hydrology and water quality impacts does not conflict with the 2018 RTP/SCS regional policy (Policy Element p. A-6) to encourage projects that "conserve agricultural land, habitat, groundwater recharge areas……"Further, while the 2018 RTP/SCS does include new lane miles and maintenance of existing facilities, it also includes increases in transit, and bike and pedestrian improvements. Ultimately, the 2018 RTP/SCS seeks balance in the transportation system and must evaluate many factors when planning for the region. Regarding proposed metrics on transit ridership and increased maintenance, please see responses to comments on the Draft RTP/SCS (Leadership Council Joint Letter Response 97).

Response B-2

The transportation conformity process under Section 176 of the Clean Air Act is separate from CEQA air quality impact analysis. Under the transportation conformity process, SIP conformity is determined using the following criteria:

- the RTP must pass an emissions budget test using a budget that has been found to be adequate by EPA for transportation conformity purposes, or an interim emission test;
- the latest planning assumptions and emission models specified for use in conformity determinations must be employed;
- the TIP and RTP must provide for the timely implementation of transportation control measures (TCMs) specified in the applicable air quality implementation plans; and
- interagency and public consultation.

2018 RTP/SCS Appendix 41 explains these criteria further, and demonstrates how the Plan meets these criteria and therefore conforms to the SIP.

Potential project-specific exceedances of SJVAPCD criteria pollutant thresholds or violations of NAAQS discussed in the Draft PEIR are not relevant to and do not affect the 2018 RTP/SCS regional conformity analysis. Further, potential exceedances of SJVAPCD thresholds for short-term construction impacts would not necessarily lead to violations of the NAAQS. Rather SJVAPCD thresholds are used to identify projects with the potential to impact air quality and to require

appropriate mitigation as needed to reduce impacts on a project-by-project basis. Projects with the potential to significantly impact air quality will be required to implement mitigation measures that reduce impacts below a level of significance or the maximum extent feasible.

Environmental justice issues are addressed in the 2018 RTP/SCS Appendix 39 and in responses to comments on the Draft 2018 RTP/SCS (Leadership Council Joint Letter Responses 88-97).

Letter C

June 25, 2018

Benjamin Kimball
Deputy Executive Director
Tulare County Association of Governments
210 N. Church St., Suite B
Visalia, CA 93291

RE: Draft 2018 Regional Transportation Plan / Sustainable Communities Strategy and Draft Program Environmental Impact Report

Dear Mr. Kimball:

We are writing on behalf of Sequoia Riverlands Trust (SRT) and the Leadership Counsel for Justice and Accountability to comment on the Draft 2018 Regional Transportation Plan / Sustainable Communities Strategy (Draft RTP/SCS) and Program Environmental Impact Report (Draft PEIR). SRT is a Visalia-based, accredited land trust that inspires love and lasting protection for important lands, including habitat and farmland in Tulare County. The Leadership Counsel is an environmental justice nonprofit that works with rural and low-income communities affected by degraded environmental conditions, inequitable access to public transit and adverse public health outcomes. Our organizations had the honor of representing environmental stakeholders (SRT) and environmental justice stakeholders (Leadership Counsel) on the Tulare RTP Roundtable.

Tulare County is home to some of the most productive agricultural land on the planet, with annual crop receipts amounting to over $6.3 billion.[1] It hosts habitat corridors crucial to maintaining biodiversity in a changing climate,[2] groundwater recharge areas that can play a key

[1] Tulare County Agricultural Commissioner/Sealer. 2017. Tulare County Crop and Livestock Report, 2016. Retrieved from http://agcomm.co.tulare.ca.us/default/index.cfm/standards-and-quarantine/crop-reports1/crop-reports-2011-2020/2016-crop-report/.
[2] Southern Sierra Partnership. 2010. Framework for Cooperative Conservation and Climate Adaptation for the Southern Sierra Nevada and Tehachapi Mountains. Retrieved from http://www.southernsierrapartnership.org/ssp-framework.html.

role in meeting our region's water needs, [3] and parks that draw visitors from around the world. Thanks to a long legacy of conservation, including not only the designation of Sequoia and Kings Canyon National Parks, but also the innovative Rural Valley Lands Plan (RLVP) adopted in 1975, it has led the region in conserving these resources for future generations. Tulare County's first RTP/SCS continued in these footsteps by adopting a policy of encouraging "projects that support the preservation of farmland and open space," committing to assist agencies with mitigation using Measure R funds, and using San Joaquin Valley Greenprint layers as constraints to development in its preferred land use scenario.[4]

We are grateful to see that the Draft RTP/SCS includes policy commitments to support projects that "conserve agricultural land, habitat [and] groundwater recharge areas," incorporate environmental benefits into the project selection process, and assist agencies with environmental mitigation using Measure R funds.[5] SRT appreciates the opportunity to collaborate with the Tulare County Association of Governments (TCAG) on mitigation, and we stand ready to help with future projects. We also support TCAG's continuing use of San Joaquin Valley Greenprint layers as constraints to development,[6] a best practice that neighboring MPOs are beginning to implement as well.[7]

In keeping with these policy commitments and TCAG's forward-thinking approach on mitigation, however, we would recommend greater specificity regarding farmland mitigation in the PEIR. The PEIR for Tulare County's 2014 RTP/SCS, as amended by the resolution certifying it, included the following mitigation measure: C1

> Measure LU-5(d). Farmland Conservation Easements. Prior to approval of 2014 RTP/SCS projects that may adversely impact prime farmland, the project sponsor shall, when the following mitigation measures are feasible, require that a farmland conservation easement, a farmland deed restriction, or other farmland conservation mechanism be

[3] Thorne, J.H., Roth, N.E., Boynton, R.M., and Woodard, N. 2014. The San Joaquin Valley Greenprint State of the Valley Report. Retrieved from http://www.fresnocog.org/san-joaquin-valley-greenprint-program.
[4] TCAG. 2014a. 2014-2040 Regional Transportation Plan & Sustainable Communities Strategy for Tulare County. Retrieved from http://www.tularecog.org/RTP2014/.
[5] Draft RTP/SCS, A-6.
[6] Draft RTP/SCS, D-7.
[7] This modeling approach was pioneered by TCAG, which used San Joaquin Valley Greenprint layers as constraints to development in its 2014 scenario, and the Santa Barbara County Association of Governments (SBCAG), which used "Regional Greenprint" natural resource layers as constraints to development in its 2013 and 2017 scenarios. TCAG and SBCAG have been joined by the Fresno Council of Governments (Fresno COG), which used San Joaquin Valley Greenprint layers as constraints to development in its 2018 scenario. See Fresno COG. 2018. Draft Regional Transportation Plan / Sustainable Communities Strategy. Retrieved from https://www.fresnocog.org/project/regional-transportation-plan-rtp/.

> granted in perpetuity to a local, regional, or statewide organization or agency whose purpose includes the acquisition and stewardship of agricultural conservation easements. The easement shall provide conservation acreage at a minimum ratio of 1:1 for direct impacts. The conservation area shall be located within Tulare County in reasonable proximity to the project area.[8]

As the Draft PEIR correctly notes, one of TCAG's member agencies (Tulare County) has since adopted an Agricultural Easement Conservation Program, and other member agencies have adopted General Plans that address mitigation for the impacts of development on farmland.[9] But for jurisdictions that do not have a farmland mitigation policy—or those whose policies do not address transportation projects, or are less stringent than the 1:1 requirement TCAG deemed appropriate in 2014—TCAG's 2014 language would provide much-needed guidance. For this reason, we would recommend restoring the language excerpted above, either as an addition to Measure AG-1(b) or as a standalone measure. C-1

We appreciate the opportunity to participate in this process, and we look forward to TCAG's response.

Sincerely,

Adam Livingston
Director of Planning and Policy
Sequoia Riverlands Trust

Pedro Hernández
Policy Advocate
Leadership Counsel for Justice and Accountability

[8] TCAG and Rincon Consultants, Inc. 2014. Final Program Environmental Impact Report: 2014 Regional Transportation Plan and Sustainable Communities Strategy. Retrieved from http://www.tularecog.org/RTP2014/. The language identifying the appropriate holder of conservation easements was added by TCAG Resolution 2014-144 (adopted June 30, 2014).
[9] Draft PEIR, Mitigation Measure AG-1(b). For examples of local farmland mitigation policies, see City of Visalia. 2014. General Plan Update, Policy LU-P-34. Retrieved from http://www.visalia.city/depts/community_development/planning/gp.asp. See also City of Tulare. 2014. Tulare General Plan, Policy COS-P3.12. Retrieved from http://www.tulare.ca.gov/departments/community-development/development-services/planning/2035-tulare-general-plan.

Letter C: Leadership Counsel for Justice and Accountability Sequoia Riverlands Trust

Adam Livingston, Director of Planning and Policy Sequoia Riverlands Trust
Pedro Hernandez, Policy Advocate Leadership Counsel for Justice and Accountability
Leadership Counsel for Justice and Accountability & Sequoia Riverlands Trust
764 P Street Suite 012
Fresno, CA 93721
June 25, 2018

Response C-1

Commenter requests revised language for farmland in the EIR. In responses, **Mitigation Measure AG-1 (a)** has been revised. See **Chapter 3.0, Corrections and Additions.**

Letter D

State of California – Natural Resources Agency
DEPARTMENT OF FISH AND WILDLIFE
Central Region
1234 East Shaw Avenue
Fresno, California 93710
www.wildlife.ca.gov

EDMUND G. BROWN JR., Governor
CHARLTON H. BONHAM, Director

July 3, 2018

Gabriel Gutierrez
Tulare County Association of Governments
210 North Church Street, Suite B
Visalia, California 93291
ggutierrez@tularecog.org

Subject: Tulare County Association of Governments (TCAG) 2018 Regional Transportation Plan/Sustainable Communities Strategy (PROJECT) Draft Programmatic Environmental Impact Report (PEIR) SCH No. 2017041018

Dear Mr. Gutierrez:

The California Department of Fish and Wildlife (CDFW) received a Notice of Availability of a Draft PEIR from the TCAG for the Project pursuant to the California Environmental Quality Act (CEQA) and CEQA Guidelines.[1]

Thank you for the opportunity to provide comments and recommendations regarding those activities involved in the Project that may affect California fish and wildlife. Likewise, we appreciate the opportunity to provide comments regarding those aspects of the Project that CDFW, by law, may be required to carry out or approve through the exercise of its own regulatory authority under the Fish and Game Code. Although the comment period for your request has passed, CDFW would appreciate if you would still consider the following comments.

CDFW ROLE

CDFW is California's **Trustee Agency** for fish and wildlife resources, and holds those resources in trust by statute for all the people of the State (Fish and Game Code, §§ 711.7, subd. (a) & 1802; Pub. Resources Code, § 21070; CEQA Guidelines § 15386, subd. (a)). CDFW, in its trustee capacity, has jurisdiction over the conservation, protection, and management of fish, wildlife, native plants, and habitat necessary for biologically sustainable populations of those species (*Id.*, § 1802). Similarly, for purposes of CEQA, CDFW is charged by law to provide, as available, biological expertise during public agency environmental review efforts, focusing specifically on projects and related activities that have the potential to adversely affect fish and wildlife resources.

[1] CEQA is codified in the California Public Resources Code in section 21000 et seq. The "CEQA Guidelines" are found in Title 14 of the California Code of Regulations, commencing with section 15000.

CDFW is also submitting comments as a **Responsible Agency** under CEQA (Pub. Resources Code, § 21069; CEQA Guidelines, § 15381). CDFW expects that it may need to exercise regulatory authority as provided by the Fish and Game Code. As proposed, for example, the Project may be subject to CDFW's lake and streambed alteration regulatory authority (Fish and Game Code, § 1600 et seq.). Likewise, to the extent implementation of the Project as proposed may result in "take" as defined by State law of any species protected under the California Endangered Species Act (CESA) (Fish and Game Code, § 2050 et seq.), related authorization as provided by the Fish and Game Code will be required.

Fully Protected Species: CDFW has jurisdiction over fully protected species of birds, mammals, amphibians, reptiles, and fish, pursuant to Fish and Game Code sections 3511, 4700, 5050, and 5515. CDFW prohibits and cannot authorize take of any fully protected species.

Water Pollution: Pursuant to Fish and Game Code Section 5650, it is unlawful to deposit in, permit to pass into, or place where it can pass into "Waters of the State" any substance or material deleterious to fish, plant life, or bird life, including non-native species. It is possible that without mitigation measures activities occurring from tiered Projects could result in pollution of Waters of the State from storm water runoff or construction-related erosion. Potential impacts to the wildlife resources that utilize these watercourses include the following: increased sediment input from road or structure runoff; toxic runoff associated with development activities and implementation; and/or impairment of wildlife movement along riparian corridors. The Regional Water Quality Control Board and U.S. Army Corps of Engineers also has jurisdiction regarding discharge and pollution to Waters of the State.

Nesting Birds: CDFW has jurisdiction over actions with potential to result in the disturbance or destruction of active nest sites or the unauthorized take of birds. Fish and Game Code sections that protect birds, their eggs and nests include, 3503 (regarding unlawful take, possession or needless destruction of the nest or eggs of any bird), 3503.5 (regarding the take, possession or destruction of any birds-of-prey or their nests or eggs), and 3513 (regarding unlawful take of any migratory nongame bird).

PROJECT DESCRIPTION SUMMARY

Proponent: Tulare County Association of Governments

Objective: The TCAG serves as a Metropolitan Planning Organization and is preparing a Regional Transportation Plan/Sustainable Communities Strategy (RTP/SCS) for its metropolitan planning area. The 2018 RTP/SCS addresses future transportation needs in Tulare County. A RTP/SCS is prepared every four years, and the 2018 plan serves as an update to the 2014 RTP/SCS. The RTP/SCS is a long-range plan that serves to: (1) identify regional transportation planning policies and projects; (2) describe planning

assumptions and growth trends for regional growth and future needs for travel and goods movement; (3) identify planning and land use strategies; (4) discuss financial constraints; and (5) provide goals, policies, and performance indicators to increase mobility and meet greenhouse gas reduction targets. The purpose of the Draft PEIR is to provide decision-makers, responsible agencies, and the public with an analysis of the potential environmental consequences of implementation of the regional transportation system from a regional perspective and in a programmatic manner.

Location: Transportation projects in Tulare County.

Timeframe: The RTP/SCS has a horizon year of 2042.

COMMENTS AND RECOMMENDATIONS

CDFW offers the comments and recommendations below to assist the TCAG in adequately identifying and/or mitigating the Project's significant, or potentially significant, direct and indirect impacts on fish and wildlife (biological) resources.

I. Environmental Setting and Related Impact

CDFW understands that the TCAG seeks to develop an informational document to inform decision-makers, responsible agencies, and the public of the environmental consequences of approving transportation projects within Tulare County. The PEIR provides a framework of mitigation measures for subsequent, site-specific environmental review documents. The Draft PEIR contains numerous mitigation measures related to biological resources; however it isn't clear if these measures will be sufficient in minimizing impacts to a level that is less than significant. Given the county-wide implications of this RTP/SCS, CDFW is concerned that subsequent projects could impact special-status species known to occur in Tulare County including, but not limited to, the State and federally threatened California tiger salamander (*Ambystoma californiense*), the State and federally endangered and State fully protected California condor (*Gymnogyps californianus*), the State endangered and fully protected bald eagle (*Haliaeetus leucocephalus*), the State fully protected golden eagle (*Aquila chrysaetos*), the State endangered great gray owl (*Strix nebulosa*), the State threatened Swainson's hawk (*Buteo swainsoni*), the State candidate endangered tricolored blackbird (*Agelaius tricolor*), the State and federally endangered southwestern willow flycatcher (*Empidonax traillii extimus*), the State candidate threatened fisher (*Pekania pennanti*), the State threatened San Joaquin antelope squirrel (*Ammospermophilus nelsoni*), the State threatened and federally endangered San Joaquin kit fox (*Vulpes macrotis mutica*), the State and federally endangered Tipton kangaroo rat (*Dipodomys nitratoides nitratoides*), the State candidate threatened foothill yellow-legged frog (*Rana boylii*), the State and federally endangered southern mountain yellow-legged frog (*Rana muscosa*), and the State fully-protected as well as State and federally endangered blunt-nosed leopard lizard (*Gambelia sila*). Tulare County also supports a number of State species of special

concern including, but not limited to, black swift (*Cypseloides niger*), burrowing owl (*Athene cunicularia*), California spotted owl (*Strix occidentalis occidentalis*), northern goshawk (*Accipiter gentilis*), loggerhead shrike (*Lanius ludovicianus*), American badger (*Taxidea taxus*), western spadefoot (*Spea hammondi*), San Joaquin coachwhip (*Masticophis flagellum ruddocki*), coast horned lizard (*Phrynosoma blainvillii*), pallid bat (*Antrozous pallidus*), Townsend's big-eared bat (*Corynorhinus townsendii*), spotted bat (*Euderma maculatum*), and western red bat (*Lasiurus blossevilii*). In addition, numerous special-status plants occur in Tulare County including, but not limited to, the State endangered and federally threatened Springville clarkia (*Clarkia springvillensis*), the State endangered and federally threatened San Joaquin adobe sunburst (*Pseudobahia perisonii*), and the State and federally endangered California jewelflower (*Caulanthus californicus*). In addition, wetland, riparian, and water features that may be subject to CDFW's lake and streambed alteration regulatory authority (Fish and Game Code, § 1600 et seq.) exist within Tulare County. As such, CDFW recommends that individual tiered Projects be reviewed for impacts to biological resources on a case-by-case basis and that the following mitigation measures be made conditions of their approval.

Would the Project have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special status species in local or regional plans, policies, or regulations, or by CDFW or United States Fish and Wildlife Service (USFWS)?

Section 4.4 Biological Resources, MM-BIO-1(a), page 4.4-21 through 4.4-22

COMMENT 1: Special-status species

Issue: Tulare County supports a variety of habitat and community types, upon which numerous special-status, threatened, and endangered species depend (CDFW 2018). Unauthorized take of species listed as threatened, endangered, or rare pursuant to CESA or the Native Plant Protection Act is a violation of Fish and Game Code. The Draft PEIR includes mitigation measures that lead agencies wanting to tier to the Draft PEIR are expected to include as conditions of approval. However, as currently drafted, it is not clear that the measures included in the Draft PEIR will be sufficient in reducing impacts to candidate, sensitive, or special-status species to a level that is less than significant. For example, mitigation measure MM-BIO-1(a) states that where avoidance of threatened, endangered, and other special-status species is infeasible, the lead agency will "provide conservation measures to fulfill the requirements of the applicable authorization for incidental take." However, this mitigation measure does not describe a process for how biological resources within a project area will be evaluated. In addition, it does not explicitly state that take authorization will be pursued in the event a species listed as threatened, endangered, or rare pursuant to CESA is detected and determined to be unavoidable. D-1

Specific impact: Without appropriate avoidance and minimization measures for the species mentioned above, potential significant impacts associated with the Project's construction include burrow or den collapse, nest destruction, inadvertent entrapment, reduced reproductive success, reduction in health and vigor of eggs and/or young, and direct mortality of individual special-status wildlife species. Potential impacts to special-status plant species include inability to reproduce and direct mortality.

Evidence impact would be significant: The San Joaquin Valley supports a high number of narrowly distributed endemic species (USFWS 1998). Habitat loss resulting from development is among the primary threats to special-status species in the greater San Joaquin Valley. In fact, less than 5% of the Valley floor remains undeveloped. In the Sierra Nevada, amphibians such as the foothill yellow-legged frog have disappeared from the majority of historically occupied sites with population declines and local disappearances most pronounced in the southern half of the Sierra slope, from approximately Madera County southward (Jennings 1995, Jennings 1996 *in* USDA 2016, Thomson et al. 2016). Land use changes that result in degradation or destruction of riparian habitat; road development and use; urbanization, and water diversion are among proximate factors contributing to species declines (Thomson et al. 2016, USDA 2016). As a result, ground-disturbance resulting from tiered transportation development projects has the potential to impact remaining undeveloped land and/or habitat which supports special-status species, which may result in significant impacts to local populations of these species in Tulare County. D1

Recommended Potentially Feasible Mitigation Measure(s)
To evaluate potential impacts of tiered projects to special-status species, CDFW recommends revising mitigation measure MM-BIO-1(a) to include the following evaluation of individual project sites and including the following measures as conditions of approval in the PEIR.

Recommended Mitigation Measure 1: Habitat Assessment

CDFW recommends that a qualified biologist conduct a habitat assessment, well in advance of implementation of tiered projects, to determine if individual project areas or their immediate vicinity contain habitat suitable to support species listed as threatened, endangered, or rare pursuant to CESA or the Native Plant Protection Act including, but not limited to, those mentioned above.

Recommended Mitigation Measure 2: Species-Specific Surveys

If habitat suitable to support special-status plant or animal species is present, CDFW recommends assessing presence/absence of special-status species by conducting surveys following recommended protocols or protocol-equivalent surveys. Recommended protocols vary by species and/or taxa. More information on survey

and monitoring protocols for sensitive species can be found at CDFW's website (https://www.wildlife.ca.gov/Conservation/Survey-Protocols).

Recommended Mitigation Measure 3: Take Avoidance

Detection of special-status plant or animal species within or in the vicinity of tiered project areas, warrants consultation with CDFW to discuss how to implement ground-disturbing activities and avoid take.

Recommended Mitigation Measure 4: Take Authorization

In the event avoidance is not feasible, consultation with CDFW to acquire an Incidental Take Permit (ITP) prior to ground-disturbing activities, pursuant to Fish and Game Code Section 2081(b), is warranted.

Would the Project have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, regulations, or by CDFW or USFWS?

Section 4.4 Biological Resources, MM-BIO-2(a), page 4.4-22 through 4.4-26

D1

COMMENT 2: Lake and Streambed Alteration

Issue: Tulare County contains numerous freshwater marsh, wetland, vernal pool, and riparian features. Ground disturbing activities associated with tiered projects have the potential to involve temporary and permanent impacts to these features. These features may be subject to CDFW's lake and streambed alteration regulatory authority, pursuant to Fish and Game Code Section 1600 et seq. Although, as currently drafted the Draft PEIR includes mitigation measure MM-BIO-2(a), which requires implementing agencies to comply with CDFW requirements for Lake and Streambed Alteration Agreements, it does not define a process for determining whether or not features are subject to CDFW's lake and streambed alteration regulatory authority, pursuant to Fish and Game Code Section 1600 et seq. It also does not explicitly require Notification to CDFW for impacts to features that fall under this regulatory authority.

Specific impact: Work within freshwater marsh, wetland, vernal pool, and riparian features has the potential to result in substantial diversion or obstruction of natural flows; substantial change or use of material from the bed, bank, or channel (including removal of riparian vegetation); deposition of debris, waste, sediment, toxic runoff or other materials into water causing water pollution and degradation of water quality.

Evidence impact is potentially significant: Freshwater marshes, wetlands, vernal pools, and riparian communities have been severely degraded in the San Joaquin

Valley. For example, less than 10% of historic riparian habitat persists and remaining vernal pool communities have been isolated to the edges of the Valley (USFWS 1998). Tulare County includes features potentially subject to CDFW's lake and streambed alteration regulatory authority. Construction activities within these features has the potential to impact downstream waters and to significantly impact the remaining acreage of freshwater marsh, wetland, vernal pool, and riparian communities.

Recommended Potentially Feasible Mitigation Measure(s)
To evaluate potential impacts of tiered projects to freshwater marsh, wetland, vernal pool, and riparian features, CDFW recommends conducting the following evaluation of individual project sites and including the following measures as conditions of approval in the Draft PEIR.

Recommended Mitigation Measure 5: Habitat Assessment

CDFW recommends that a qualified biologist conduct a habitat assessment in advance of project implementation, to determine if individual project areas or their immediate vicinity support freshwater marsh, wetland, vernal pool, and/or riparian communities potentially subject to CDFW's regulatory authority pursuant to Fish and Game Code Section1600 et seq. D1

Recommended Mitigation Measure 6: Wetland Delineation and Lake and Stream Notification

Where applicable, CDFW recommends a formal wetland delineation be conducted by a qualified biologist to determine the location and extent of wetlands and waterways on parcels slated for development. Please note that, while there is overlap, State and Federal definitions of wetlands, as well as which activities require Notification pursuant to Fish and Game Code Section 1602, differ. Therefore, CDFW further recommends that the delineation identify both State and Federal wetlands on the Project site, as well as which activities may require Notification to comply with Fish and Game Code. Fish and Game Code Section 2785 (g) defines wetlands; further Section 1600 et seq. applies to any area within the bed, channel, or bank of any river, stream, or lake (including riparian vegetation). It is important to note that while accurate delineations by qualified individuals have resulted in more rapid review and response from the U.S. Army Corps of Engineers and CDFW, substandard or inaccurate delineations have resulted in unnecessary time delays for applicants due to insufficient, incomplete, or conflicting data. CDFW advises that site map(s) designating wetlands as well as the location of any activities that may affect a lake or stream be included with any Project site evaluations.

Recommended Mitigation Measure 7: Notification of Lake or Streambed Alteration

In the event that project-related activities have the potential to change the bed, bank, and channel of streams and other waterways subject to CDFW's regulatory authority pursuant to Fish and Game Code Section 1600 et seq., Notification is recommended. Fish and Game Code Section 1602 requires an entity to notify CDFW prior to commencing any activity that may (a) substantially divert or obstruct the natural flow of any river, stream, or lake; (b) substantially change or use any material from the bed, bank, or channel of any river, stream, or lake (including the removal of riparian vegetation); (c) deposit debris, waste or other materials that could pass into any river, stream, or lake. "Any river, stream, or lake" includes those that are ephemeral or intermittent as well as those that are perennial. CDFW is required to comply with CEQA in the issuance of a Lake and Streambed Alteration Agreement. For additional information on notification requirements, please contact our staff in the Lake and Streambed Alteration Program at (559) 243-4593.

II. Editorial Comments and/or Suggestions

D1

Nesting birds: Although the Draft PEIR includes mitigation measures for nesting birds, it is not clear whether these measures will be sufficient in minimizing impacts to a level that is less than significant. For example, Mitigation Measure MM-BIO-4(a) specifies that a preconstruction survey for nesting birds should be conducted "at least two weeks before the start of construction at project sites from February 1 through August 31." In addition, this mitigation measure requires a general 250-feet buffer around occupied nest during the breeding season.

To evaluate project-related impacts on nesting birds, CDFW recommends that a qualified wildlife biologist conduct pre-activity surveys for active nests no more than 10 days prior to the start of ground disturbance to maximize the probability that nests that could potentially be impacted are detected. CDFW also recommends that surveys cover a sufficient area around the work site to identify nests and determine their status. A sufficient area means any area potentially affected by a project. In addition to direct impacts (i.e. nest destruction), noise, vibration, and movement of workers or equipment could also affect nests. Prior to initiation of construction activities, CDFW recommends a qualified biologist conduct a survey to establish a behavioral baseline of all identified nests. Once construction begins, CDFW recommends a qualified biologist continuously monitor nests to detect behavioral changes resulting from the project. If behavioral changes occur, CDFW recommends the work causing that change cease and consult with CDFW for additional avoidance and minimization measures.

If continuous monitoring of identified nests by a qualified wildlife biologist is not feasible, CDFW recommends a minimum no-disturbance buffer of 250 feet around active nests of non-listed bird species and a 500-foot no-disturbance buffer around active nests of non-

listed raptors. These buffers are advised to remain in place until the breeding season has ended or until a qualified biologist has determined that the birds have fledged and are no longer reliant upon the nest or parental care for survival. Variance from these no disturbance buffers is possible when there is compelling biological or ecological reason to do so, such as when the construction area would be concealed from a nest site by topography. CDFW recommends that a qualified wildlife biologist advise and support any variance from these buffers and notify CDFW in advance of implementing a variance.

Subsequent CEQA Documents: If the results of site-specific environmental review indicate that significant environmental impacts will occur as an outcome of implementation of tiered projects and that these impacts cannot be mitigated to less than significant levels, a Mitigated Negative Declaration (MND) would not be appropriate. Furthermore, when an MND is prepared, mitigation measures must be specific and clearly defined and cannot be deferred to a future time. The specifics of mitigation measures may be deferred, provided the lead agency commits to mitigation and establishes performance standards for implementation, when an Environmental Impact Report (EIR) is prepared. Regardless of whether an MND or EIR is prepared, CDFW recommends that mitigation measures be fully addressed and made enforceable conditions of project approval in the CEQA document prepared for the project. D-1

Federally Listed Species: CDFW also recommends consulting with the USFWS on potential impacts to federally listed species. Take under the federal Endangered Species Act (ESA) is more broadly defined than CESA; take under federal ESA also includes significant habitat modification or degradation that could result in death or injury to a listed species by interfering with essential behavioral patterns such as breeding, foraging, or nesting. Consultation with the USFWS in order to comply with federal ESA is advised well in advance of any ground-disturbing activities.

ENVIRONMENTAL DATA

CEQA requires that information developed in environmental impact reports and negative declarations be incorporated into a database, which may be used to make subsequent or supplemental environmental determinations (Pub. Resources Code, § 21003, subd. (e)). Accordingly, please report any special status species and natural communities detected during Project surveys to the California Natural Diversity Database (CNDDB). The CNDDB field survey form can be found at the following link: http://www.dfg.ca.gov/biogeodata/cnddb/pdfs/CNDDB_FieldSurveyForm.pdf. The completed form can be mailed electronically to CNDDB at the following email address: CNDDB@wildlife.ca.gov. The types of information reported to CNDDB can be found at the following link: http://www.dfg.ca.gov/biogeodata/cnddb/plants_and_animals.asp.

FILING FEES

If it is determined that tiered projects have the potential to impact biological resources, an assessment of filing fees will be necessary. Fees are payable upon filing of the Notice of Determination by the Lead Agency and serve to help defray the cost of environmental review by CDFW. Payment of the fee is required in order for the underlying project approval to be operative, vested, and final (Cal. Code Regs, tit. 14, § 753.5; Fish and Game Code, § 711.4; Pub. Resources Code, § 21089).

CONCLUSION

CDFW appreciates the opportunity to comment on the Project to assist TCAG in identifying and mitigating project-level impacts on biological resources. More information on survey and monitoring protocols for sensitive species can be found at CDFW's website (https://www.wildlife.ca.gov/Conservation/Survey-Protocols). Should you have questions regarding this letter or need further coordination please contact Renée Robison, Environmental Scientist, at the address provided on this letterhead, by telephone at (559) 243-4014 extension 274, or by electronic email at Renee.Robison@wildlife.ca.gov.

Sincerely,

Julie A. Vance
Regional Manager

cc: Timothy Ludwick
United States Fish and Wildlife Service
2800 Cottage Way, Suite W-2605
Sacramento, California 95825

Office of Planning and Research
Post Office Box 3044
Sacramento, California 95814

REFERENCES

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Letter D: CA Department of Fish and Wildlife

Julie A Vance, Regional Manager
CA Department of Fish and Wildlife
Central Region
1234 East Shaw Avenue
Fresno, CA 93701
July 3, 2018

Response D-1

Please note that this comment was submitted after the close of the Draft PEIR public review period and responses are therefore not required. (*State CEQA Guidelines* Section 15088(a).) Nevertheless, TCAG provides the following responses.

The comment indicates that mitigation measures included in the PEIR for biological resources may not sufficiently reduce impacts to a less than significant level. Section 4.4 Biological Resources of the Draft EIR indicates that impacts to biological resources including special status species, sensitive species and rare and endangered species, as well as riparian habitat and nesting birds would be significant and unavoidable. CDFW recommends additional language to the existing **Mitigation Measures MM-BIO-1(a), MM-BIO-2(a)** and **MM-BIO-4(a)** from the 2018 RTP/SCS PEIR. These edits are included in **Chapter 3.0, Corrections and Additions.**

CDFW also includes comments on subsequent CEQA documents, environmental data, and filing fees that are restatements of existing CEQA requirements for project-specific CEQA documents. As such, no response is warranted to these comments.

CDFW also recommends consulting with the USFWS on potential impacts to federally listed species. The third bullet of **MM BIO-1(a)** has been revised to add USFWS consultation. See in **Chapter 3.0, Corrections and Additions.**

Letter E

San Joaquin Valley
AIR POLLUTION CONTROL DISTRICT

HEALTHY AIR LIVING™

July 25, 2018

Gabriel Gutierrez, Senior Regional Planner
Tulare County Association of Governments
210 N. Church Street, Ste. B
Visalia, CA 93291

Project: Draft Program Environmental Impact Report for the 2018 Regional Transportation Plan/Sustainable Communities Strategy (2018 RTP/SCS)

District CEQA Reference No: 20180515

Dear Mr. Gutierrez:

The San Joaquin Valley Unified Air Pollution Control District (District) has reviewed the Draft Program Environmental Impact Report (DPEIR) for the project referenced above. The 2018 RTP/SCS is a long-range comprehensive plan for the region's multi-modal transportation system including projects, policies, and strategies to create a blueprint for the region's growth through 2042 (Plan). The geographical extent of the proposed 2018 RTP/SCS includes the area within the limits of Tulare County, CA. The District offers the following comments:

1. Future Individual Development Projects

New future development may require further environmental review and mitigation. The District makes the following recommendations regarding future development:

A. The DPEIR identifies significant and unavoidable air quality impacts for the Plan, and future individual development projects within the scope of the Plan would also have a significant and unavoidable impact on air quality. The District recommends the DPEIR be revised to include a discussion of the feasibility of implementing a mitigation measure comparable to an emission reduction agreement to mitigate impacts from future individual projects within the Plan.

E-1

Samir Sheikh
Executive Director/Air Pollution Control Officer

Northern Region
4800 Enterprise Way
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1990 E. Gettysburg Avenue
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Tel: (559) 230-6000 FAX: (559) 230-6061

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34946 Flyover Court
Bakersfield, CA 93308-9725
Tel: 661-392-5500 FAX: 661-392-5585

www.valleyair.org www.healthyairliving.com

For example, an emission reduction agreement can be an agreement in which the project proponent provides pound-for-pound mitigation of emissions increases through a process that develops, funds, and implements emission reduction projects, with the District serving a role of administrator of the emissions reduction projects and verifier of the successful mitigation effort. Thus, project specific impacts on air quality can be mitigated. After the project is mitigated, the District can certify to the lead agency that the mitigation is completed, providing the lead agency with an enforceable mitigation measure demonstrating that project specific emissions have been mitigated to less than significant. E-1

Incidentally, an emission reduction agreement can be established at the Program level, in which case an agreement would be entered into with the District to address the mitigation of emissions increases for individual projects.

B. Future individual development projects may be subject to District Rule 9510, Indirect Source Review (ISR). District Rule 9510 is intended to mitigate a project's impact on air quality through project design elements or by payment of applicable off-site fees. The Plan description does not provide enough information to determine if future individual development projects will be subject to District Rule 9510. Therefore, the Plan should include a requirement for project proponents to assess the applicability of District Rule 9510 to their individual development project. District staff is available to provide assistance with determining if future individual development projects will be subject to Rule 9510, and can be reached at (559) 230-6000 or email ISR@valleyair.org.

When a project is subject to Rule 9510, an AIA application is required to be submitted prior to the project seeking final discretionary approval. The District recommends that demonstration of compliance with District Rule 9510, before issuance of the first building permit, be made a condition of project approval. Information about how to comply with District Rule 9510 can be found online at: http://www.valleyair.org/ISR/ISRHome.htm. The AIA application form can be found online at: http://www.valleyair.org/ISR/ISRFormsAndApplications.htm. E-2

C. Health Risk Screening/Assessment – A Health Risk Screening/Assessment identifies potential Toxic Air Contaminants (TAC's) impact on surrounding sensitive receptors such as hospitals, daycare centers, schools, work-sites, and residences. TAC's are air pollutants identified by the Office of Environmental Health Hazard Assessment/California Air Resources Board (OEHHA/CARB) (https://www.arb.ca.gov/toxics/healthval/healthval.htm) that pose a present or potential hazard to human health. A common source of TACs can be attributed to diesel exhaust emitted from both mobile and stationary sources. Industry specific TACs generated must also be identified and quantified.

The District recommends that future development projects be evaluated for potential health impacts to surrounding receptors (on-site and off-site) resulting from operational and multi-year construction TAC emissions.

i) The District recommends conducting a screening analysis that includes all sources of emissions. A screening analysis is used to identify projects which may have a significant health impact. A prioritization, using CAPCOA's updated methodology, is the recommended screening method.
A prioritization score of 10 or greater is considered to be significant and a refined Health Risk Assessment (HRA) should be performed. The prioritization calculator can be found at: http:www.valleyair.org/busind/pto/emission_factors/Criteria/Toxics/Utilities/PRIORITIZATION%20RMR%202016.XLS.

ii) The District recommends a refined HRA for future projects that result in a prioritization score of 10 or greater. It is recommended that the project proponent contact the District to review the proposed modeling protocol. Future projects would be considered to have a significant health risk if the HRA demonstrates that the project related health impacts would exceed the Districts significance threshold of 20 in a million for carcinogenic risk and 1.0 for the Acute and Chronic Hazard Indices.

More information on toxic emission factors, prioritizations and HRAs can be obtained by:

- E-Mailing inquiries to: hramodeler@valleyair.org; or
- The District can be contacted at (559) 230-6000 for assistance; or
- Visiting the Districts website (Modeling Guidance) at http://www.valleyair.org/busind/pto/Tox_Resources/AirQualityMonitoring.htm

E-3

D. Ambient Air Quality Analysis – An ambient air quality analysis (AAQA) uses air dispersion modeling to determine if emissions increases from a project will cause or contribute to a violation of the ambient air quality standards. The District recommends that an AAQA be performed for future projects if emissions exceed 100 pounds per day of any pollutant.

If an AAQA is performed, the analysis should include emissions from both project specific permitted and non-permitted equipment and activities. The District recommends consultation with District staff to determine the appropriate model and input data to use in the analysis. Specific information for assessing significance, including screening tools and modeling guidance is available online at the District's website www.valleyair.org/ceqa.

E. Future individual development projects within the Plan may also be subject to other District rules and regulations:

i) Certain equipment operating at the individual development sites may require District permits. Prior to the start of construction, the project proponent should contact the District's Small Business Assistance Office at (559) 230-5888 to determine if an Authority to Construct (ATC) is required.

ii) Individual development projects may also be subject to the following District rules: Regulation VIII, (Fugitive PM10 Prohibitions), Rule 4102 (Nuisance), Rule 4601 (Architectural Coatings), and Rule 4641 (Cutback, Slow Cure, and Emulsified Asphalt, Paving and Maintenance Operations). In the event an existing building will be renovated, partially demolished or removed, the project may be subject to District Rule 4002 (National Emission Standards for Hazardous Air Pollutants).

iii) The above list of rules is neither exhaustive nor exclusive. To identify other District rules or regulations that apply to future individual development projects within the Plan or to obtain information about District permit requirements, the applicant is strongly encouraged to contact the District's Small Business Assistance Office at (559) 230-5888. Current District rules can be found online at: www.valleyair.org/rules/1ruleslist.htm. E-3

F. Referral documents (e.g. project proposals and related documents submitted to the District for review) for new development projects should include a project summary detailing, at a minimum, the land use designation, project size, and proximity to sensitive receptors and existing emission sources.

2. Short-Term Emissions Methodology

In reference to the inability to quantify Plan construction emissions at this time, Section 4.3.3.2 of the DPEIR states:

"Despite this variability in emissions, compliance with Regulation VIII and implementation of appropriate mitigation measures to control respirable PM10 emissions are considered by the SJVAPCD to be sufficient to render a project's construction-related PM10 impacts less-than-significant." E-4

On the contrary, while compliance with Regulation VIII may help reduce a project's impacts on air quality, it does not necessarily reduce impacts to a less-than-significant level. The suggested changes are indicated as such:

"Despite this variability in emissions, compliance with Regulation VIII and implementation of appropriate mitigation measures to control respirable PM10 emissions are considered by the SJVAPCD to ~~be sufficient to render~~ reduce a project's construction-related PM10 impacts~~, less-than-significant~~."

Furthermore, feasible mitigation of construction exhaust emissions includes use of construction equipment powered by engines which meet current Environmental Protection Agency (EPA) emissions standards. The District recommends incorporating, as a condition of future project approvals, a requirement that off-road construction equipment used on site achieve fleet average emissions equal to or cleaner than the latest EPA diesel engine emissions standards for the applicable horsepower range (e.g. EPA's Tier Certification Level) at the time of project construction. Mitigation measures reducing construction exhaust emissions must be fully enforceable through permit conditions, agreements, or other legally binding instruments (CEQA Guidelines §15126.4, subd.(a)(2)). E-4

If you have any questions or require further information, please call Stephanie Pellegrini at (559) 230-5820.

Sincerely,

Arnaud Marjollet
Director of Permit Services

Brian Clements
Program Manager

AM: sp

E. San Joaquin Valley Air Pollution Control District

Arnaud Marjollet
Director of Permit Services
Brian Clements
Program Manager
San Joaquin Valley Air Pollution Control District
Central Region
1990 E. Gettysburg Avenue
Fresno, CA 93726

Please note that this comment was submitted after the close of the Draft PEIR public review period and responses are therefore not required. (*State CEQA Guidelines* Section 15088(a).) Nevertheless, TCAG provides the following responses.

Response E-1

The comment suggests an additional mitigation measure, emission reduction agreements, for air quality construction impacts. **Mitigation Measure MM-AIR-1(a)** on page 4.3-40 and in the PEIR summary has been revised to reflect this comment. See **Chapter 3.0, Corrections and Additions**. In addition, the comment suggests that an emission reduction agreement can be established at the program level; however, construction emissions from individual transportation and land use projects have not been quantified, and TCAG does not have the authority to require emissions reduction agreements for individual transportation and land use projects.

Response E-2

The comment relates to District Rule 9510 Indirect Source Review (ISR). The bottom of page 4.3-29 before the heading "Local" has been revised to include the reference to District Rule 9510.

Mitigation Measure MM-AIR-1(a) on page 4.3-4.3-40 and in the PEIR summary has been revised to reflect this comment. See **Chapter 3.0, Corrections and Additions**.

Response E-3

The comment includes information regarding the SJVAPCD's recommendations on TAC analysis. This comment largely repeats and expands upon the SJVAPCD's existing "Guidance for Assessing and Mitigating Air Quality Impacts" document. This information has been incorporated into the PEIR on page 4.3-28 under the heading "Guidance for Assessing and Mitigating Air Quality Impacts." **See Chapter 3.0, Corrections and Additions.**

Response E-4

The comment relates to the methodology discussion on page 4.3-35 of the PEIR. The discussion has been revised to reflect this comment. See **Chapter 3.0, Corrections and Additions.**

The comment also recommends a revision to **Mitigation Measure MM-AIR-1(a)**, which has been made. See **Chapter 3.0, Corrections and Additions.**

Letter F

STATE OF CALIFORNIA

GOVERNOR'S OFFICE *of* PLANNING AND RESEARCH

EDMUND G. BROWN JR.
GOVERNOR

KEN ALEX
DIRECTOR

TCAG/LAFCO
210 N. Church Street, Ste. B
Visalia, CA 93291

JUL 03 2018

MAIL RECEIVED

June 26, 2018

Gabriel Gutierrez
Tulare County Association of Governments
210 N. Church St, Suite B
Visalia, CA 93291

Subject: 2018 Regional Transportation Plan/Sustainable Communities Strategy
SCH#: 2017041018

Dear Gabriel Gutierrez:

The State Clearinghouse submitted the above named Draft EIR to selected state agencies for review. The review period closed on June 25, 2018, and no state agencies submitted comments by that date. This letter acknowledges that you have complied with the State Clearinghouse review requirements for draft environmental documents, pursuant to the California Environmental Quality Act. F-1

Please call the State Clearinghouse at (916) 445-0613 if you have any questions regarding the environmental review process. If you have a question about the above-named project, please refer to the ten-digit State Clearinghouse number when contacting this office.

Sincerely,

Scott Morgan
Director, State Clearinghouse

Document Details Report
State Clearinghouse Data Base

SCH# 2017041018
Project Title 2018 Regional Transportation Plan/Sustainable Communities Strategy
Lead Agency Tulare County Association of Governments

Type EIR Draft EIR

Description The 2018 RTP/SCS is a long-range regional transportation plan that provides a blueprint to help achieve a coordinated regional transportation system by creating a vision for transportation investment throughout the region and identifying regional transportation and land use strategies to address mobility needs. The 2018 RTP/SCS includes a policy element that is shaped by goals, policies and performance indicators, a description of planning assumptions for regional growth and future needs for travel and goods movement, a sustainable communities strategy that identifies planning strategies and illustrative development patterns that would reduce GHGe and a plan of action for the region to pursue to meet identified transportation needs.

Lead Agency Contact

Name Gabriel Gutierrez
Agency Tulare County Association of Governments
Phone 559-623-0450 **Fax**
email
Address 210 N. Church St, Suite B
City Visalia **State** CA **Zip** 93291

Project Location

County Tulare
City Visalia, Porterville, Tulare
Region
Lat / Long
Cross Streets
Parcel No.
Township **Range** **Section** **Base**

Proximity to:

Highways 99, 198, 65, 43
Airports
Railways
Waterways Kern River
Schools
Land Use multiple

Project Issues Agricultural Land; Air Quality; Archaeologic-Historic; Biological Resources; Cumulative Effects; Drainage/Absorption; Flood Plain/Flooding; Forest Land/Fire Hazard; Geologic/Seismic; Growth Inducing; Landuse; Minerals; Noise; Population/Housing Balance; Public Services; Recreation/Parks; Schools/Universities; Sewer Capacity; Soil Erosion/Compaction/Grading; Solid Waste; Toxic/Hazardous; Traffic/Circulation; Vegetation; Water Quality; Water Supply; Wetland/Riparian; Aesthetic/Visual

Reviewing Agencies Resources Agency; Department of Fish and Wildlife, Region 4; Department of Parks and Recreation; Department of Water Resources; California Highway Patrol; Caltrans, District 6; State Water Resources Control Board, Division of Water Quality; Air Resources Board, Transportation Projects; Regional Water Quality Control Bd., Region 5 (Sacramento); Native American Heritage Commission; State Lands Commission

Date Received 05/11/2018 **Start of Review** 05/11/2018 **End of Review** 06/25/2018

Note: Blanks in data fields result from insufficient information provided by lead agency

F. Governor's Office of Planning and Research

Scott Morgan
Director, State Clearinghouse
1400 10th Street
Sacramento, CA 95812

Response F-1

The comment confirms State Clearinghouse received and distributed the PEIR. No response is necessary.

Letter G

STATE OF CALIFORNIA

GOVERNOR'S OFFICE *of* PLANNING AND RESEARCH

EDMUND G. BROWN JR.
GOVERNOR

KEN ALEX
DIRECTOR

July 12, 2018

TCAG/LAFCO
210 N. Church Street, Ste. B
Visalia, CA 93291
JUL 16 2018
MAIL RECEIVED

Gabriel Gutierrez
Tulare County Association of Governments
210 N. Church St, Suite B
Visalia, CA 93291

Subject: 2018 Regional Transportation Plan/Sustainable Communities Strategy
SCH#: 2017041018

Dear Gabriel Gutierrez:

The enclosed comment (s) on your Draft EIR was (were) received by the State Clearinghouse after the end of the state review period, which closed on June 25, 2018. We are forwarding these comments to you because they provide information or raise issues that should be addressed in your final environmental document. G-1

The California Environmental Quality Act does not require Lead Agencies to respond to late comments. However, we encourage you to incorporate these additional comments into your final environmental document and to consider them prior to taking final action on the proposed project.

Please contact the State Clearinghouse at (916) 445-0613 if you have any questions concerning the environmental review process. If you have a question regarding the above-named project, please refer to the ten-digit State Clearinghouse number (2017041018) when contacting this office.

Sincerely,

Scott Morgan
Director, State Clearinghouse

Enclosures
cc: Resources Agency

State of California – Natural Resources Agency
DEPARTMENT OF FISH AND WILDLIFE
Central Region
1234 East Shaw Avenue
Fresno, California 93710
www.wildlife.ca.gov

EDMUND G. BROWN JR., Governor
CHARLTON H. BONHAM, Director

late 7/25/18

July 3, 2018

Gabriel Gutierrez
Tulare County Association of Governments
210 North Church Street, Suite B
Visalia, California 93291
ggutierrez@tularecog.org

Subject: Tulare County Association of Governments (TCAG) 2018 Regional Transportation Plan/Sustainable Communities Strategy (PROJECT) Draft Programmatic Environmental Impact Report (PEIR) SCH No. 2017041018

Dear Mr. Gutierrez:

The California Department of Fish and Wildlife (CDFW) received a Notice of Availability of a Draft PEIR from the TCAG for the Project pursuant to the California Environmental Quality Act (CEQA) and CEQA Guidelines.[1]

Thank you for the opportunity to provide comments and recommendations regarding those activities involved in the Project that may affect California fish and wildlife. Likewise, we appreciate the opportunity to provide comments regarding those aspects of the Project that CDFW, by law, may be required to carry out or approve through the exercise of its own regulatory authority under the Fish and Game Code. Although the comment period for your request has passed, CDFW would appreciate if you would still consider the following comments.

CDFW ROLE

CDFW is California's **Trustee Agency** for fish and wildlife resources, and holds those resources in trust by statute for all the people of the State (Fish and Game Code, §§ 711.7, subd. (a) & 1802; Pub. Resources Code, § 21070; CEQA Guidelines § 15386, subd. (a)). CDFW, in its trustee capacity, has jurisdiction over the conservation, protection, and management of fish, wildlife, native plants, and habitat necessary for biologically sustainable populations of those species (*Id.*, § 1802). Similarly, for purposes of CEQA, CDFW is charged by law to provide, as available, biological expertise during public agency environmental review efforts, focusing specifically on projects and related activities that have the potential to adversely affect fish and wildlife resources.

[1] CEQA is codified in the California Public Resources Code in section 21000 et seq. The "CEQA Guidelines" are found in Title 14 of the California Code of Regulations, commencing with section 15000.

CDFW is also submitting comments as a **Responsible Agency** under CEQA (Pub. Resources Code, § 21069; CEQA Guidelines, § 15381). CDFW expects that it may need to exercise regulatory authority as provided by the Fish and Game Code. As proposed, for example, the Project may be subject to CDFW's lake and streambed alteration regulatory authority (Fish and Game Code, § 1600 et seq.). Likewise, to the extent implementation of the Project as proposed may result in "take" as defined by State law of any species protected under the California Endangered Species Act (CESA) (Fish and Game Code, § 2050 et seq.), related authorization as provided by the Fish and Game Code will be required.

Fully Protected Species: CDFW has jurisdiction over fully protected species of birds, mammals, amphibians, reptiles, and fish, pursuant to Fish and Game Code sections 3511, 4700, 5050, and 5515. CDFW prohibits and cannot authorize take of any fully protected species.

Water Pollution: Pursuant to Fish and Game Code Section 5650, it is unlawful to deposit in, permit to pass into, or place where it can pass into "Waters of the State" any substance or material deleterious to fish, plant life, or bird life, including non-native species. It is possible that without mitigation measures activities occurring from tiered Projects could result in pollution of Waters of the State from storm water runoff or construction-related erosion. Potential impacts to the wildlife resources that utilize these watercourses include the following: increased sediment input from road or structure runoff; toxic runoff associated with development activities and implementation; and/or impairment of wildlife movement along riparian corridors. The Regional Water Quality Control Board and U.S. Army Corps of Engineers also has jurisdiction regarding discharge and pollution to Waters of the State.

Nesting Birds: CDFW has jurisdiction over actions with potential to result in the disturbance or destruction of active nest sites or the unauthorized take of birds. Fish and Game Code sections that protect birds, their eggs and nests include, 3503 (regarding unlawful take, possession or needless destruction of the nest or eggs of any bird), 3503.5 (regarding the take, possession or destruction of any birds-of-prey or their nests or eggs), and 3513 (regarding unlawful take of any migratory nongame bird).

PROJECT DESCRIPTION SUMMARY

Proponent: Tulare County Association of Governments

Objective: The TCAG serves as a Metropolitan Planning Organization and is preparing a Regional Transportation Plan/Sustainable Communities Strategy (RTP/SCS) for its metropolitan planning area. The 2018 RTP/SCS addresses future transportation needs in Tulare County. A RTP/SCS is prepared every four years, and the 2018 plan serves as an update to the 2014 RTP/SCS. The RTP/SCS is a long-range plan that serves to: (1) identify regional transportation planning policies and projects; (2) describe planning

assumptions and growth trends for regional growth and future needs for travel and goods movement; (3) identify planning and land use strategies; (4) discuss financial constraints; and (5) provide goals, policies, and performance indicators to increase mobility and meet greenhouse gas reduction targets. The purpose of the Draft PEIR is to provide decision-makers, responsible agencies, and the public with an analysis of the potential environmental consequences of implementation of the regional transportation system from a regional perspective and in a programmatic manner.

Location: Transportation projects in Tulare County.

Timeframe: The RTP/SCS has a horizon year of 2042.

COMMENTS AND RECOMMENDATIONS

CDFW offers the comments and recommendations below to assist the TCAG in adequately identifying and/or mitigating the Project's significant, or potentially significant, direct and indirect impacts on fish and wildlife (biological) resources.

I. Environmental Setting and Related Impact

CDFW understands that the TCAG seeks to develop an informational document to inform decision-makers, responsible agencies, and the public of the environmental consequences of approving transportation projects within Tulare County. The PEIR provides a framework of mitigation measures for subsequent, site-specific environmental review documents. The Draft PEIR contains numerous mitigation measures related to biological resources; however it isn't clear if these measures will be sufficient in minimizing impacts to a level that is less than significant. Given the county-wide implications of this RTP/SCS, CDFW is concerned that subsequent projects could impact special-status species known to occur in Tulare County including, but not limited to, the State and federally threatened California tiger salamander (*Ambystoma californiense*), the State and federally endangered and State fully protected California condor (*Gymnogyps californianus*), the State endangered and fully protected bald eagle (*Haliaeetus leucocephalus*), the State fully protected golden eagle (*Aquila chrysaetos*), the State endangered great gray owl (*Strix nebulosa*), the State threatened Swainson's hawk (*Buteo swainsoni*), the State candidate endangered tricolored blackbird (*Agelaius tricolor*), the State and federally endangered southwestern willow flycatcher (*Empidonax traillii extimus*), the State candidate threatened fisher (*Pekania pennanti*), the State threatened San Joaquin antelope squirrel (*Ammospermophilus nelsoni*), the State threatened and federally endangered San Joaquin kit fox (*Vulpes macrotis mutica*), the State and federally endangered Tipton kangaroo rat (*Dipodomys nitratoides nitratoides*), the State candidate threatened foothill yellow-legged frog (*Rana boylii*), the State and federally endangered southern mountain yellow-legged frog (*Rana muscosa*), and the State fully-protected as well as State and federally endangered blunt-nosed leopard lizard (*Gambelia sila*). Tulare County also supports a number of State species of special

concern including, but not limited to, black swift (*Cypseloides niger*), burrowing owl (*Athene cunicularia*), California spotted owl (*Strix occidentalis occidentalis*), northern goshawk (*Accipiter gentilis*), loggerhead shrike (*Lanius ludovicianus*), American badger (*Taxidea taxus*), western spadefoot (*Spea hammondi*), San Joaquin coachwhip (*Masticophis flagellum ruddocki*), coast horned lizard (*Phrynosoma blainvillii*), pallid bat (*Antrozous pallidus*), Townsend's big-eared bat (*Corynorhinus townsendii*), spotted bat (*Euderma maculatum*), and western red bat (*Lasiurus blossevilii*). In addition, numerous special-status plants occur in Tulare County including, but not limited to, the State endangered and federally threatened Springville clarkia (*Clarkia springvillensis*), the State endangered and federally threatened San Joaquin adobe sunburst (*Pseudobahia perisonii*), and the State and federally endangered California jewelflower (*Caulanthus californicus*). In addition, wetland, riparian, and water features that may be subject to CDFW's lake and streambed alteration regulatory authority (Fish and Game Code, § 1600 et seq.) exist within Tulare County. As such, CDFW recommends that individual tiered Projects be reviewed for impacts to biological resources on a case-by-case basis and that the following mitigation measures be made conditions of their approval.

Would the Project have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special status species in local or regional plans, policies, or regulations, or by CDFW or United States Fish and Wildlife Service (USFWS)?

Section 4.4 Biological Resources, MM-BIO-1(a), page 4.4-21 through 4.4-22

COMMENT 1: Special-status species

Issue: Tulare County supports a variety of habitat and community types, upon which numerous special-status, threatened, and endangered species depend (CDFW 2018). Unauthorized take of species listed as threatened, endangered, or rare pursuant to CESA or the Native Plant Protection Act is a violation of Fish and Game Code. The Draft PEIR includes mitigation measures that lead agencies wanting to tier to the Draft PEIR are expected to include as conditions of approval. However, as currently drafted, it is not clear that the measures included in the Draft PEIR will be sufficient in reducing impacts to candidate, sensitive, or special-status species to a level that is less than significant. For example, mitigation measure MM-BIO-1(a) states that where avoidance of threatened, endangered, and other special-status species is infeasible, the lead agency will "provide conservation measures to fulfill the requirements of the applicable authorization for incidental take." However, this mitigation measure does not describe a process for how biological resources within a project area will be evaluated. In addition, it does not explicitly state that take authorization will be pursued in the event a species listed as threatened, endangered, or rare pursuant to CESA is detected and determined to be unavoidable.

Specific impact: Without appropriate avoidance and minimization measures for the species mentioned above, potential significant impacts associated with the Project's construction include burrow or den collapse, nest destruction, inadvertent entrapment, reduced reproductive success, reduction in health and vigor of eggs and/or young, and direct mortality of individual special-status wildlife species. Potential impacts to special-status plant species include inability to reproduce and direct mortality.

Evidence impact would be significant: The San Joaquin Valley supports a high number of narrowly distributed endemic species (USFWS 1998). Habitat loss resulting from development is among the primary threats to special-status species in the greater San Joaquin Valley. In fact, less than 5% of the Valley floor remains undeveloped. In the Sierra Nevada, amphibians such as the foothill yellow-legged frog have disappeared from the majority of historically occupied sites with population declines and local disappearances most pronounced in the southern half of the Sierra slope, from approximately Madera County southward (Jennings 1995, Jennings 1996 *in* USDA 2016, Thomson et al. 2016). Land use changes that result in degradation or destruction of riparian habitat; road development and use; urbanization, and water diversion are among proximate factors contributing to species declines (Thomson et al. 2016, USDA 2016). As a result, ground-disturbance resulting from tiered transportation development projects has the potential to impact remaining undeveloped land and/or habitat which supports special-status species, which may result in significant impacts to local populations of these species in Tulare County.

Recommended Potentially Feasible Mitigation Measure(s)
To evaluate potential impacts of tiered projects to special-status species, CDFW recommends revising mitigation measure MM-BIO-1(a) to include the following evaluation of individual project sites and including the following measures as conditions of approval in the PEIR.

Recommended Mitigation Measure 1: Habitat Assessment

CDFW recommends that a qualified biologist conduct a habitat assessment, well in advance of implementation of tiered projects, to determine if individual project areas or their immediate vicinity contain habitat suitable to support species listed as threatened, endangered, or rare pursuant to CESA or the Native Plant Protection Act including, but not limited to, those mentioned above.

Recommended Mitigation Measure 2: Species-Specific Surveys

If habitat suitable to support special-status plant or animal species is present, CDFW recommends assessing presence/absence of special-status species by conducting surveys following recommended protocols or protocol-equivalent surveys. Recommended protocols vary by species and/or taxa. More information on survey

and monitoring protocols for sensitive species can be found at CDFW's website (https://www.wildlife.ca.gov/Conservation/Survey-Protocols).

Recommended Mitigation Measure 3: Take Avoidance

Detection of special-status plant or animal species within or in the vicinity of tiered project areas, warrants consultation with CDFW to discuss how to implement ground-disturbing activities and avoid take.

Recommended Mitigation Measure 4: Take Authorization

In the event avoidance is not feasible, consultation with CDFW to acquire an Incidental Take Permit (ITP) prior to ground-disturbing activities, pursuant to Fish and Game Code Section 2081(b), is warranted.

Would the Project have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, regulations, or by CDFW or USFWS?

Section 4.4 Biological Resources, MM-BIO-2(a), page 4.4-22 through 4.4-26

COMMENT 2: Lake and Streambed Alteration

Issue: Tulare County contains numerous freshwater marsh, wetland, vernal pool, and riparian features. Ground disturbing activities associated with tiered projects have the potential to involve temporary and permanent impacts to these features. These features may be subject to CDFW's lake and streambed alteration regulatory authority, pursuant to Fish and Game Code Section 1600 et seq. Although, as currently drafted the Draft PEIR includes mitigation measure MM-BIO-2(a), which requires implementing agencies to comply with CDFW requirements for Lake and Streambed Alteration Agreements, it does not define a process for determining whether or not features are subject to CDFW's lake and streambed alteration regulatory authority, pursuant to Fish and Game Code Section 1600 et seq. It also does not explicitly require Notification to CDFW for impacts to features that fall under this regulatory authority.

Specific impact: Work within freshwater marsh, wetland, vernal pool, and riparian features has the potential to result in substantial diversion or obstruction of natural flows; substantial change or use of material from the bed, bank, or channel (including removal of riparian vegetation); deposition of debris, waste, sediment, toxic runoff or other materials into water causing water pollution and degradation of water quality.

Evidence impact is potentially significant: Freshwater marshes, wetlands, vernal pools, and riparian communities have been severely degraded in the San Joaquin

Valley. For example, less than 10% of historic riparian habitat persists and remaining vernal pool communities have been isolated to the edges of the Valley (USFWS 1998). Tulare County includes features potentially subject to CDFW's lake and streambed alteration regulatory authority. Construction activities within these features has the potential to impact downstream waters and to significantly impact the remaining acreage of freshwater marsh, wetland, vernal pool, and riparian communities.

Recommended Potentially Feasible Mitigation Measure(s)
To evaluate potential impacts of tiered projects to freshwater marsh, wetland, vernal pool, and riparian features, CDFW recommends conducting the following evaluation of individual project sites and including the following measures as conditions of approval in the Draft PEIR.

Recommended Mitigation Measure 5: Habitat Assessment

CDFW recommends that a qualified biologist conduct a habitat assessment in advance of project implementation, to determine if individual project areas or their immediate vicinity support freshwater marsh, wetland, vernal pool, and/or riparian communities potentially subject to CDFW's regulatory authority pursuant to Fish and Game Code Section1600 et seq.

Recommended Mitigation Measure 6: Wetland Delineation and Lake and Stream Notification

Where applicable, CDFW recommends a formal wetland delineation be conducted by a qualified biologist to determine the location and extent of wetlands and waterways on parcels slated for development. Please note that, while there is overlap, State and Federal definitions of wetlands, as well as which activities require Notification pursuant to Fish and Game Code Section 1602, differ. Therefore, CDFW further recommends that the delineation identify both State and Federal wetlands on the Project site, as well as which activities may require Notification to comply with Fish and Game Code. Fish and Game Code Section 2785 (g) defines wetlands; further Section 1600 et seq. applies to any area within the bed, channel, or bank of any river, stream, or lake (including riparian vegetation). It is important to note that while accurate delineations by qualified individuals have resulted in more rapid review and response from the U.S. Army Corps of Engineers and CDFW, substandard or inaccurate delineations have resulted in unnecessary time delays for applicants due to insufficient, incomplete, or conflicting data. CDFW advises that site map(s) designating wetlands as well as the location of any activities that may affect a lake or stream be included with any Project site evaluations.

Recommended Mitigation Measure 7: Notification of Lake or Streambed Alteration

In the event that project-related activities have the potential to change the bed, bank, and channel of streams and other waterways subject to CDFW's regulatory authority pursuant to Fish and Game Code Section 1600 et seq., Notification is recommended. Fish and Game Code Section 1602 requires an entity to notify CDFW prior to commencing any activity that may (a) substantially divert or obstruct the natural flow of any river, stream, or lake; (b) substantially change or use any material from the bed, bank, or channel of any river, stream, or lake (including the removal of riparian vegetation); (c) deposit debris, waste or other materials that could pass into any river, stream, or lake. "Any river, stream, or lake" includes those that are ephemeral or intermittent as well as those that are perennial. CDFW is required to comply with CEQA in the issuance of a Lake and Streambed Alteration Agreement. For additional information on notification requirements, please contact our staff in the Lake and Streambed Alteration Program at (559) 243-4593.

II. Editorial Comments and/or Suggestions

Nesting birds: Although the Draft PEIR includes mitigation measures for nesting birds, it is not clear whether these measures will be sufficient in minimizing impacts to a level that is less than significant. For example, Mitigation Measure MM-BIO-4(a) specifies that a preconstruction survey for nesting birds should be conducted "at least two weeks before the start of construction at project sites from February 1 through August 31." In addition, this mitigation measure requires a general 250-feet buffer around occupied nest during the breeding season.

To evaluate project-related impacts on nesting birds, CDFW recommends that a qualified wildlife biologist conduct pre-activity surveys for active nests no more than 10 days prior to the start of ground disturbance to maximize the probability that nests that could potentially be impacted are detected. CDFW also recommends that surveys cover a sufficient area around the work site to identify nests and determine their status. A sufficient area means any area potentially affected by a project. In addition to direct impacts (i.e. nest destruction), noise, vibration, and movement of workers or equipment could also affect nests. Prior to initiation of construction activities, CDFW recommends a qualified biologist conduct a survey to establish a behavioral baseline of all identified nests. Once construction begins, CDFW recommends a qualified biologist continuously monitor nests to detect behavioral changes resulting from the project. If behavioral changes occur, CDFW recommends the work causing that change cease and consult with CDFW for additional avoidance and minimization measures.

If continuous monitoring of identified nests by a qualified wildlife biologist is not feasible, CDFW recommends a minimum no-disturbance buffer of 250 feet around active nests of non-listed bird species and a 500-foot no-disturbance buffer around active nests of non-

listed raptors. These buffers are advised to remain in place until the breeding season has ended or until a qualified biologist has determined that the birds have fledged and are no longer reliant upon the nest or parental care for survival. Variance from these no disturbance buffers is possible when there is compelling biological or ecological reason to do so, such as when the construction area would be concealed from a nest site by topography. CDFW recommends that a qualified wildlife biologist advise and support any variance from these buffers and notify CDFW in advance of implementing a variance.

Subsequent CEQA Documents: If the results of site-specific environmental review indicate that significant environmental impacts will occur as an outcome of implementation of tiered projects and that these impacts cannot be mitigated to less than significant levels, a Mitigated Negative Declaration (MND) would not be appropriate. Furthermore, when an MND is prepared, mitigation measures must be specific and clearly defined and cannot be deferred to a future time. The specifics of mitigation measures may be deferred, provided the lead agency commits to mitigation and establishes performance standards for implementation, when an Environmental Impact Report (EIR) is prepared. Regardless of whether an MND or EIR is prepared, CDFW recommends that mitigation measures be fully addressed and made enforceable conditions of project approval in the CEQA document prepared for the project.

Federally Listed Species: CDFW also recommends consulting with the USFWS on potential impacts to federally listed species. Take under the federal Endangered Species Act (ESA) is more broadly defined than CESA; take under federal ESA also includes significant habitat modification or degradation that could result in death or injury to a listed species by interfering with essential behavioral patterns such as breeding, foraging, or nesting. Consultation with the USFWS in order to comply with federal ESA is advised well in advance of any ground-disturbing activities.

ENVIRONMENTAL DATA

CEQA requires that information developed in environmental impact reports and negative declarations be incorporated into a database, which may be used to make subsequent or supplemental environmental determinations (Pub. Resources Code, § 21003, subd. (e)). Accordingly, please report any special status species and natural communities detected during Project surveys to the California Natural Diversity Database (CNDDB). The CNDDB field survey form can be found at the following link: http://www.dfg.ca.gov/biogeodata/cnddb/pdfs/CNDDB_FieldSurveyForm.pdf. The completed form can be mailed electronically to CNDDB at the following email address: CNDDB@wildlife.ca.gov. The types of information reported to CNDDB can be found at the following link: http://www.dfg.ca.gov/biogeodata/cnddb/plants_and_animals.asp.

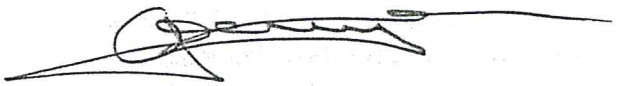
FILING FEES

If it is determined that tiered projects have the potential to impact biological resources, an assessment of filing fees will be necessary. Fees are payable upon filing of the Notice of Determination by the Lead Agency and serve to help defray the cost of environmental review by CDFW. Payment of the fee is required in order for the underlying project approval to be operative, vested, and final (Cal. Code Regs, tit. 14, § 753.5; Fish and Game Code, § 711.4; Pub. Resources Code, § 21089).

CONCLUSION

CDFW appreciates the opportunity to comment on the Project to assist TCAG in identifying and mitigating project-level impacts on biological resources. More information on survey and monitoring protocols for sensitive species can be found at CDFW's website (https://www.wildlife.ca.gov/Conservation/Survey-Protocols). Should you have questions regarding this letter or need further coordination please contact Renée Robison, Environmental Scientist, at the address provided on this letterhead, by telephone at (559) 243-4014 extension 274, or by electronic email at Renee.Robison@wildlife.ca.gov.

Sincerely,



for Julie A. Vance
Regional Manager

cc: Timothy Ludwick
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Post Office Box 3044
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REFERENCES

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G. Governor's Office of Planning and Research

Scott Morgan
Director, State Clearinghouse
1400 10th Street
Sacramento, CA 95812

Response G-1

The letter includes a comment letter from California Department of Fish and Wildlife received by State Clearinghouse. No response is required for the State Clearinghouse letter. The CDFW letter is responded to as Letter D above.

Draft 2018 RTP/SCS Public Hearing Transcription

Chair Michael Ennis:
Regional Transportation Plan/Sustainable Communities Strategy
Air quality Conformity Document
Federal transportation improvement program and Environmental Impact Report

This is the time and place scheduled for a Public Hearing to comment on the Draft 2018 Tulare County Regional Transportation Plan, Sustainable Communities Strategy, Air Quality Conformity Document, Federal Transportation Improvement Program and Environmental Impact Report. These documents have been available for public review on the TCAG website at tularecog.org. The public comment period is currently open for all documents and closes on June 26, 2018 at 5:00 p.m.

If you wish to submit testimony, please identify yourself and any agency or group you are representing. The public hearing is now open.

Okay, I think have…. (inaudible)

Pedro Hernandez you've got the floor.

Pedro Hernandez:
Alright, is this mic on?

Yeah, so Good Afternoon my name is Pedro Hernandez. I'm sure you are all familiar with me by now. I work for a nonprofit that works with rural communities here in Tulare County; Leadership Counsel for justice and accountability and I've also been a member of the RTP Roundtable so I've been involved to some degree with the development and just kind of conversation around the 2018 RTP/SCS update. And so I wanted to begin my comments with, you know, kudos to, you know, TCAG staff who have been very responsive, and you know, in my opinion, have, you know, drafted one of the better, you know, regional transportation plan updates in the San Joaquin Valley. My organization works also in other counties as well in this great process. So I do want to give kudos. And you know, and also give kudos to TCAG for, you know, providing a plan that does meet and exceed the current greenhouse production targets that the state mandated as well.

With that being said, I do have some further comments and just general concerns over the implementation of the Regional Transportation Plan. Just generally there has been early signs of electrification in, you know, Porterville and Visalia with electrification of the transit system. Something that I think would be interesting and would further the goals of, you know, TCAG, as well as help facilitate the state greenhouse gas reductions vendors is to provide some sort of

metrics as far as what equitable development investments are concerning electrification in rural communities. I just think this is something that, you know, just from a policy's perspective, you know, rural electrification is its own different process than electrifying, you know, a more urban bus line. And so I just think that should be something to be considered and be something to be further talked about. Furthermore, another concern of mine, is that the 2018 RTP/SCS update does provide very minimal increases in overall transit and bike /pedestrian travel; it's about 1% or so. And I just think that the RTP/SCS update is an opportunity, again, to provide, you know, feasible alternatives to, you know, single occupancy driving. And I think, you know, increasing, you know, to the fullest and being very aggressive as far as increasing active transportation and, you know, overall public transit ridership could be another venue that TCAG uses to meet its greenhouse gas reduction targets and also mitigate the anticipated congestion on major highways from vehicles. H-1

Another suggestion, in my opinion, that I think would really provide more robust public comment process in addition to, you know, to the, I think it's 71 events that TCAG provided outreach in, about so, right? Yeah, I, I, I think something that would be very interesting as far as like providing meaningful engagement would be a follow up meeting in every single one of the communities where this initial scenario selection was sought out, you know cause I think, you know once the surveys, are, that initial round of surveys are done; you know, it's, it's, it's obvious just from this meeting as well that you know the same volume of participation is not followed through throughout the entire process. So, I just think modifying the public participation plan, unless it's in there already, to, you know, actively provide follow up meetings where comment was initially sought out would be, you know, very, just constructive process as well.

Let's see.

Yes, another concern, as far as the Environmental Justice chapter in the RTP is that equity is defined, or that the investments are defined as equitable because rural communities, environmental justice communities, cover 1 or 2% of the total land of Tulare County of the populated land. And I think that rather raising it on overall land covered a more appropriate determination of what equity means as far as lands of investment would be based on population which inversely would mean that rural communities, or when concerning population rural communities are about 1/3 of the overall population served by, under the jurisdiction of TCAG. So I think that is also something to, you know, consider as far as defining what equity means for this investment plan.

And then finally the overall vision of this Blueprint Scenario, which is the preferred scenario; is that it imagines increased transit but also a pretty static reliance on major highway corridors. And part of this is due to congestion, part of it is also just like maintenance of very high volume

traffic corridors but in the Environmental Impact Report there are several significant impacts regarding run water quality, regarding storm water flooding, regarding as well ability for groundwater recharge that they're identifying as significant even after mitigation. And so I just think for a high priority basin like the Kaweah which serves most of Tulare County, these are factors that should be considered as well in so far in long range planning for Tulare County aside from transportation because a fear that I have is that, you know, as planning would address one issue which is greenhouse gas issues but create another which is increased ground water insecurity which no one here needs to be reminded of that, you know, Tulare County has kind of ground zero for vulnerable runwater in California. H-2

And so, thanks.

I also want to close with another shot out. I don't want to end on a negative note we do appreciate an extra hearing being set up on June 20th, or on June 25th, I believe, right? (Admin Clerk clarified: "workshop") Yeah, a workshop, as well too. I just want to, I was just notified right when I got here that is like I said, you know, as far as meaningful engagement.
And a time that is accessible to most people who are working right now. So thank you.

Michel Ennis: Thank you. Anyone else wishing to come forth in the Public Hearing? Seeing none, we will close the Public Hearing.

H: Public Hearing Comments

Public Hearings
June 18, 2018

Response H-1 (Pedro Hernandez)

The comment relates to TCAG increasing transit ridership, and active transportation; achieving GHG reduction targets and mitigating congestion on major highways. The 2018 RTP/SCS increases transit ridership and active transportation by 11 percent compared to the Trend Scenario.[2] Consistent with constraints on use of federal and state funding sources, the 2018 RTP/SCS makes significant investments in active transportation and transit.

The 2018 RTP/SCS would achieve the SB 375 targets set by the California Air Resources Board (CARB) for the region. PEIR Section 4.6 Greenhouse Gas Emissions, page 4.6-33 indicates:

"SB 375 requires that local MPOs provide plans to reduce GHG emissions from cars and light duty trucks compared to 2005 levels. The specific reduction targets are determined by CARB. For the 2018 RTP/SCS, CARB determined that the 2020 target is a 5 percent reduction from 2005 emissions levels, and the 2035 target is a 10 percent reduction. Implementation of the 2018 RTP/SCS would exceed these GHG reduction targets, providing reductions of 13 percent in 2020 and almost 17 percent in 2035 (Table 4.5-6, Results of Greenhouse Gas Emissions and Vehicle Trips Reductions). Therefore, there is no conflict with SB 375, and this impact is less than significant.

The 2018 RTP/SCS achieves the reductions by a mix of land use strategies, transportation management, and transportation projects. The 2018 RTP/SCS also notes state and regional programs that assist in reaching the reductions targets, such as state funding for transportation management and infrastructure improvement, regional air district programs to replace inefficient or heavily polluting vehicles, regional energy planning, and efficient commuting programs."

While congestion would continue to increase, it would not increase as much as would occur without the 2018 RTP/SCS. The 2018 RTP/SCS seeks to balance a number of factors including improving congestion, achieving air quality targets and staying within financial, technical and social constraints.

Response H-2 (Pedro Hernandez)

This comment addresses the Plan's hydrology and water quality impacts. Refer to Response to Comment B-1.

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2 Tulare County Association of Governments, 2018 Regional Transportation Plan / Sustainable Communities Strategy Executive Summary http://www.tularecog.org/RTPSCS/ExecutiveSummary.pdf

3.0 CORRECTIONS AND ADDITIONS

Changes to the Draft PEIR are identified below by the corresponding Draft PEIR section and subsection, if applicable, and the page number. Additions are in underline and deletions are shown in ~~strikethrough~~ format.

4.2 Agricultural Resources

Page 4.2-26 and the PEIR summary (**Table 2.0-3**) are updated to add the following bullet to the end of **Mitigation Measure MM-AG-1(a)**:

MM-AG-1(a): Consistent with the provisions of Section 15091 of the *State CEQA Guidelines*, TCAG has identified mitigation measures capable of avoiding or reducing the significant effects from the conversion of Prime Farmland, Unique Farmland, or Farmland of Statewide Importance to non-agricultural uses that are within the jurisdiction and responsibility of local agencies (land use projects) and implementing agencies (transportation projects). Local agencies and implementing agencies should assess projects for the presence of important farmlands (prime farmland, unique farmland, farmland of statewide importance), and if present, perform a Land Assessment and Site Evaluation (LESA). Where the Lead Agency has identified that a project has the potential for significant effects, the Lead Agency can and should consider mitigation measures to minimize farmland conversion impacts, including ensuring compliance with the goals and policies established within the applicable adopted county and city general plans to protect farmland. Such measures include but are not limited to the following, as well as other comparable measures identified by the Lead Agency taking into account project and site-specific considerations as applicable and feasible:

- Project relocation or corridor realignment to avoid Prime Farmland, Unique Farmland, or Farmland of Local or Statewide Importance.
- Maintain and expand agricultural land protections such as urban growth boundaries.
- Support the acquisition or voluntary dedication to the Tulare County's Agricultural Conservation Easement Program. Tulare County would be responsible for implementation of the Tulare County's Agricultural Conservation Easement Program and ensuring that the terms of the conservation easement agreements are upheld.
- Provide for mitigation fees to support a mitigation bank that invests in farmer education, agricultural infrastructure, water supply, marketing, etc. that enhance the

commercial viability of retained agricultural lands.

- As feasible, require that a farmland conservation easement, a farmland deed restriction, or other farmland conservation mechanism be granted in perpetuity to a local, regional, or statewide organization or agency whose purpose includes the acquisition and stewardship of agricultural conservation easements. Such easements should provide conservation acreage at a minimum ratio of 1:1 for direct impacts and be located within Tulare County in reasonable proximity to the area of impact.

4.3 Air Quality

The bottom of page 4.3-29 before the heading "Local" is revised to include the following reference to District Rule 9510.

Rule 9510 Indirect Source Review

The Indirect Source Review (ISR) rule, which went into effect March 1, 2006, requires developers of larger residential, commercial and industrial projects to reduce smog-forming and particulate emissions generated by their projects.

The following text is incorporated into the PEIR on page 4.3-28 under the heading "Guidance for Assessing and Mitigating Air Quality Impacts."

Health Risk Screening/Assessment

A Health Risk Screening/Assessment identifies potential TAC's impact on surrounding sensitive receptors such as hospitals, daycare centers, schools, work-sites, and residences. TAC's are air pollutants identified by OEHHA/CARB (https://www.arb.ca.gov/toxics/healthval/healthval.htm) that pose a present or potential hazard to human health. A common source of TACs can be attributed to diesel exhaust emitted from both mobile and stationary sources. Industry specific TACs generated must also be identified and quantified.

The District recommends that future development projects be evaluated for potential health impacts to surrounding receptors (on-site and off-site) resulting from operation and multi-year construction TAC emissions.

i) The District recommends conducting a screening analysis that includes all sources of emissions. A

screening analysis is used to identify projects which may have a significant health impact. A prioritization, using CAPCOA's updated methodology, is the recommended screening method. A prioritization score of 10 or greater is considered to be significant and a refined Health Risk Assessment (HRA) should be performed. The prioritization calculator can be found at http://www.valleyair.org/transportation/ceqa_idx.htm

ii) The District recommends a refined HRA for future projects that result in a prioritization score of 10 or greater. It is recommended that the project proponent contact the District to review the proposed modeling protocol. Future projects would be considered to have a significant health risk if the HRA demonstrates that the project related health impacts would exceed the District's significance threshold of 20 in a million for carcinogenic risk and 1.0 for the Acute and Chronic Hazard Indices.

Ambient Air Analysis

An ambient air quality analysis (AAQA) uses air dispersion modeling to determine if emissions increases from a project will cause or contribute to a violation of the ambient air quality standards. The District recommends that an AAQA be performed for future projects if emissions exceed 100 pounds per day of any pollutant.

If an AAQA is performed, the analysis should include emissions from both project specific permitted and non-permitted equipment and activities. The District recommends consultation with District staff to determine the appropriate model and input data to use in the analysis. Specific information for assessing significance, including screening tools and modeling guidance can be found on the District's website.

Other Rules

Individual projects may also be subject to other District rules. Project sponsors are encouraged to contact the District for additional guidance.

The discussion on page 4.3-35 of the PEIR is revised as follows:

Despite this variability in emissions, compliance with Regulation VIII and implementation of appropriate mitigation measures to control respirable PM10 emissions are considered by the SJVAPCD to ~~be sufficient to render~~ reduce a project's construction-related PM10 impacts ~~less than significant~~. **Mitigation Measure MM-AIR-1(a)** includes requirements related to construction fleet average; this mitigation measure has been revised to reflect the Districts recommendation.

Mitigation Measure MM-AIR-1(a) on page 4.3-40 and in the PEIR summary (**Table 2.0-3**) is revised as follows:

MM-AIR-1(a): Consistent with the provisions of Section 15091 of the *State CEQA Guidelines,* TCAG has identified mitigation measures capable of avoiding or reducing the significant effects regarding construction emissions that are within the jurisdiction and responsibility of local agencies (land use projects) and implementing agencies (transportation projects) . Where the Lead Agency has identified that a project has the potential for significant effects, the Lead Agency can and should consider mitigation measures to minimize reduce construction emissions below SJVAPCD construction emissions thresholds. Such measures include, but are not limited to, the following:

- Prepare a plan for approval by the SJVAPCD demonstrating feasible mitigation of construction exhaust emissions. Construction equipment powered by engines shall meet or exceed current EPA emissions standards for diesel engines. The plan shall demonstrate that off-road construction equipment used on-site shall achieve emissions equal to or cleaner than the latest EPA diesel engine emissions standards for the applicable horsepower range (e.g. EPA's Tier Certification Level) at the time of project construction. ~~that the heavy-duty (equal to or greater than 50 horsepower) off-road equipment to be used in the construction project, including owned, leased and subcontractor vehicles, will achieve a project wide fleet-average 20 percent NOx reduction and 45 percent particulate reduction compared to the most recent CARB fleet average at time of construction. A Construction Mitigation Calculator (MS Excel) may be downloaded from the Sacramento Metropolitan Air Quality Management District (SMAQMD) web site to perform the fleet average evaluation (http://www.airquality.org/businesses/ceqa land use planning/mitigation).~~
  ~~Acceptable options for reducing emissions may include use of late model engines, low emission diesel products, alternative fuels, engine retrofit technology (Carl Moyer Guidelines), after treatment products, voluntary offsite mitigation projects, provide funds for air district off site mitigation projects, and/or other options as they become available. The air district should be contacted to discuss alternative measures.~~

- Ensure that all construction equipment is properly tuned and maintained.

- Minimize idling time to 5 minutes – saves fuel and reduces emissions.

- Provide an operational water truck on-site at all times. Apply water to control dust as needed to prevent dust impacts off-site.

- Utilize existing power sources (e.g., power poles) or clean fuel generators rather than temporary power generators.

- Develop a traffic plan to minimize traffic flow interference from construction activities. The plan may include advance public notice of routing, use of public transportation, and satellite parking areas with a shuttle service. Schedule operations affecting traffic for off-peak hours. Minimize obstruction of through-traffic lanes. Provide a flag person to guide traffic properly and ensure safety at construction sites.

- As appropriate, require that portable engines and portable engine-driven equipment units used at the project work site, with the exception of on-road and off-road motor vehicles, obtain CARB Portable Equipment Registration with the state or a local district permit. Arrange appropriate consultations with the CARB or the District to determine registration and permitting requirements prior to equipment operation at the site. Minimize land disturbance.

- Suspend grading and earth moving when wind gusts exceed 25 miles per hour unless the soil is wet enough to prevent dust plumes.

- Cover trucks when hauling dirt.

- Stabilize the surface of dirt piles if not removed immediately. Limit vehicular paths on unpaved surfaces and stabilize any temporary roads.

- Minimize unnecessary vehicular and machinery activities.

- Sweep paved streets at least once per day where there is evidence of dirt that has been carried on to the roadway.

- Revegetate disturbed land, including vehicular paths created during construction to avoid future off-road vehicular activities.

- On Caltrans projects, Caltrans Standard Specifications 10-Dust Control, 17-Watering, and 18-Dust Palliative shall be incorporated into project specifications.

- An asbestos dust mitigation plan shall be prepared for projects suspected to be located on or near soils which may contain naturally occurring asbestos.

- Prohibition of any rock crushing activity where materials may contain asbestos.

- <u>Where project emissions exceed SJVAPCD thresholds, when feasible project sponsors can and should enter into an emissions reduction agreement with the SJVAPCD. An emission reduction agreement can be an agreement in which the project sponsor provides pound for pound mitigation of emissions increases through a process that develops, funds, and implements emissions reduction projects, with the District serving a role of administrator of the emissions reduction projects and verifier of the successful mitigation effort.</u>

- <u>Project sponsors of major development projects, as defined by the SJVAPCD, can and should assess applicability of District Rule 9510 Indirect Source Review (ISR) to their individual development projects to reasonably mitigate air quality impacts</u>

associated with the project. District staff can be consulted for a determination.

4.4 Biological Resources

Pages 4.4-21 (and in the Draft PEIR summary Table 2.0-3), in **Mitigation Measure BIO-1(a)** add the following new bullets and revise as follows:

MM-BIO-1(a): Consistent with the provisions of Section 15091 of the *State CEQA Guidelines*, TCAG has identified mitigation measures capable of avoiding or reducing the significant effects on threatened and endangered species and other special status species that are in the jurisdiction and responsibility of local agencies (land use projects) and implementing agencies (transportation projects). Where the Lead Agency has identified that a project has the potential for significant effects, the Lead Agency can and should consider mitigation measures to minimize impacts to sensitive and special status species, ensuring compliance with Sections 7, 9, and 10(a) of the federal Endangered Species Act; the California Endangered Species Act; the Native Plant Protection Act; and the State Fish and Game Code; and related applicable implementing regulations, as applicable and feasible. Such measures include but are not limited to the following:

- Conduct a habitat assessment, by a qualified biologist, well in advance of implementation of tiered projects, to determine if individual project areas or their immediate vicinity contain habitat suitable to support species listed as threatened, endangered, or rare pursuant to CEQA or the Native Plant Protection Act, local policies and tree preservation ordinances, applicable HCPs, or other related planning documents.

- If habitat suitable to supporting special-status plant or animal species is present, conduct sensitive species surveys according to CDFW protocols.

- If special-status plant or animal species are detected within or in the vicinity of tiered project areas, consult with CDFW to implement ground-disturbing activities and to take avoidance measures as appropriate and feasible.

- Redesign or modify projects to avoid direct and indirect impacts on special status plants, if feasible.

- Protect special-status plants near project sites by installing environmentally sensitive area fencing (orange construction barrier fencing) around special-status plant populations. The environmentally sensitive area fencing should be installed at least 20 feet from the edge of the population.

- Where avoidance is determined to be infeasible, prior to ground disturbing activities, consult with CDFW and USFWS in order to provide conservation measures to fulfill the requirements of the applicable authorization for incidental take pursuant to Section 7 or 10(a) of the federal Endangered Species Act or Section 2081 of the California Endangered Species Act to support issuance of an Incidental take permit. A wide variety of conservation strategies have been successfully used to protect the survival and recovery in the wild of federally and state-listed endangered species, including:
  - Avoidance strategies
  - Contribution of in-lieu fees
  - Use of mitigation bank credits
  - Funding of research and recovery efforts
  - Habitat restoration
  - Conservation easements
  - Permanent dedication of habitat
  - Other comparable measures
- Develop and implement a Worker Awareness Program (environmental education) to inform project workers of their responsibilities in regards to avoiding and minimizing impacts on sensitive biological resources.
- Appoint an Environmental Inspector to monitor implementation of mitigation measures.
- Schedule construction activities to avoid sensitive times for biological resources (e.g. steelhead spawning periods during the winter and spring, nesting bird season) and to avoid the rainy season when erosion and sediment transport is increased.
- Conduct pre-construction monitoring to delineate occupied sensitive species' habitat to facilitate avoidance. Where projects are determined to be within suitable habitat of listed or sensitive species that have specific field survey protocols or guidelines outlined by the USFWS, CDFW, or other local agency, conduct preconstruction surveys that follow applicable protocols and guidelines and are conducted by qualified and/or certified personnel.

Pages 4.4-24 (and in the Draft PEIR summary Table 2.0-3), in **Mitigation Measure BIO-MM-2(a)** revise as follows:

MM BIO-2(a): Consistent with the provisions of Section 15091 of the *State CEQA Guidelines*, TCAG has identified mitigation measures capable of avoiding or reducing the significant impacts on designated sensitive natural communities, including riparian habitats, that are in the jurisdiction and responsibility of local agencies (land use projects) and implementing agencies (transportation projects). Where the Lead Agency has identified that a project has the potential for significant effects, the Lead Agency can and should consider mitigation measures to minimize impacts to sensitive natural communities, ensuring compliance with Section 1600 of the State Fish and Game Code; implementing regulations of the U.S. Fish and Wildlife Service, the National Marine Fisheries Service, and the California Department of Fish and Wildlife; and other related federal, state, and local regulations, as applicable and feasible. Such measures include but are not limited to the following:

- Conduct a habitat assessment, by a qualified biologist, well in advance of implementation of tiered projects, to determine if individual project areas or their immediate vicinity support freshwater marsh, wetland, vernal pool, and/or riparian communities subject to the CDFW's regulatory authority pursuant to Fish and Game Code Section 1600 et seq.

- Where applicable, conduct a formal wetland delineation (of both State and Federal wetlands), by a qualified biologist, to determine the location and extent of wetlands and waterways on parcels slated for development. Identify project activities that may require notification to comply with all State and Federal requirements. Site map(s) designating wetlands as well as the location of any activities that may affect a lake or stream should be included with Project site evaluations.

- Consult with the USFWS, NMFS, and CDFW where such designated sensitive natural communities, including riparian habitats, provide potential or occupied habitat for federally- and state-listed rare, threatened, and endangered species afforded protection pursuant to the federal Endangered Species Act and/or birds under the Migratory Bird Treaty Act. Also, notify CDFW in the event that project-related activities have the potential to change the bed, bank, and channel of streams and other waterways subject to CDFW regulatory authority pursuant to Fish and Game Code Section 1600 et seq. Such notification should occur prior to the commencement of any activity that may (a) substantially divert or obstruct the natural flow of any river, stream, or lake; (b) substantially change or use any material from the bed, bank, or channel of any river, stream, or lake (including the removal of riparian vegetation); (c) deposit debris, waste or other materials that could pass into any river, stream, or lake. "Any river, stream, or lake" includes those that are

ephemeral or intermittent as well as those that are perennial.

- Comply with CDFW requirements for Lake and Streambed Alteration Agreements pursuant to the provisions of Section 1600 of the State Fish and Game Code.
- Require project design to avoid sensitive natural communities and riparian habitats, wherever practicable and feasible.
- Where avoidance is determined to be infeasible, develop sufficient conservation measures through coordination with regulatory agencies (i.e., USFWS or CDFW) to protect sensitive natural communities and riparian habitats.
- Install fencing and/or mark sensitive natural communities to be avoided during construction activities.

Pages 4.4-27 (and in the Draft PEIR summary Table 2.0-3), for **Mitigation Measure BIO-MM-4(a)** revise as follows:

MM-BIO-4(a): Consistent with the provisions of Section 15091 of the *State CEQA Guidelines*, TCAG has identified economically-viable mitigation measures capable of avoiding or reducing the significant impacts on migratory fish or wildlife species or within established native resident and/or migratory wildlife corridors, and native wildlife nursery sites that are in the jurisdiction and responsibility of local agencies (land use projects) and implementing agencies (transportation projects). Where the Lead Agency has identified that a project has the potential for significant effects, the Lead Agency can and should consider mitigation measures to ensure compliance with regulations of the USFWS, USFS, CDFW, and related regulations, as well as the goals and polices of counties and cities, as applicable and feasible. Such measures may include may include the following, or other comparable measures identified by the Lead Agency:

- Consult with the USFWS, USFS, CDFW, Tulare County and cities in the County, where impacts to birds afforded protection pursuant to the Migratory Bird Treaty Act during the breeding season may occur.
- Conduct a pre-activity nesting birds survey, by a qualified biologist, for active nests no more than 10 days prior to the start of ground disturbance activities, to maximize the probability of detecting nests that could potentially be impacted by the project. Such surveys should cover a sufficient area around the work site to identify nests and determine their status. A sufficient area means any area potentially affected by a project. In addition to direct impacts (i.e. nest destruction), noise, vibration, and movement of workers or equipment could also affect nests.

- Prior to initiation of construction activities, conduct a survey, by a qualified biologist, to establish a behavioral baseline of all identified nests.

- During construction, continuously monitor nests, by a qualified biologist, to detect behavioral changes resulting from the project. If behavioral changes occur, the work causing that change should cease, and the Lead Agency should consult with CDFW for additional avoidance and minimization measures. If continuous monitoring of identified nests by a qualified wildlife biologist is not feasible, a minimum no-disturbance buffer of 250 feet around active nests of non-listed bird species and a 500-foot no-disturbance buffer around active nests of non-listed raptors, is to be established. These buffers should remain in place until the breeding season has ended or until a qualified biologist has determined that the birds have fledged and are no longer reliant upon the nest or parental care for survival. Variance from these no disturbance buffers is possible when there is a demonstrated biological or ecological reason to do so, such as when the construction area would be concealed from a nest site by topography. A qualified wildlife biologist should advise the applicant and notify CDFW in advance of implementing a variance.

- ~~Prohibit construction activities within 500 feet of occupied breeding areas for wildlife afforded protection pursuant to Title 14 § 460 of the California Code of Regulations protecting fur-bearing mammals, during the breeding season.~~

- ~~Conduct a survey to identify active raptor and other migratory nongame bird nests by a qualified biologist at least two weeks before the start of construction at project sites from February 1 through August 31.~~

- ~~Prohibit construction activities with 250 feet of occupied nest of birds afforded protection pursuant to the Migratory Bird Treaty Act, during the breeding season.~~

- ~~Ensure that suitable nesting sites for migratory nongame native bird species protected under the Migratory Bird Treaty Act and/or trees with unoccupied raptor nests should only be removed prior to February 1, or following the nesting season.~~

- Conduct site-specific analyses of opportunities to preserve or improve habitat linkages with areas on- and off-site. Analyze habitat linkages/wildlife movement corridors on a broader and cumulative impact analysis scale to avoid adverse impacts from linear projects that have potential for impacts on a broader scale, and to avoid critical narrow choke points that could reduce function of recognized movement corridors on a larger scale. Require review of project designs and habitat connectivity mapping provided by the CDFW or CNDDB by a qualified biologist to determine the risk of habitat fragmentation.

- Pursue mitigation banking to preserve habitat linkages and corridors (opportunities to purchase, maintain, and/or restore offsite habitat).

- Design projects to avoid adverse effects on the movement of native resident or migratory fish or wildlife species, wildlife movement corridors, or wildlife nursery,

wherever practicable and feasible.

- Install wildlife fencing where appropriate to minimize the probability of wildlife injury due to direct interaction between wildlife and roads or construction.

- Where avoidance is determined to be infeasible, design sufficient conservation measures through coordination with local agencies and the regulatory agency (i.e., USFWS or CDFW) and in accordance with applicable general plans to establish plans to mitigate for the loss of fish and wildlife movement corridors and/or wildlife nursery sites. The consideration of conservation measures may include the following measures**.** where applicable:

  – Wildlife movement buffer zones

  – Corridor realignment

  – Appropriately spaced breaks in center barriers

  – Stream rerouting

  – Culverts

  – Creation of artificial movement corridors such as freeway under- or overpasses

  – Other comparable measures

4.0 MITIGATION MONITORING AND REPORTING PROGRAM

PURPOSE

The Mitigation Monitoring and Reporting Program (MMRP) has been prepared compliance with Section 21081.6 of the California Environmental Quality Act (CEQA) and *State CEQA Guidelines* Section 15097. It is the intent of this program to ensure that mitigation measures identified in the Program Environmental Impact Report (PEIR) are implemented.

INTRODUCTION

This MMRP describes the procedures that will be used to monitor implementation of the mitigation measures adopted in connection with the approval of the 2018 RTP/SCS. This MMRP takes the form of a table that identifies the responsible entity for monitoring implementation of each mitigation measure and the timing of each measure. TCAG will designate a staff person to serve as Coordinator for overall implementation and administration of the MMRP, and its application to future projects. The Coordinator will prepare periodic progress reports on mitigation measure implementation.

The PEIR identifies programmatic mitigation measures to be implemented by TCAG as PEIR lead agency, and also identifies recommended mitigation measures to be implemented by other implementing agencies that will be lead agencies for future transportation and land use projects. The Lead Agency for each future project will be responsible for assuring the project-specific mitigation measures it adopts are enforceable and will be responsible for monitoring those mitigation measures.

Table 4.0-1
Mitigation Monitoring and Reporting Program Matrix

Mitigation Measure	Mitigation Monitoring Timing	Responsible Monitoring Entity
Impact – Aesthetics		
MM-AES-1(a): Consistent with the provisions of Section 15091 of the *State CEQA Guidelines*, TCAG has identified mitigation measures capable of avoiding or reducing the significant effects on scenic vistas, or state-designated or eligible, and County-designated, scenic highways or vista points, that are in the jurisdiction and responsibility of local agencies (land use projects) and implementing agencies (transportation projects). Where the Lead Agency has identified that a project has the potential for significant effects, the Lead Agency can and should consider mitigation measures to minimize impacts on scenic vistas, scenic highways, and vista points, including ensuring compliance with visual resource goals and policies within county and city general plans, as applicable and feasible. Such measures include, but are not limited to, the following: • Use a palette of colors, textures, building materials that are graffiti-resistant, and/or plant materials that complement the surrounding landscape and development; • Use contour grading to better match surrounding terrain. Contour edges of major cut-and-fill to provide a more natural looking finished profile; • Use alternating facades to "break up" large facades and provide visual interest; • Design new corridor landscaping to respect existing natural and man-made features and to complement the dominant landscaping of the surrounding areas; • Replace and renew landscaping along corridors with road widenings, interchange projects, and related improvements; • Retain or replace trees bordering highways, so that clear-cutting is not evident; • Provide new corridor landscaping that respects and provides appropriate transition to existing natural and man-made features, and is complementary to the dominant landscaping or native habitats of surrounding areas; and • Implement design guidelines, local policies, and programs aimed at protecting views of scenic corridors and avoiding visual intrusions in design of projects to minimize contrasts in scale and massing between the project and surrounding natural forms and developments. Avoid, if possible, large cuts and fills when the visual environment (natural or urban) would be substantially disrupted. Site or design of projects should minimize their intrusion into important viewsheds and use contour grading to better match surrounding terrain.	Ongoing over the life of the plan	Lead Agency[1]

[1] In this MMRP, "Lead Agency" means local and implementing agencies for future transportation and land use projects that implement the 2018 RTP/SCS

Mitigation Measure	Mitigation Monitoring Timing	Responsible Monitoring Entity
MM-AES-4(a): Consistent with the provisions of Section 15091 of the *State CEQA Guidelines*, TCAG has identified mitigation measures capable of avoiding or minimizing the effects of light and glare on routes of travel for motorists, cyclists, and pedestrians, or on adjacent properties, that are in the jurisdiction and responsibility of local agencies (land use projects) and implementing agencies (transportation projects). Where the Lead Agency has identified that a project has the potential for significant effects, the Lead Agency can and should consider mitigation measures to minimize light and glare, including ensuring compliance with the goals and policies within county and city general plans, as applicable and feasible. Such measures may include but are not limited to the following: • Use lighting fixtures that are adequately shielded to a point below the light bulb and reflector and that prevent unnecessary glare onto adjacent properties; • Restrict the operation of outdoor lighting for construction and operation activities to the hours of 7:00 a.m. to 10:00 p.m.; • Lighting will be directed away from habitat and open space areas adjacent to the project site; • Use low level light sources with good color rendering and natural light qualities and/or cut-off fixtures for outdoor lighting; • Use unidirectional lighting to avoid light trespass onto adjacent properties; • Design exterior lighting to confine illumination to the project site, and/or to areas which do not include light-sensitive uses; • Provide structural and/or vegetative screening from light-sensitive uses; • Shield and direct all new street and pedestrian lighting away from light-sensitive off-site uses; • Use non-reflective glass or glass treated with a non-reflective coating for all exterior windows and glass used on building surfaces; and • Architectural lighting shall be directed onto the building surfaces and have low reflectivity to minimize glare and limit light onto adjacent properties.	Ongoing over the life of the plan	Lead Agency

Mitigation Measure	Mitigation Monitoring Timing	Responsible Monitoring Entity
Impact – Agricultural Resources		
MM-AG-1(a): Consistent with the provisions of Section 15091 of the *State CEQA Guidelines*, TCAG has identified mitigation measures capable of avoiding or reducing the significant effects from the conversion of Prime Farmland, Unique Farmland, or Farmland of Statewide Importance to non-agricultural uses that are within the jurisdiction and responsibility of local agencies (land use projects) and implementing agencies (transportation projects). Local agencies and implementing agencies should assess projects for the presence of important farmlands (prime farmland, unique farmland, farmland of statewide importance), and if present, perform a Land Assessment and Site Evaluation (LESA). Where the Lead Agency has identified that a project has the potential for significant effects, the Lead Agency can and should consider mitigation measures to minimize farmland conversion impacts, including ensuring compliance with the goals and policies established within the applicable adopted county and city general plans to protect farmland. Such measures include but are not limited to the following, as well as other comparable measures identified by the Lead Agency taking into account project and site-specific considerations as applicable and feasible: • Project relocation or corridor realignment to avoid Prime Farmland, Unique Farmland, or Farmland of Local or Statewide Importance. • Maintain and expand agricultural land protections such as urban growth boundaries. • Support the acquisition or voluntary dedication to the Tulare County's Agricultural Conservation Easement Program. Tulare County would be responsible for implementation of the Tulare County's Agricultural Conservation Easement Program and ensuring that the terms of the conservation easement agreements are upheld. • Provide for mitigation fees to support a mitigation bank that invests in farmer education, agricultural infrastructure, water supply, marketing, etc. that enhance the commercial viability of retained agricultural lands. • As feasible, require that a farmland conservation easement, a farmland deed restriction, or other farmland conservation mechanism be granted in perpetuity to a local, regional, or statewide organization or agency whose purpose includes the acquisition and stewardship of agricultural conservation easements. Such easements should provide conservation acreage at a minimum ratio of 1:1 for direct impacts and be located within Tulare County in reasonable proximity to the area of impact.	Ongoing over the life of the plan	Lead Agency

Mitigation Measure	Mitigation Monitoring Timing	Responsible Monitoring Entity
MM-AG-3(a): Consistent with the provisions of Section 15091 of the *State CEQA Guidelines*, TCAG has identified mitigation measures capable of avoiding or reducing the significant effects on forest land, timberland, or Timberland Production zones that are within the jurisdiction and responsibility of the California Department of Conservation, other public agencies, and Lead Agencies. Where the Lead Agency has identified that a project has the potential for significant effects, the Lead Agency can and should consider mitigation measures to mitigate the significant effects of forest and timberland resources to ensure compliance with the goals and policies established within the applicable adopted county and city general plans to protect resources consistent with the California Forest Legacy Act of 2007 (Pub. Resources Code, § 12220(G)), as applicable and feasible. Such measures may include the following, other comparable measures identified by the Lead Agency taking into account project and site-specific considerations as applicable and feasible:	Ongoing over the life of the plan	Lead Agency
• TCAG should facilitate and encourage implementing local agencies to encourage urban development, in place of development in rural and sensitive areas. Local jurisdictions should seek funding to prepare specific plans and related environmental documents to facilitate mixed-use development, and to allow these areas to serve as receiver sites for transfer of development rights away from environmentally sensitive lands and rural areas outside established urban growth boundaries.		TCAG
• TCAG should facilitate and encourage implementing and local agencies to establish preservation ratios to minimize loss of forest land, and timberland, such as 1 acre of unprotected forest land and timber land to be permanently conserved for each acre of open space developed as a result of individual projects.		TCAG
• TCAG should facilitate and encourage implementing and local agencies to implement design features in transportation projects to minimize impacts. Implementing agencies should consider corridor realignment, buffer zones and setbacks, and berms and fencing where feasible, to avoid forest lands and timberlands and to reduce conflicts between transportation uses and forest and timberlands.		TCAG

Mitigation Measure	Mitigation Monitoring Timing	Responsible Monitoring Entity
Impact- Air Quality		
MM-AIR-1(a): Consistent with the provisions of Section 15091 of the *State CEQA Guidelines*, TCAG has identified mitigation measures capable of avoiding or reducing the significant effects regarding construction emissions that are within the jurisdiction and responsibility of local agencies (land use projects) and implementing agencies (transportation projects) . Where the Lead Agency has identified that a project has the potential for significant effects, the Lead Agency can and should consider mitigation measures to minimize reduce construction emissions below SJVAPCD construction emissions thresholds. Such measures include, but are not limited to, the following: • Prepare a plan for approval by the SJVAPCD demonstrating feasible mitigation of construction exhaust emissions. Construction equipment powered by engines shall meet or exceed current EPA emissions standards for diesel engines. The plan shall demonstrate that off-road construction equipment used on-site shall achieve emissions equal to or cleaner than the latest EPA diesel engine emissions standards for the applicable horsepower range (e.g. EPA's Tier Certification Level) at the time of project construction. • Ensure that all construction equipment is properly tuned and maintained. • Minimize idling time to 5 minutes – saves fuel and reduces emissions. • Provide an operational water truck on-site at all times. Apply water to control dust as needed to prevent dust impacts off-site. • Utilize existing power sources (e.g., power poles) or clean fuel generators rather than temporary power generators. • Develop a traffic plan to minimize traffic flow interference from construction activities. The plan may include advance public notice of routing, use of public transportation, and satellite parking areas with a shuttle service. Schedule operations affecting traffic for off-peak hours. Minimize obstruction of through-traffic lanes. Provide a flag person to guide traffic properly and ensure safety at construction sites. • As appropriate, require that portable engines and portable engine-driven equipment units used at the project work site, with the exception of on-road and off-road motor vehicles, obtain CARB Portable Equipment Registration with the state or a local district permit. Arrange appropriate consultations with the CARB or the District to determine registration and permitting requirements prior to equipment operation at the site. Minimize land disturbance. • Suspend grading and earth moving when wind gusts exceed 25 miles per hour unless the soil is wet enough to prevent dust plumes. • Cover trucks when hauling dirt. • Stabilize the surface of dirt piles if not removed immediately.	Ongoing over the life of the plan	Lead Agency

Mitigation Measure	Mitigation Monitoring Timing	Responsible Monitoring Entity
MM-AIR-1(a) (continued): • Limit vehicular paths on unpaved surfaces and stabilize any temporary roads. • Minimize unnecessary vehicular and machinery activities. • Sweep paved streets at least once per day where there is evidence of dirt that has been carried on to the roadway. • Revegetate disturbed land, including vehicular paths created during construction to avoid future off-road vehicular activities. • On Caltrans projects, Caltrans Standard Specifications 10-Dust Control, 17-Watering, and 18-Dust Palliative shall be incorporated into project specifications. • An asbestos dust mitigation plan shall be prepared for projects suspected to be located on or near soils which may contain naturally occurring asbestos. • Prohibition of any rock crushing activity where materials may contain asbestos. • Where project emissions exceed SJVAPCD thresholds, where feasible project sponsors can and should enter into an emissions reduction agreement with the SJAPCD. An emission reduction agreement can be an agreement in which the project sponsor provides pound for pound mitigation of emissions increases through a process that develops, funds, and implements emissions reduction projects, with the District serving a role of administrator of the emissions reduction projects and verifier of the successful mitigation effort. • Project sponsors of major development projects, as defined by the SJVAPCD, can and should assess applicability of District Rule 9510 Indirect Source Review (ISR) to their individual development projects to reasonably mitigate air quality impacts associated with the project. District staff can be consulted for a determination.		
MM-AIR-2(a): TCAG shall pursue the following activities in reducing the impact associated with health risk within 500 feet of freeways and high-traffic volume roadways: • Participate in on-going statewide deliberations on health risks near freeways and high-traffic volume roadways. This involvement includes providing available data and information such as the current and projected locations of sensitive receptors relative to transportation infrastructure; • Work with air agencies including CARB and the air districts in the TCAG region to support their work in monitoring the progress on reducing exposure to emissions of PM10 and PM2.5 for sensitive receptors, including schools, hospitals, and residences within 500 feet of high-traffic volume roadways; • Work with stakeholders to identify planning and development practices that are effective in reducing health impacts to sensitive receptors; and • Share information on all of the above efforts with stakeholders, member cities, counties and the public.	Ongoing over the life of the plan	TCAG

Mitigation Measure	Mitigation Monitoring Timing	Responsible Monitoring Entity
MM-AIR-2(b): Consistent with the provisions of Section 15091 of the *State CEQA Guidelines*, TCAG has identified mitigation measures capable of avoiding or reducing the significant effects regarding exposure of sensitive receptors to substantial pollutant concentrations that are within the jurisdiction and responsibility of local agencies (land use projects) and implementing agencies (transportation projects). Where the Lead Agency has identified that a project has the potential for significant effects, the Lead Agency can and should consider the measures that have been identified by SJVAPCD, CARB, and air district(s), or other comparable measures (such as those included in General Plans or other land use regulations), to reduce health risks below SJVAPCD significance thresholds. Lead agencies can and should identify appropriate measures, to be incorporated into project building design for residential, school, and other sensitive uses located within 500 feet (or other appropriate distance as may be identified by CARB) of freeways, heavily travelled arterials, railways and other sources of DPM and known or suspected carcinogens. The measures should include but not be limited to the following: • The project sponsor should retain a qualified air quality consultant to prepare a health risk assessment (HRA) in accordance with CARB and OEHHA requirements to determine the exposure of project residents/occupants/users to stationary source and mobile source emissions prior to issuance of a demolition, grading, or building permit. The HRA should be submitted to the Lead Agency for review and approval. The sponsor should implement the approved HRA recommendations, if any. • The project sponsor should implement the following features that have been found to reduce the air quality risk to sensitive receptors and should be included in the project construction plans. These should be submitted to the appropriate agency for review and approval prior to the issuance of a demolition, grading, or building permit and ongoing. • Do not locate sensitive receptors near distribution center's entry and exit points. • Do not locate sensitive receptors in the same building as a perchloroleythene dry cleaning facility. • Maintain a 50-foot buffer from a typical gas dispensing facility (under 3.6 million gallons of gas per year). • Install, operate, and maintain in good working order a central heating and ventilation (HV) system or other air take system in the building, or in each individual residential unit, that meets the efficiency standard of the MERV 13. The HV system should include the following features: Installation of a high efficiency filter and/or carbon filter-to-filter particulates and other chemical matter from entering the building. Either HEPA filters or ASHRAE 85 percent supply filters should be used. • Retain a qualified HV consultant or HERS rater during the design phase of the project to locate the HV system based on exposure modeling from the mobile and/or stationary pollutant sources. • Maintain positive pressure within the building. • Achieve a performance standard of at least one air exchange per hour of fresh outside filtered air.	Ongoing over the life of the plan	Lead Agency

Mitigation Measure	Mitigation Monitoring Timing	Responsible Monitoring Entity
AIR-2(b) (continued): • Achieve a performance standard of at least 4 air exchanges per hour of recirculation • Achieve a performance standard of 0.25 air exchanges per hour of in unfiltered infiltration if the building is not positively pressurized. • Maintain, repair and/or replace HV system or prepare an Operation and Maintenance Manual for the HV system and the filter. The manual should include the operating instructions and maintenance and replacement schedule. This manual should be included in the CC&R's for residential projects and distributed to the building maintenance staff. In addition, the sponsor should prepare a separate Homeowners Manual. The manual should contain the operating instructions and maintenance and replacement schedule for the HV system and the filters. It should also include a disclosure to the buyers of the air quality analysis findings. • Private (individual and common) exterior open space areas, including playgrounds, patios, and decks, should either be shielded from stationary sources of air pollution by buildings or otherwise buffered to further reduce air pollution exposure for project occupants.		

Mitigation Measure	Mitigation Monitoring Timing	Responsible Monitoring Entity
Impact- Biological Resources		
MM-BIO-1(a): Consistent with the provisions of Section 15091 of the *State CEQA Guidelines*, TCAG has identified mitigation measures capable of avoiding or reducing the significant effects on threatened and endangered species and other special status species that are in the jurisdiction and responsibility of local agencies (land use projects) and implementing agencies (transportation projects). Where the Lead Agency has identified that a project has the potential for significant effects, the Lead Agency can and should consider mitigation measures to minimize impacts to sensitive and special status species, ensuring compliance with Sections 7, 9, and 10(a) of the federal Endangered Species Act; the California Endangered Species Act; the Native Plant Protection Act; and the State Fish and Game Code; and related applicable implementing regulations, as applicable and feasible. Such measures include but are not limited to the following: • Conduct a habitat assessment, by a qualified biologist, well in advance of implementation of tiered projects, to determine if individual project areas or their immediate vicinity contain habitat suitable to support species listed as threatened, endangered, or rare pursuant to CEQA or the Native Plant Protection Act, local policies and tree preservation ordinances, applicable HCPs, or other related planning documents. • If habitat suitable to supporting special-status plant or animal species is present, conduct sensitive species surveys according to CDFW protocols. • If special-status plant or animal species are detected within or in the vicinity of tiered project areas, consult with CDFW to implement ground-disturbing activities and to take avoidance measures as appropriate and feasible. • Redesign or modify projects to avoid direct and indirect impacts on special status plants, if feasible. • Protect special-status plants near project sites by installing environmentally sensitive area fencing (orange construction barrier fencing) around special-status plant populations. The environmentally sensitive area fencing should be installed at least 20 feet from the edge of the population.	Ongoing over the life of the plan	Lead Agency

Mitigation Measure	Mitigation Monitoring Timing	Responsible Monitoring Entity
BIO-1(a): (continued) • Where avoidance is determined to be infeasible, prior to ground disturbing activities, consult with CDFW and USFWS in order to provide conservation measures to fulfill the requirements of the applicable authorization for incidental take pursuant to Section 7 or 10(a) of the federal Endangered Species Act or Section 2081 of the California Endangered Species Act to support issuance of an Incidental take permit. A wide variety of conservation strategies have been successfully used to protect the survival and recovery in the wild of federally and state-listed endangered species, including: – Avoidance strategies – Contribution of in-lieu fees – Use of mitigation bank credits – Funding of research and recovery efforts – Habitat restoration – Conservation easements – Permanent dedication of habitat – Other comparable measures • Develop and implement a Worker Awareness Program (environmental education) to inform project workers of their responsibilities in regards to avoiding and minimizing impacts on sensitive biological resources. • Appoint an Environmental Inspector to monitor implementation of mitigation measures. • Schedule construction activities to avoid sensitive times for biological resources (e.g. steelhead spawning periods during the winter and spring, nesting bird season) and to avoid the rainy season when erosion and sediment transport is increased. • Conduct pre-construction monitoring to delineate occupied sensitive species' habitat to facilitate avoidance. Where projects are determined to be within suitable habitat of listed or sensitive species that have specific field survey protocols or guidelines outlined by the USFWS, CDFW, or other local agency, conduct preconstruction surveys that follow applicable protocols and guidelines and are conducted by qualified and/or certified personnel.		

Mitigation Measure	Mitigation Monitoring Timing	Responsible Monitoring Entity
MM-BIO-2(a): Consistent with the provisions of Section 15091 of the *State CEQA Guidelines*, TCAG has identified mitigation measures capable of avoiding or reducing the significant impacts on designated sensitive natural communities, including riparian habitats, that are in the jurisdiction and responsibility of local agencies (land use projects) and implementing agencies (transportation projects). Where the Lead Agency has identified that a project has the potential for significant effects, the Lead Agency can and should consider mitigation measures to minimize impacts to sensitive natural communities, ensuring compliance with Section 1600 of the State Fish and Game Code; implementing regulations of the U.S. Fish and Wildlife Service, the National Marine Fisheries Service, and the California Department of Fish and Wildlife; and other related federal, state, and local regulations, as applicable and feasible. Such measures include but are not limited to the following: • Conduct a habitat assessment, by a qualified biologist, well in advance of implementation of tiered projects, to determine if individual project areas or their immediate vicinity support freshwater marsh, wetland, vernal pool, and/or riparian communities subject to the CDFW's regulatory authority pursuant to Fish and Game Code Section 1600 et seq. • Where applicable, conduct a formal wetland delineation (of both State and Federal wetlands), by a qualified biologist, to determine the location and extent of wetlands and waterways on parcels slated for development. Identify project activities that may require notification to comply with all State and Federal requirements. Site map(s) designating wetlands as well as the location of any activities that may affect a lake or stream should be included with Project site evaluations. • Consult with the USFWS, NMFS, and CDFW where such designated sensitive natural communities, including riparian habitats, provide potential or occupied habitat for federally- and state-listed rare, threatened, and endangered species afforded protection pursuant to the federal Endangered Species Act and/or birds under the Migratory Bird Treaty Act. Also, notify CDFW in the event that project-related activities have the potential to change the bed, bank, and channel of streams and other waterways subject to CDFW regulatory authority pursuant to Fish and Game Code Section 1600 et seq. Such notification should occur prior to the commencement of any activity that may (a) substantially divert or obstruct the natural flow of any river, stream, or lake; (b) substantially change or use any material from the bed, bank, or channel of any river, stream, or lake (including the removal of riparian vegetation); (c) deposit debris, waste or other materials that could pass into any river, stream, or lake. "Any river, stream, or lake" includes those that are ephemeral or intermittent as well as those that are perennial. • Comply with CDFW requirements for Lake and Streambed Alteration Agreements pursuant to the provisions of Section 1600 of the State Fish and Game Code. • Require project design to avoid sensitive natural communities and riparian habitats, wherever practicable and feasible. • Where avoidance is determined to be infeasible, develop sufficient conservation measures through coordination with regulatory agencies (i.e., USFWS or CDFW) to protect sensitive natural communities and riparian habitats. • Install fencing and/or mark sensitive natural communities to be avoided during construction activities. • Salvage and stockpile topsoil (the surface material from 6 to 12 inches deep) and perennial plants for use in restoring native vegetation to all areas of temporary disturbance within the project area. • Revegetate with appropriate native vegetation following the completion of construction activities. • Complete habitat enhancement (e.g., through removal of non-native invasive wetland species	Ongoing over the life of the plan	Lead Agency

Mitigation Measure	Mitigation Monitoring Timing	Responsible Monitoring Entity
MM-BIO-3(a): Consistent with the provisions of Section 15091 of the *State CEQA Guidelines*, TCAG has identified mitigation measures capable of avoiding or reducing the significant impacts on federally-protected wetlands that are in the jurisdiction and responsibility of local agencies (land use projects) and implementing agencies (transportation projects).. Where the Lead Agency has identified that a project has the potential for significant effects, the Lead Agency can and should consider mitigation measures to minimize impacts on federally protected wetlands, ensuring compliance with Section 404 of the Clean Water Act and regulations of the USACE, and other applicable federal, state and local regulations, as applicable and feasible. Such measures include but are not limited to the following: • Require review of construction drawings by a certified wetland delineator as part of each project-specific environmental analysis to determine whether wetlands will be affected and, if necessary, perform a formal wetland delineation. • Require project design to avoid federally protected wetlands consistent with the provisions of Section 404 of the Clean Water Act, wherever practicable and feasible. Where avoidance is determined to be infeasible, develop sufficient compensatory mitigation measures, consistent with EPA's and USACE's Final Compensatory Mitigation Rule to fulfill the requirements of the applicable authorization for impacts to federally protected wetlands to support issuance of a permit or other authorization under Section 404 of the Clean Water Act, ensuring no net loss of wetlands functions or values.	Ongoing over the life of the plan	Lead Agency

Mitigation Measure	Mitigation Monitoring Timing	Responsible Monitoring Entity
MM-BIO-4(a): Consistent with the provisions of Section 15091 of the *State CEQA Guidelines*, TCAG has identified economically-viable mitigation measures capable of avoiding or reducing the significant impacts on migratory fish or wildlife species or within established native resident and/or migratory wildlife corridors, and native wildlife nursery sites that are in the jurisdiction and responsibility of local agencies (land use projects) and implementing agencies (transportation projects). Where the Lead Agency has identified that a project has the potential for significant effects, the Lead Agency can and should consider mitigation measures to ensure compliance with regulations of the USFWS, USFS, CDFW, and related regulations, as well as the goals and polices of counties and cities, as applicable and feasible. Such measures may include may include the following, or other comparable measures identified by the Lead Agency: • Consult with the USFWS, USFS, CDFW, Tulare County and cities in the County, where impacts to birds afforded protection pursuant to the Migratory Bird Treaty Act during the breeding season may occur. • Conduct a pre-activity nesting birds survey, by a qualified biologist, for active nests no more than 10 days prior to the start of ground disturbance activities, to maximize the probability of detecting nests that could potentially be impacted by the project. Such surveys should cover a sufficient area around the work site to identify nests and determine their status. A sufficient area means any area potentially affected by a project. In addition to direct impacts (i.e. nest destruction), noise, vibration, and movement of workers or equipment could also affect nests. • Prior to initiation of construction activities, conduct a survey, by a qualified biologist, to establish a behavioral baseline of all identified nests. • During construction, continuously monitor nests, by a qualified biologist, to detect behavioral changes resulting from the project. If behavioral changes occur, the work causing that change should cease and the Lead Agency should consult with CDFW for additional avoidance and minimization measures. If continuous monitoring of identified nests by a qualified wildlife biologist is not feasible, a minimum no-disturbance buffer of 250 feet around active nests of non-listed bird species and a 500-foot no-disturbance buffer around active nests of non-listed raptors, is to be established. These buffers should remain in place until the breeding season has ended or until a qualified biologist has determined that the birds have fledged and are no longer reliant upon the nest or parental care for survival. Variance from these no disturbance buffers is possible when there is a demonstrated biological or ecological reason to do so, such as when the construction area would be concealed from a nest site by topography. A qualified wildlife biologist should advise the applicant and notify CDFW in advance of implementing a variance. • Conduct site-specific analyses of opportunities to preserve or improve habitat linkages with areas on- and off-site. Analyze habitat linkages/wildlife movement corridors on a broader and cumulative impact analysis scale to avoid adverse impacts from linear projects that have potential for impacts on a broader scale, and to avoid critical narrow choke points that could reduce function of recognized movement corridors on a larger scale. Require review of project designs and habitat connectivity mapping provided by the CDFW or CNDDB by a qualified biologist to determine the risk of habitat fragmentation.	Ongoing over the life of the plan	Lead Agency

Mitigation Measure	Mitigation Monitoring Timing	Responsible Monitoring Entity
BIO-4(a): (continued) • Pursue mitigation banking to preserve habitat linkages and corridors (opportunities to purchase, maintain, and/or restore offsite habitat). • Design projects to avoid adverse effects on the movement of native resident or migratory fish or wildlife species, wildlife movement corridors, or wildlife nursery, wherever practicable and feasible. • Install wildlife fencing where appropriate to minimize the probability of wildlife injury due to direct interaction between wildlife and roads or construction. • Where avoidance is determined to be infeasible, design sufficient conservation measures through coordination with local agencies and the regulatory agency (i.e., USFWS or CDFW) and in accordance with applicable general plans to establish plans to mitigate for the loss of fish and wildlife movement corridors and/or wildlife nursery sites. The consideration of conservation measures may include the following measures**.** where applicable: – Wildlife movement buffer zones – Corridor realignment – Appropriately spaced breaks in center barriers – Stream rerouting – Culverts – Creation of artificial movement corridors such as freeway under- or overpasses – Other comparable measures		
MM-BIO-5(a): Consistent with the provisions of Section 15091 of the *State CEQA Guidelines*, TCAG has identified mitigation measures capable of avoiding or reducing the significant effects on biological resources protected by local ordinance that are in the jurisdiction and responsibility of local agencies (land use projects) and implementing agencies (transportation projects). Where the Lead Agency has identified that a project has the potential to significantly affect such biological resources, the Lead Agency can and should consider mitigation measures to minimize such impacts by encouraging compliance with the applicable ordinance and by facilitating mitigation as feasible at the regional level for example by facilitating mitigation banks.	Ongoing over the life of the plan	Lead Agency
MM-BIO-6(a): Consistent with the provisions of Section 15091 of the *State CEQA Guidelines*, TCAG has identified mitigation measures capable of avoiding or reducing the significant effects on areas within an HCP or NCCP that are in the jurisdiction and responsibility of local agencies (land use projects) and implementing agencies (transportation projects). Where the Lead Agency has identified that a project has the potential to significantly affect such areas, the Lead Agency can and should consider mitigation measures to minimize such impacts by encouraging avoidance of such areas and where avoidance is infeasible facilitating appropriate mitigation such as in kind land replacement and mitigation banking.	Ongoing over the life of the plan	Lead Agency

Mitigation Measure	Mitigation Monitoring Timing	Responsible Monitoring Entity
Impact – Cultural Resources		
MM-CR-1(a): Consistent with the provisions of Section 15091 of the *State CEQA Guidelines*, TCAG has identified mitigation measures capable of avoiding or reducing significant effects on historic resources that are in the jurisdiction and responsibility of local agencies (land use projects) and implementing agencies (transportation projects). Where the Lead Agency has identified that a project has the potential for significant effects, the Lead Agency can and should consider mitigation measures. Such measures include but are not limited to the following: As part of planning, design, and engineering for projects, implementing and local agencies should ensure that historic resources are treated in accordance with applicable federal, state, and local laws and regulations. When a project has been identified as potentially affecting a historical resource, a historical resources inventory should be conducted by a qualified architectural historian. The study should comply with *State CEQA Guidelines* section 15064.5(b), and, if federal funding or permits are required, with section 106 of the National Historic Preservation Act (NHPA) of 1966 (16 USC Sec. 470). As applicable, the study should consist of the following elements: • A records search at the Southern San Joaquin Valley Information Center (California State University, Bakersfield); • Contact with local historical societies, museums, or other interested parties as appropriate to help determine locations of known significant historical resources; • Necessary background, archival and historic research; • A survey of built environment/architectural resources that are 50 years old or older that may be directly or indirectly impacted by project activities; and • Recordation and evaluation of built environment/architectural resources that are 50 years old or older that may be directly or indirectly impacted by project activities; and • Buildings should be evaluated under CRHR and/or NRHP Criteria as appropriate and recorded on California Department of Parks and Recreation 523 forms.	Ongoing over the life of the plan	Lead Agency

Mitigation Measure	Mitigation Monitoring Timing	Responsible Monitoring Entity
MM-CR-2(a): Consistent with the provisions of Section 15091 of the *State CEQA Guidelines*, TCAG has identified mitigation measures capable of avoiding or reducing the significant effects of on archaeological resources within the jurisdiction and responsibility of local agencies (land use projects) and implementing agencies (transportation projects). . Where the Lead Agency has identified that a project has the potential for significant effects, the Lead Agency can and should consider mitigation measures consistent with Section 15064.5 of the *State CEQA Guidelines* capable of avoiding or reducing significant impacts on archaeological resources, to ensure compliance with the National Historic Preservation Act, Section 5097.5 of the Public Resources Code (PRC), state programs pursuant to Sections 5024 and 5024.5 of the PRC, adopted county and city general plans, and other federal, state and local regulations. Such measures include but are not limited to the following, or other comparable measures identified by the Lead Agency: • Pursuant to CEQA Guidelines Section 15064.5, prior to construction activities, obtain a qualified archaeologist to conduct a record search at the appropriate Information Center to determine whether the project area has been previously surveyed and whether archaeological resources were identified. • Consult with the NAHC to determine whether known sacred sites are in the project area, and identify the Native American Tribe(s) to contact to obtain information about the project site. • Comply with Section 106 of the National Historic Preservation Act (NHPA) including, but not limited to, projects for which federal funding or approval is required for the individual project. • Prior to construction activities, obtain a qualified archaeologist to conduct archaeological surveys as recommended by the Information Center. In the event the records indicate that no previous survey has been conducted, the Information Center will make a recommendation on whether a survey is warranted based on the sensitivity of the project area for archaeological resources. • If a record search indicates that the project is located in an area rich with cultural materials, retain a qualified archaeologist to monitor any subsurface operations, including but not limited to grading, excavation, trenching, or removal of existing resources from the subject property.	Ongoing over the life of the plan	Lead Agency

Mitigation Measure	Mitigation Monitoring Timing	Responsible Monitoring Entity
MM-CR -2(a) (continued) • Design projects and conduct construction and excavation activities to avoid cultural resources (if identified). If avoidance is not feasible, further work may be needed to determine the importance of a resource. Retain a qualified archaeologist familiar with the local archaeology, who should make recommendations regarding the work necessary to determine importance. If the archaeological resource is determined to be important under state or federal guidelines, , impacts on the cultural resource should be mitigated consistent with the requirements of *State CEQA Guidelines* § 15126.4(b)(3), which requires that preservation in place be the preferred mitigation strategy if feasible, and that any data recovery plans meet certain requirements. • Stop construction and excavation activities in the area where cultural resources are found until a qualified archaeologist can determine the importance of these resources. Stabilize surface if necessary to preserve the resources until they can be evaluated. • Determine if security will be necessary for the area (if theft and/or vandalism is likely). Erecting physical barriers or other protective devices to protect from theft/disturbance.		
MM-CR-3(a): Consistent with the provisions of Section 15091 of the *State CEQA Guidelines*, TCAG has identified mitigation measures capable of avoiding or reducing the significant effects of on paleontological resources within the jurisdiction and responsibility of local agencies (land use projects) and implementing agencies (transportation projects). Where the Lead Agency has identified that a project has the potential for significant effects, the Lead Agency can and should consider mitigation measures consistent with Section 15064.5 of the *State CEQA Guidelines* capable of avoiding or reducing significant impacts on paleontological resources, to ensure compliance with the National Historic Preservation Act, Section 5097.5 of the Public Resources Code (PRC), state programs pursuant to Sections 5024 and 5024.5 of the PRC, adopted county and city general plans, and other federal, state and local regulations. Such measures include but are not limited to the following**:** During environmental review implementing and local agencies can and should retain a qualified paleontologist to identify, survey, and evaluate paleontological resources where potential impacts are considered high. All construction activities should avoid known paleontological resources, if feasible, especially if the resources in a particular lithologic unit formation have been determined to be unique or likely to contain paleontological resources. If avoidance is not feasible, paleontological resources should be excavated by a qualified paleontologist and given to a local agency, State University, or other applicable institution, where they could be curated and displayed for public education purposes.	Ongoing over the life of the plan	Lead Agency

Mitigation Measure	Mitigation Monitoring Timing	Responsible Monitoring Entity
MM-CR-4(a): Consistent with the provisions of Section 15091 of the *State CEQA Guidelines*, TCAG has identified mitigation measures capable of avoiding or reducing the significant effects to human remains that are within the jurisdiction and responsibility of local agencies (land use projects) and implementing agencies (transportation projects). Where the Lead Agency has identified that a project has the potential for significant effects, the Lead Agency should consider mitigation measures capable of avoiding or reducing significant impacts on human remains, to ensure compliance with the California Health and Safety Code, Section 7060 and Sections 18950-18961, and Native American Heritage Commission requirements, as applicable and feasible, and all other applicable federal, state, and local laws. Such measures include but are not limited to the following: In the event of discovery or recognition of any human remains during construction or excavation activities, or any ongoing maintenance or operations, implementing and local agencies should cease further excavation or disturbance of the site or any nearby area reasonably suspected to overlie adjacent human remains until the following steps are taken: • The Tulare County Coroner has been informed and has determined that no investigation of the cause of death is required. • If the remains are determined or suspected by the County coroner to be of Native American origin, either of the following steps will be taken: – The coroner should contact the Native American Heritage Commission in order to ascertain the proper descendants from the deceased individual. The coroner should make a recommendation to the landowner or the person responsible for the excavation work, for means of treating or disposing of, with appropriate dignity, the human remains and any associated grave goods, which may include obtaining a qualified archaeologist or team of archaeologists to properly excavate the human remains. – Implementing or local agencies or authorized representatives should retain a Native American monitor, and an archaeologist, if recommended by the Native American monitor, and rebury the Native American human remains and any associated grave goods, with appropriate dignity, on the property and in a location that is not subject to further subsurface disturbance when any of the following conditions occurs: 1. The Native American Heritage Commission is unable to identify a descendent. 2. The descendant identified fails to make a recommendation. 3. The implementing agency or its authorized representative rejects the recommendation of the descendant, and the mediation by the Native American Heritage Commission fails to provide measures acceptable to the landowner.	Ongoing over the life of the plan	Lead Agency

Mitigation Measure	Mitigation Monitoring Timing	Responsible Monitoring Entity
MM-TCR-1(a): Consistent with the provisions of Section 15091 of the *State CEQA Guidelines*, TCAG has identified mitigation measures capable of avoiding or reducing the significant effects of on tribal cultural resources within the jurisdiction and responsibility of local agencies (land use projects) and implementing agencies (transportation projects). . Where the Lead Agency has identified that a project has the potential for significant effects, the Lead Agency can and should consider mitigation measures consistent with Section 15064.5 of the *State CEQA Guidelines* capable of avoiding or reducing significant impacts on tribal cultural resources, to ensure compliance with the National Historic Preservation Act, Section 5097.5 of the Public Resources Code (PRC), state programs pursuant to Sections 5024 and 5024.5 of the PRC, adopted county and city general plans, and other federal, state and local regulations. Such measures include but are not limited to the following**:** Where Tribal Cultural Resources have been identified (pursuant to the requirements of AB 52), appropriate mitigation shall be identified in concert with local tribes. Where excavation could extend below previously disturbed levels, notification shall be provided to California Native American tribes that are traditionally and culturally affiliated with the geographic area of the project site and have submitted a written request to the Department of City Planning to be notified of proposed projects in that area. If the potential for tribal resources exists, excavation in previously undisturbed soils shall be monitored by a qualified Tribal Monitor. If tribal resources are discovered during excavation, grading, or construction activities, work shall cease in the area of the find until an appropriate Tribal Representative has evaluated the find. Construction personnel shall not collect or move any tribal resources. Construction activity may continue unimpeded on other portions of the project site. Any tribal resources shall be treated with appropriate dignity and protected and preserved as appropriate.	Ongoing over the life of the plan	Lead Agency
Impact- Greenhouse Gases		
MM-GHG-1(a): TCAG shall, through its ongoing outreach and technical assistance programs, work with and encourage local governments to adopt policies and develop practices that lead to GHG emission reductions. These activities shall include, but are not limited to, providing technical assistance and information sharing on developing local Climate Action Plans.	Ongoing over the life of the plan	TCAG

Mitigation Measure	Mitigation Monitoring Timing	Responsible Monitoring Entity
MM-GHG-1(b): Consistent with the provisions of Section 15091 of the *State CEQA Guidelines*, TCAG has identified mitigation measures capable of reducing GHG emissions that are within the jurisdiction and responsibility of local agencies (land use projects). Local agencies should adopt, implement, and update Climate Action Plans consistent with 2017 Scoping Plan and General Plan Guidelines guidance that do the following: a) Quantify GHG emissions, both existing and projected over a specified period, resulting from activities within each agency's jurisdiction; b) Establish a level, based on substantial evidence, below which the contribution to GHG emissions from activities covered by the plan would not be cumulatively considerable; c) Identify and analyze the GHG emissions resulting for specific actions or categories of actions anticipated within their respective jurisdictions; d) Specify measures or a group of measures, including performance standards, that substantial evidence demonstrates, if implemented on a project-by-project basis, would collectively achieve the specified emissions level; e) Establish a mechanism to monitor the plan's progress toward achieving that level and to require amendment if the plan is not achieving specified levels; and f) Be adopted in a public process following environmental review. CAPs should, when appropriate, incorporate planning and land use measures from the California Attorney General's latest list of example policies to address climate change at both the plan and project level. Specifically, at the plan level, land use plans can and should, when appropriate and feasible, incorporate planning and land use measures from the California Attorney General's latest list of example policies to address climate change (http://ag.ca.gov/globalwarming/pdf/GP_policies.pdf), including, but not limited to policies from that web page such as: • Smart growth, jobs/housing balance, transit-oriented development, and infill development through land use designations, incentives and fees, zoning, and public private partnerships • Create transit, bicycle, and pedestrian connections through planning, funding, development requirements, incentives and regional cooperation, and create disincentives for auto use • Energy and water-efficient buildings and landscaping through ordinances, development fees, incentives, project timing, prioritization, and other implementing tools	Ongoing over the life of the plan	Local Agencies

Mitigation Measure	Mitigation Monitoring Timing	Responsible Monitoring Entity
MM-GHG-1(c): Consistent with the provisions of Section 15091 of the *State CEQA Guidelines*, TCAG has identified mitigation measures capable of reducing GHG emissions that are within the jurisdiction and responsibility of local agencies (land use projects). Where the Lead Agency has identified that a project has the potential for significant effects, the Lead Agency can and should consider mitigation measures to minimize land use project GHG emissions, including but not limited to those on the Attorney General's list of project-specific mitigation measures available at the following web site: http://ag.ca.gov/globalwarming/pdf/ GW_mitigation_measures.pdf such as: • Adopt a comprehensive parking policy that discourages private vehicle use and encourages the use of alternative transportation • Build or fund a major transit stop within or near development • Provide public transit incentives such as free or low-cost monthly transit passes to employees, or free ride areas to residents and customers • Incorporate bicycle lanes, routes and facilities into street systems, new subdivisions, and large developments • Require amenities for non-motorized transportation, such as secure and convenient bicycle parking Additional measures from additional resources listed by the California Attorney General at the following webpage: https://oag.ca.gov/environment/ceqa/measures.	Ongoing over the life of the plan	Lead Agency
Impact – Land Use and Planning		
MM-LU-1(a): Consistent with the provisions of Section 15091 of the *State CEQA Guidelines*, TCAG has identified mitigation measures capable of avoiding or reducing the significant effects regarding the potential to conflict with any applicable land use plan, policy, or regulation (adopted for the purpose of avoiding or mitigating environmental effects) of an agency with jurisdiction over the project that are within the jurisdiction and responsibility of local agencies (land use projects) and implementing agencies (transportation projects). Where the Lead Agency has identified that a project has the potential for significant effects, the Lead Agency can and should consider mitigation measures to avoid conflicts with, land use plans, policies, or regulations of an agency with jurisdiction over the project. Such measures include, but are not limited to, the following: • Modify the transportation or land use project to eliminate the conflict; or if an inconsistency with an adopted general plan policy or land use regulations (adopted for the purpose of avoiding or mitigating environmental effects) is identified, determine if the environmental, social, economic, and engineering benefits of the project or other factors warrant an amendment to the general plan or land use regulations.	Ongoing over the life of the plan	Lead Agency

Mitigation Measure	Mitigation Monitoring Timing	Responsible Monitoring Entity

MM-LU 2(a): Consistent with the provisions of Section 15091 of the *State CEQA Guidelines*, TCAG has identified mitigation measures capable of avoiding or reducing the significant effects related to the physical division of an established community in a project area within the jurisdiction and responsibility of local jurisdictions and Lead Agencies. Where the Lead Agency has identified that a project has the potential for significant effects, the Lead Agency can and should consider mitigation measures to ensure compliance with the goals and policies established within the applicable adopted county and city general plans to avoid the creation of barriers that physically divide such communities, as applicable and feasible. Such measures may include the following, or other comparable measures identified by the Lead Agency:
• Local jurisdictions can and should encourage local jurisdictions to facilitate good design for land use projects that builds upon and improves existing circulation patterns.
• Local jurisdictions can and should encourage implementing agencies to orient transportation projects to minimize impacts on existing communities by:
  • Selecting alignments within or adjacent to existing public right-of-ways.
  • Designing sections above- or below-grade to avoid physical division of communities.
  • Providing for direct crossings, overcrossings, or undercrossings at regular intervals for various modes of travel (e.g. active transport).
	Ongoing over the life of the plan	Lead Agency

Mitigation Measure	Mitigation Monitoring Timing	Responsible Monitoring Entity
Impact – Noise		
MM-NOISE-1(a): Consistent with the provisions of Section 15091 of the *State CEQA Guidelines*, TCAG has identified mitigation measures capable of avoiding or reducing significant construction noise impacts that are within the jurisdiction and responsibility of local agencies (land use projects) and implementing agencies (transportation projects). Where the Lead Agency has identified that a project has the potential for significant effects, the Lead Agency can and should consider mitigation measures to avoid or reduce construction noise impacts. Such measures include, but are not limited to, the following: • Equipment and trucks used for project construction can and should utilize the best available noise control techniques (e.g., improved mufflers, equipment redesign, use of intake silencers, ducts, engine enclosures, and acoustically attenuating shields or shrouds), wherever feasible. • Tools (e.g., jack hammers, pavement breakers, and rock drills) used for project construction can and should be hydraulically or electrically powered to avoid noise associated with compressed air exhaust from pneumatically powered tools. However, where use of pneumatic tools is unavoidable, an exhaust muffler on the compressed air exhaust should be used; this muffler can lower noise levels from the exhaust by up to about 10 dBA. External jackets on the tools themselves should be used, if such jackets are commercially available, and this could achieve a further reduction of 5 dBA. Quieter procedures should be used, such as drills rather than impact equipment, whenever such procedures are available and consistent with construction procedures. • Stationary noise sources during construction activities (e.g., noise generators and staging areas) can and should be located as far from adjacent sensitive receptors as possible and they should be muffled and enclosed within temporary sheds or use other measures as determined by the Lead Agency (or other appropriate government agency) to provide equivalent noise reduction.	Ongoing over the life of the plan	Lead Agency

Mitigation Measure	Mitigation Monitoring Timing	Responsible Monitoring Entity
MM-NOISE-1(a): (continued) • A procedure and phone numbers for notifying the Lead Agency staff and local Police Department of noise complaints; (during regular construction hours and off-hours). • A sign posted on-site pertaining with permitted construction days and hours and complaint procedures and who to notify in the event of a problem. The sign should also include a listing of both the Lead Agency and construction contractor's telephone numbers (during regular construction hours and off-hours). • The designation of an on-site construction complaint and enforcement manager for the project. • Notification of neighbors and occupants within 300 feet of the project construction area at least 30 days in advance of extreme noise generating activities about the estimated duration of the activity. • A preconstruction meeting can and should be held with the job inspectors and the general contractor/on-site project manager to confirm that noise measures and practices (including construction hours, neighborhood notification, posted signs, etc.) are completed. • Use of portable barriers in the vicinity of sensitive receptors during construction. • Projects that require pile driving or other construction noise above 90 dBA in proximity to sensitive receptors, should reduce potential pier drilling, pile driving and/or other extreme noise generating construction impacts greater than 90 dBA; a set of site-specific noise attenuation measures should be completed under the supervision of a qualified acoustical consultant. • Implement noise control at the receivers by temporarily improving the noise reduction capability of adjacent buildings (for instance by the use of sound blankets), and implement if such measures are feasible and would noticeably reduce noise impacts. • Monitor the effectiveness of noise attenuation measures by taking noise measurements. • Maximize the distance between noise-sensitive land uses and new roadway lanes, roadways, rail lines, transit centers, park-and-ride lots, and other new noise-generating facilities. • Construct sound reducing barriers between noise sources and noise-sensitive land uses.		

Mitigation Measure	Mitigation Monitoring Timing	Responsible Monitoring Entity
MM-NOISE-1(b): Consistent with the provisions of Section 15091 of the *State CEQA Guidelines*, TCAG has identified mitigation measures capable of avoiding or reducing significant operational noise impacts that are within the jurisdiction and responsibility of local agencies (land use projects) and implementing agencies (transportation projects). Where the Lead Agency has identified that a project has the potential for significant effects, the Lead Agency can and should consider mitigation measures to avoid or reduce operational noise impacts. Such measures include, but are not limited to, the following: • Stationary noise sources can and should be located as far from adjacent sensitive receptors as possible and they should be muffled and enclosed within temporary sheds, incorporate insulation barriers, or use other measures as determined by the Lead Agency (or other appropriate government agency) to provide equivalent noise reduction. • Implement, to the extent feasible and practicable, speed limits and limits on hours of operation of rail and transit systems, where such limits may reduce noise impacts. • Utilize techniques such as grade separation, buffer zones, landscaped berms, dense plantings, sound walls, reduced-noise paving materials, and traffic calming measures. • Maximize the distance of new route alignments from sensitive receptors. • Locate transit-related passenger stations, central maintenance facilities, decentralized maintenance facilities, and electric substations away from sensitive receptors to the maximum extent feasible. • Use land use measures such as zoning, site design, and buffers to ensure that future development is noise compatible with adjacent transportation facilities and land uses.	Ongoing over the life of the plan	Lead Agency

Mitigation Measure	Mitigation Monitoring Timing	Responsible Monitoring Entity
MM-NOISE-4(a): Consistent with the provisions of Section 15091 of the *State CEQA Guidelines*, TCAG has identified mitigation measures capable of avoiding or reducing significant vibration impacts that are within the jurisdiction and responsibility of local agencies (land use projects) and implementing agencies (transportation projects). Where the Lead Agency has identified that a project has the potential for significant effects, the Lead Agency can and should consider mitigation measures to avoid or reduce vibration impacts. Such measures include, but are not limited to, the following: • Retain a structural engineer or other appropriate professional to determine threshold levels of vibration and cracking that could damage any adjacent historic or other structure subject to damage, and design means and construction methods to not exceed the thresholds. • Where possible, smooth pavement to eliminate the discontinuities. • Where feasible, use soil mix wall for excavation. • Incorporate a comprehensive construction vibration specification into all construction bid documents. • Require contractor to assess potential for damage to buildings within 100 feet of a tunnel boring. • Require contractor to perform a physical survey to document existing condition of a building that might incur damage. • If pile driving and/or other vibration-generating construction activities are to occur within 60 feet of a historic structure whose integrity would be impaired by exceeding the vibration threshold for historic structures, implement measures to reduce vibration impacts, including but not limited to: – Retain a structural engineer or other appropriate professional to determine threshold levels of vibration and cracking that would damage any historic structure, and design construction methods to not exceed the thresholds. – Require groundborne vibration monitoring of nearby historic structures. Implement monitoring program to detect ground settlement or lateral movement of structures in the vicinity of pile-driving activities and identify corrective measures to be taken should monitored vibration levels indicate the potential for vibration damage to historic structures. – Require contractor to assess potential damage to buildings within 200 feet of areas where excavation requires the use of driven piles either by impact or vibratory methods. Smooth pavement to eliminate discontinuities that cause vibration from vehicle operations.	Ongoing over the life of the plan	Lead Agency

Mitigation Measure	Mitigation Monitoring Timing	Responsible Monitoring Entity
Impact – Population, Housing, and Employment		
MM-POP-1(a): Consistent with the provisions of Section 15091 of the *State CEQA Guidelines*, TCAG has identified mitigation measures capable of avoiding or reducing significant effects of population growth that are in the jurisdiction and responsibility of local agencies (land use projects) and implementing agencies (transportation projects).. Where the Lead Agency has identified that a project has the potential for significant effects, the Lead Agency can and should consider mitigation measures. Such measures include but are not limited to the following: • Review capacities of available urban infrastructure and augment capacities as needed to accommodate demand in locations where growth is desirable and encouraged by the SCS (primarily TPAs, where applicable). • When General Plans and other local land use regulations are amended or updated, use the most recent growth projections and RHNA allocation plan.	Ongoing over the life of the plan	Lead Agency
MM-POP-2(a) Consistent with the provisions of Section 15091 of the *State CEQA Guidelines*, TCAG has identified mitigation measures capable of avoiding or reducing the significant effects related to displacement that are within the jurisdiction and responsibility of local agencies (land use projects) and implementing agencies (transportation projects). Where the Lead Agency has identified that a project has the potential for significant effects, the Lead Agency can and should consider mitigation measures to: (1) minimize the displacement of existing housing, people, and jobs; and (2) to ensure compliance with local jurisdiction's Housing Elements and local land use regulations, as applicable and feasible. Such measures may include but are not limited to the following: • Evaluate alternate route alignments, transportation facilities, and alternative site locations for development projects that minimize the displacement of homes and businesses. Use an iterative design and impact analysis where impacts to homes or businesses are involved to minimize the potential of impacts on housing and displacement of people. • Prioritize the use of existing ROWs, wherever feasible. • Develop a construction schedule that minimizes potential neighborhood deterioration and protracted waiting periods between right-of-way acquisition and construction.	Ongoing over the life of the plan	Lead Agency

Mitigation Measure	Mitigation Monitoring Timing	Responsible Monitoring Entity
Impact – Recreation		
MM-REC-2(a): Consistent with the provisions of Section 15091 of the *State CEQA Guidelines*, TCAG has identified mitigation measures capable of avoiding or reducing the significant effects on the integrity of recreation facilities, particularly neighborhood parks in the vicinity of TPAs that are within the jurisdiction and responsibility of local agencies (land use projects) and implementing agencies (transportation projects).. Where the Lead Agency has identified that a project has the potential for significant effects, the Lead Agency can and should consider mitigation measures capable of avoiding or reducing significant impacts on the use of existing neighborhood and regional parks or other recreational facilities to ensure compliance with county and city general plans and the Quimby Act,. Such measures include but are not limited to the following: • Prior to the issuance of permits, where projects require the construction or expansion of recreational facilities or the payment of equivalent Quimby fees, consider increasing the accessibility to natural areas and lands for outdoor recreation, in coordination with local and regional recreational planning and/or responsible management agencies. • Prior to the issuance of permits, where projects require the construction or expansion of recreational facilities or the payment of equivalent Quimby fees, encourage measures which reduce recreational facility costs and make better use of existing recreational facilities, using strategies such as: – Utilizing "green" development techniques; – Promoting water-efficient land use and development; – Encouraging multiple uses; and – Including trail systems and trail segments identified in General Plans. • Prior to the issuance of permits, where construction and operation of projects would require the acquisition or development of protected recreation lands, expand existing neighborhood parks or develop new neighborhood parks such that there is no net decrease in acres of neighborhood park area available per capita in the area.	Ongoing over the life of the plan	Lead Agency
Impact- Transportation and Traffic		
MM-TR-1(a): TCAG shall pursue funding for projects and programs, beyond the currently financially and institutionally feasible measures included in the 2018 RTP/SCS to further improve VMT/capita.	Ongoing over the life of the plan	TCAG

Mitigation Measure	Mitigation Monitoring Timing	Responsible Monitoring Entity
MM-TR-1(b): Consistent with the provisions of Section 15091 of the *State CEQA Guidelines*, TCAG has identified mitigation measures capable of avoiding or reducing the potential for conflicts with the established measures of effectiveness for the performance of the circulation system that are within the jurisdiction and responsibility of local agencies (land use projects) and implementing agencies (transportation projects). Where the Lead Agency has identified that a project has the potential for significant effects, the Lead Agency can and should consider mitigation measures to minimize VMT, including compliance with 2018 RTP/SCS policies, and other adopted local plans and policies, as applicable and feasible. Such measures include, but are not limited to, the following: General: • Institute teleconferencing, telecommute and/or flexible work hour programs to reduce unnecessary employee transportation. • Create a ride-sharing program by designating a certain percentage of parking spaces for ride sharing vehicles, designating adequate passenger loading and unloading for ride sharing vehicles, and providing a web site or message board for coordinating rides. • Provide a vanpool for employees. • Provide a Transportation Demand Management (TDM) plan containing strategies to reduce on-site parking demand and single occupancy vehicle travel. The TDM should include strategies to increase bicycle, pedestrian, transit, and carpools/vanpool use, including: • Inclusion of additional bicycle parking, shower, and locker facilities that exceed the requirement Construction of bike lanes per the prevailing Bicycle Master Plan (or other similar document) • Signage and striping onsite to encourage bike safety • Installation of pedestrian safety elements (such as cross walk striping, curb ramps, countdown signals, bulb outs, etc.) to encourage convenient crossing at arterials • Installation of amenities such as lighting, street trees, trash and any applicable streetscape plan.	Ongoing over the life of the plan	Lead Agency

Mitigation Measure	Mitigation Monitoring Timing	Responsible Monitoring Entity
MM-TR-1(b) (continued) • Direct transit sales or subsidized transit passes • Guaranteed ride home program • Pre-tax commuter benefits (checks) • On-site car-sharing program (such as City Car Share, Zip Car, etc.) • On-site carpooling program • Distribution of information concerning alternative transportation options • Parking spaces sold/leased separately • Parking management strategies; including shared parking spaces. • Promote ride sharing programs e.g., by designating a certain percentage of parking spaces for high-occupancy vehicles, providing larger parking spaces to accommodate vans used for ride-sharing and designating adequate passenger loading and unloading and waiting areas. • Encourage bicycling to transit facilities by providing additional bicycle parking, locker facilities, and bike lane access to transit facilities when feasible. • Encourage the use of public transit systems by enhancing safety and cleanliness on vehicles and in and around stations, providing shuttle service to public transit, offering public transit incentives and providing public education and publicity about public transportation services. • Encourage bicycling and walking by incorporating bicycle lanes into street systems in regional transportation plans, new subdivisions, and large developments, creating bicycle lanes and walking paths directed to the location of schools and other logical points of destination and provide adequate bicycle parking, and encouraging commercial projects to include facilities on-site to encourage employees to bicycle or walk to work. • Build or fund a major transit stop within or near transit development • Work with the school districts to improve pedestrian and bike access to schools and to restore or expand school bus service using lower-emitting vehicles. • Provide information on alternative transportation options for consumers, residents, tenants and employees to reduce transportation-related emissions. Transportation Project Selection: • Give priority to transportation projects that would contribute to a reduction in vehicle miles traveled per capita • Separate sidewalks whenever possible, on both sides of all new street improvement projects, except where there are severe topographic or natural resource constraints.		

Mitigation Measure	Mitigation Monitoring Timing	Responsible Monitoring Entity
MM-TR-1(b) (continued) Public Involvement: • Carry out a comprehensive public involvement and input process that provides information about transportation issues, projects, and processes to community members and other stakeholders, especially to those traditionally underserved by transportation services. Transit and Multimodal Impact Fees: • Assess transit and multimodal impact fees on new developments to fund public transportation infrastructure, bicycle infrastructure, pedestrian infrastructure and other multimodal accommodations • Implement traffic and roadway management strategies to improve mobility and efficiency, and reduce associated emissions. Arterial Traffic Management: • Modify arterial roadways to allow more efficient bus operation, including bus lanes and signal priority/preemption where necessary. • Implement and support employer and commercial trip reduction programs. • Support bicycle use as a mode of transportation by enhancing infrastructure to accommodate bicycles and riders, and providing incentives. • Establish standards for new development projects to support bicycle use, and require new development projects to include bicycle facilities, as appropriate with the new land use are as follows: Bicycle and Pedestrian Trails: • Establish a network of multi-use trails to facilitate safe and direct off-street bicycle and pedestrian travel, and will provide bike racks along these trails at secure, lighted locations. Bicycle Safety Program: • Develop and implement a bicycle safety educational program to teach drivers and riders the laws, riding protocols, routes, safety tips, and emergency maneuvers. • Pursue and provide enhanced funding for bicycle and pedestrian facilities and access projects. Bicycle Parking: • Adopt bicycle parking standards that ensure bicycle parking sufficient to accommodate 5 to 10 percent of projected use at all public and commercial facilities, and at a rate of at least one per residential unit in multiple-family developments (suggestion: check language with League of American Bicyclists).		

Mitigation Measure	Mitigation Monitoring Timing	Responsible Monitoring Entity
MM-TR-1(b) (continued) Vehicle Parking: • Reduce the available parking spaces for private vehicles while increasing parking spaces for shared vehicles, bicycles, and other alternative modes of transportation, as appropriate; • Eliminate or reduce minimum parking requirements for new buildings; • "Unbundle" parking (require that parking is paid for separately and is not included in the base rent for residential and commercial space); • Use parking pricing to discourage private vehicle use, especially at peak times; • Encourage shared parking programs in mixed-use and transit-oriented development areas; • Create parking benefit districts, which invest meter revenues in pedestrian infrastructure and other public amenities; • Establish performance pricing of street parking, so that it is expensive enough to promote frequent turnover and keep 15 percent of spaces empty at all times; • Encourage special event center operators to advertise and offer discounted transit passes with event tickets; • Encourage special event center operators to advertise and offer discount parking incentives to carpooling patrons, with four or more persons per vehicle for on-site parking; and • Promote the use of bicycles by providing space for the operation of valet bicycle parking service. • Establish policies and programs to reduce onsite parking demand and promote ride-sharing and public transit at large events, including: • Promote the use of peripheral parking by increasing on-site parking rates and offering reduced rates for peripheral parking; • Encourage special event center operators to advertise and offer discounted transit passes with event tickets; • Encourage special event center operators to advertise and offer discount parking incentives to carpooling patrons, with four or more persons per vehicle for on-site parking; • Promote the use of bicycles by providing space for the operation of valet bicycle parking service. Parking "Cash-out" Program: • Require new office developments with more than 50 employees to offer a Parking "Cash-out" Program to discourage private vehicle use. Pedestrian and Bicycle Promotion: • Work with local community groups and downtown business associations to organize and publicize walking tours and bicycle events, and to encourage pedestrian and bicycle modes of transportation.		

Mitigation Measure	Mitigation Monitoring Timing	Responsible Monitoring Entity
MM-TR-2(a): TCAG shall inform jurisdictions with projected LOS E and F roadway segments under the Plan of the potential need to develop a Deficiency Plan under the TCAG CMP TCAG shall work with these agencies to identify and implement changes that would increase use of alternative transportation and other means to reduce congestion.	Ongoing over the life of the plan	TCAG
MM-TR-2(b): Consistent with the provisions of Section 15091 of the *State CEQA Guidelines*, TCAG has identified mitigation measures, capable of avoiding conflict with an applicable congestion management program that are within the jurisdictions of local agencies (land use projects) and implementing agencies (transportation projects), , Where the Lead Agency has identified that a project has the potential for significant effects, the Lead Agency can and should consider mitigation measures to reduce congestion, ensuring compliance with the adopted Congestion Management Plan, and other adopted local plans and policies, as applicable and feasible. These measure include but are not limited to the following: • Encourage policies that prioritize system management, and increase telecommute opportunities, including investment in non-motorized transportation and discouraging private vehicle use, and maximizing the use of alternative transportation: – Advocate for a regional, market-based system to price or charge for auto trips during peak hours. – Ensure that new developments incorporate both local and regional transit measures into the project design that promote the use of alternative modes of transportation. – Coordinate controlled intersections so that traffic passes more efficiently through congested areas. Where traffic signals or streetlights are installed, require the use of LED technology. – Encourage the use of car-sharing programs. Accommodations for such programs include providing parking spaces for the car-share vehicles at convenient locations accessible by public transportation. – Reduce vehicle hours of delay (VHD), especially daily heavy-duty truck vehicle hours of delay, through goods movement capacity enhancements, system management, increasing rideshare and work-at-home opportunities to reduce demand on the transportation system, investments in non-motorized transportation, maximizing the benefits of the land use-transportation connection and key transportation investments targeted to reduce heavy-duty truck delay.	Ongoing over the life of the plan	Lead Agency

Mitigation Measure	Mitigation Monitoring Timing	Responsible Monitoring Entity
MM TR-2(b) (continued) • Determine traffic management strategies to reduce, to the maximum extent feasible, traffic congestion and the effects of parking demand by construction workers during construction of projects. Develop a construction management plan that include at least the following items and requirements: – A set of comprehensive traffic control measures, including scheduling of major truck trips and deliveries to avoid peak traffic hours, detour signs if required, lane closure procedures, signs, cones for drivers, and designated construction access routes. – Notification procedures for adjacent property owners and public safety personnel regarding when major deliveries, detours, and lane closures will occur. – Location of construction staging areas for materials, equipment, and vehicles at an approved location that minimizes congestion. – A process for responding to, and tracking, complaints pertaining to construction activity, including identification of an onsite complaint manager. The manager shall determine the cause of the complaints and shall take prompt action to correct the problem. The Lead Agency shall be informed who the Manager is prior to the issuance of the first permit. – Provision for accommodation of pedestrian flow. – As necessary, provision for parking management and spaces for all construction workers to ensure that construction workers do not park in on street spaces. – No materials or equipment shall be stored on the traveled roadway at any time. – Promote "least polluting" ways to connect people and goods to their destinations. – Create an interconnected transportation system that allows a shift in travel from private passenger vehicles to alternative modes, including public transit, ride sharing, car sharing, bicycling and walking, by incorporating the following: – Ensure transportation centers are multi-modal to allow transportation modes to intersect; – Provide adequate and affordable public transportation choices, including expanded bus routes and service, as well as other transit choices such as shuttles, light rail, and rail; – To the extent feasible, extend service and hours of operation to underserved arterials and population centers or destinations such as colleges;		

Mitigation Measure	Mitigation Monitoring Timing	Responsible Monitoring Entity
MM TR-2(b) (continued) – Focus transit resources on high-volume corridors and high-boarding destinations such as colleges, employment centers and regional destinations; – Coordinate schedules and routes across service lines with neighboring transit authorities; – Support programs to provide "station cars" for short trips to and from transit nodes (e.g., neighborhood electric vehicles); – Study the feasibility of providing free transit to areas with residential densities of 15 dwelling units per acre or more, including options such as removing service from less dense, underutilized areas to do so; – Provide safe and convenient access for pedestrians and bicyclists to, across, and along major transit priority streets; – Use park-and-ride facilities to access transit stations only at ends of regional transit ways or where adequate feeder bus service is not feasible. • Upgrade and maintain transit system infrastructure to enhance public use, including: – Ensure transit stops and bus lanes are safe, convenient, clean and efficient; – Ensure transit stops have clearly marked street-level designation, and are accessible; – Ensure transit stops are safe, sheltered, benches are clean, and lighting is adequate; – Place transit stations along transit corridors within mixed-use or transit-oriented development areas at intervals of three to four blocks, or no less than one-half mile. • Enhance customer service and system ease-of-use, including: – Develop a Regional Pass system to reduce the number of different passes and tickets required of system users; – Implement "Smart Bus" technology, using GPS and electronic displays at transit stops to provide customers with "real-time" arrival and departure time information (and to allow the system operator to respond more quickly and effectively to disruptions in service); – Investigate the feasibility of an on-line trip-planning program.		

Mitigation Measure	Mitigation Monitoring Timing	Responsible Monitoring Entity
MM TR-2(b) (continued) • Prioritize transportation funding to support a shift from private passenger vehicles to transit and other modes of transportation, including: – Give funding preference to improvements in public transit over other new infrastructure for private automobile traffic; – Before funding transportation improvements that increase roadway capacity and VMT, evaluate the feasibility and effectiveness of funding projects that support alternative modes of transportation and reduce VMT, including transit, and bicycle and pedestrian access. • Support voluntary, employer-based trip reduction programs, including: – Provide assistance to regional and local ridesharing organizations; – Advocate for legislation to maintain and expand incentives for employer ridesharing programs; – Require the development of Transportation Management Associations for large employers and commercial/ industrial complexes; – Provide public recognition of effective programs through awards, top ten lists, and other mechanisms. • Implement a "guaranteed ride home" program for those who commute by public transit, ride-sharing, or other modes of transportation, and encourage employers to subscribe to or support the program. • Encourage and utilize shuttles to serve neighborhoods, employment centers and major destinations. • Create a free or low-cost local area shuttle system that includes a fixed route to popular tourist destinations or shopping and business centers. • Work with existing shuttle service providers to coordinate their services. • Facilitate employment opportunities that minimize the need for private vehicle trips, including: – Amend zoning ordinances and the Development Code to include live/work sites and satellite work centers in appropriate locations; – Encourage telecommuting options with new and existing employers, through project review and incentives, as appropriate.		

Mitigation Measure	Mitigation Monitoring Timing	Responsible Monitoring Entity
Impact – Energy		
MM-EN-1(a): Consistent with the provisions of Section 15091 of the *State CEQA Guidelines*, TCAG has identified mitigation measures capable of avoiding or reducing the significant effects of increased energy consumption that are in the jurisdiction and responsibility of local agencies (land use projects). Where the Lead Agency has identified that a project has the potential for significant effects, the Lead Agency can and should consider mitigation measures to reduce energy usage, ensuring compliance with CALGreen, local building codes, and other applicable laws and regulations governing residential building standards, as applicable and feasible. Such measures include but are not limited to the following: • Integrate green building measures consistent with CALGreen (California Building Code Title 24) into project design including: • Use energy efficient materials in building design, construction, rehabilitation, and retrofit. • Install energy-efficient lighting, heating, and cooling systems (cogeneration); water heaters; appliances; equipment; and control systems. • Reduce lighting, heating, and cooling needs by taking advantage of light colored roofs, trees for shade, and sunlight. • Incorporate passive environmental control systems that account for the characteristics of the natural environment. • Use high-efficiency lighting and cooking devices. • Incorporate passive solar design. • Use high-reflectivity building materials and multiple glazing. • Prohibit gas-powered landscape maintenance equipment. – Install electric vehicle charging stations. – Reduce wood burning stoves or fireplaces. • Provide bike lanes accessibility and parking at residential developments.	Ongoing over the life of the plan	Lead Agency

Mitigation Measure	Mitigation Monitoring Timing	Responsible Monitoring Entity
Impact – Wastewater		
MM-WW-1(a): Consistent with the provisions of Section 15091 of the *State CEQA Guidelines*, TCAG has identified mitigation measures capable of avoiding or reducing the significant impacts on wastewater system capacity that are in the jurisdiction and responsibility of local agencies (land use projects) Where the Lead Agency has identified that a project has the potential for significant effects, the Lead Agency can and should consider mitigation measures to provide adequate wastewater system capacity. Such measures include but are not limited to the following: • Work with wastewater service providers to assure that wastewater system capacity is available to serve projected demand. • Work with wastewater service providers implement mitigation measures to avoid or reduce significant environmental impacts associated with the construction of new or expanded wastewater facilities.	Ongoing over the life of the plan	Lead Agency

Mitigation Measure	Mitigation Monitoring Timing	Responsible Monitoring Entity
Impact – Solid Waste		
MM-SW-1: Consistent with the provisions of Section 15091 of the *State CEQA Guidelines*, TCAG has identified mitigation measures capable of avoiding or reducing the significant effects to landfill capacity that are within the responsibility of local agencies (land use projects) and implementing agencies (transportation projects). Where the Lead Agency has identified that a project that has the potential for significant effects, the Lead Agency can and should consider mitigation measures to minimize solid waste generation to ensure compliance with the County's Integrated Waste Management Plan. Such measures include but are not limited to the following: • Encourage project sponsors to integrate green building measures into project design such as those identified in the U.S. Green Building Council's Leadership in Energy and Environmental Design, CALGreen (California Building Code Title 24), energy Star Homes, Green Point Rated Homes, and the California Green Builder Program. These measures could include the following: – Reuse and minimization of construction and demolition (C&D) debris and diversion of C&D waste from landfills to recycling facilities. – Inclusion of a waste management plan that promotes maximum C&D diversion. – Source reduction through (1) use of materials that are more durable and easier to repair and maintain, (2) design to generate less scrap material through dimensional planning, (3) increased recycled content, (4) use of reclaimed materials, and (5) use of structural materials in a dual role as finish material (e.g., stained concrete flooring, unfinished ceilings, etc.). – Reuse of existing structure and shell in renovation projects. – Design for deconstruction without compromising safety. – Design for flexibility through the use of moveable walls, raised floors, modular furniture, moveable task lighting and other reusable building components. – Development of indoor recycling program. – Require the reuse and recycle of construction and demolition waste (including, but not limited to, soil, vegetation, concrete, lumber, metal, and cardboard). – Integrate reuse and recycling into residential industrial, institutional and commercial projects. – Provide recycling opportunities for residents, the public, and tenant businesses.	Ongoing over the life of the plan	Lead Agency

Mitigation Measure	Mitigation Monitoring Timing	Responsible Monitoring Entity
Impact – Water Resources		
MM-W-1(a): Consistent with the provisions of Section 15091 of the *State CEQA Guidelines,* TCAG has identified mitigation measures capable of avoiding or reducing significant impacts on water quality o related to violations of water quality standards or waste discharge requirements that are within the jurisdiction and responsibility of local agencies (land use projects) and implementing agencies (transportation projects). Where the Lead Agency has identified that a project has the potential for significant effects, the Lead Agency can and should consider mitigation measures to ensure compliance with all applicable laws, regulations, and health and safety standards set forth by regulatory agencies responsible for regulating water quality in a manner that conforms with applicable water quality standards or waste discharge requirements, as applicable and feasible. Such measures include but are not limited to the following: • Complete, and have approved, a SWPPP prior to initiation of construction. • Implement BMPs to reduce the peak stormwater runoff from the project site to the maximum extent practicable. • Comply with the Caltrans stormwater discharge permit as applicable; and identify and implement BMPs to manage site erosion, wash water runoff, and spill control. • Ensure adequate capacity of the surrounding stormwater system to support stormwater runoff from projects. • Install structural water quality control features, such as drainage channels, detention basins, oil and grease traps, filter systems, and vegetated buffers, to prevent pollution of adjacent water resources by polluted runoff where required by applicable urban stormwater runoff discharge permits, on new facilities. • Provide structural stormwater runoff treatment consistent with the applicable municipal stormwater permit. Where Caltrans is the operator, the statewide permit applies. • Provide and implement operational BMPs for street cleaning, litter control, and catch basin cleaning to prevent water quality degradation in compliance with applicable stormwater runoff discharge permits; and ensure treatment controls are in place as early as possible, such as during the acquisition process for rights-of-way, not just later during the facilities design and construction phase. • Incorporate, as appropriate, treatment and control features such as detention basins, infiltration strips, porous paving, and other features to control surface runoff, and facilitate groundwater recharge into the design of new transportation projects early on in the process, to ensure that adequate acreage and elevation contours are provided during the right-of-way acquisition process.	Ongoing over the life of the plan	Lead Agency

Mitigation Measure	Mitigation Monitoring Timing	Responsible Monitoring Entity
MM-W-1(a): (continued) • Design projects to maintain volume of runoff, where any downstream receiving water body has not been designed and maintained to accommodate the increase in flow velocity, rate, and volume without impacting the water's beneficial uses. Pre-project flow velocities, rates, and volumes should not be exceeded. This applies not only to increases in stormwater runoff from the project site, but also to hydrologic changes induced by floodplain encroachment. Projects should not cause or contribute to conditions that degrade the physical integrity or ecological function of any downstream receiving waters. • Provide culverts and facilities that do not increase the flow velocity, rate, or volume and/or acquiring sufficient storm drain easements that accommodate an appropriately vegetated earthen drainage channel. • Upgrade stormwater drainage facilities to accommodate any increased runoff volumes. These upgrades may include the construction of detention basins or structures that will delay peak flows and reduce flow velocities, including expansion and restoration of wetlands and riparian buffer areas. System designs shall be completed to eliminate increases in peak flow rates from current levels. • Encourage Low Impact Development (LID) and incorporation of natural spaces that reduce, treat, infiltrate and manage stormwater runoff flows in all new developments, where practical and feasible.		

Mitigation Measure	Mitigation Monitoring Timing	Responsible Monitoring Entity
MM-W-2(a): Consistent with the provisions of the Section 15091 of the *State CEQA Guidelines*, TCAG has identified mitigation measures capable of avoiding or reducing the significant impacts to groundwater resources that are within the jurisdiction and authority of local agencies (land use projects) and implementing agencies (transportation projects). Where the Lead Agency has identified that a project has the potential for significant effects, the Lead Agency can and should consider mitigation measures to ensure compliance with applicable laws, regulations, and health and safety standards set forth by federal, state, regional, and local authorities that regulate groundwater management, consistent with the provisions of the Sustainable Groundwater Management Act and implementing regulations, including recharge in a manner that conforms with standards for sustainable management of groundwater basins, as applicable and feasible. Such measures may include the following, or other comparable measures: • For projects requiring continual dewatering facilities, implement monitoring systems and long-term administrative procedures to ensure proper water management that prevents degrading of surface water and minimizes, to the greatest extent possible, adverse impacts on groundwater for the life of the project, Construction designs shall comply with appropriate building codes and standard practices, including the Uniform Building Code. • Maximize, where practical and feasible, permeable surface area in urbanized areas to protect water quality, reduce flooding, allow for groundwater recharge, and preserve wildlife habitat. . • Avoid designs that require continual dewatering where feasible. • Avoid construction and siting on groundwater recharge areas, to prevent conversion of those areas to impervious surface. • Reduce hardscape and impervious surfaces to the extent feasible to facilitate groundwater recharge. • Ensure that bioswales are installed, where feasible, to facilitate groundwater recharge using stormwater runoff from the project site.	Ongoing over the life of the plan	Lead Agency

Mitigation Measure	Mitigation Monitoring Timing	Responsible Monitoring Entity
MM-W-8(a): Consistent with the provisions of Section 15091 of the *State CEQA Guidelines*, TCAG has identified mitigation measures capable of avoiding or reducing the significant impacts of locating structures that would impede or redirect flood flows in a 100-year flood hazard area that are within the jurisdiction and authority of implementing agencies (transportation projects) . Where the Lead Agency has identified that a project has the potential for significant effects, the Lead Agency can and should consider mitigation measures to minimize the impacts of placing structures in floodplains. Such measures include but are not limited to the following: • Comply with Executive Order 11988 on Floodplain Management, which requires avoidance of incompatible floodplain development, and restoration and preservation of the natural and beneficial floodplain values. • Ensure that all roadbeds for new highway and rail facilities be elevated at least one foot above the 100-year base flood elevation. Since alluvial fan flooding is not often identified on FEMA flood maps, the risk of alluvial fan flooding should also be evaluated and projects should be sited to avoid alluvial fan flooding. Delineation of floodplains and alluvial fan boundaries should attempt to account for future hydrologic changes caused by global climate change	Ongoing over the life of the plan	Lead Agency
MM-W-9(a): Consistent with the provisions of Section 15091 of the *State CEQA Guidelines*, TCAG has identified mitigation measures capable of avoiding or reducing the significant impacts on water supplies from existing entitlements and resources requiring new or expanded services that are in the jurisdiction and responsibility of local agencies (land use projects) and implementing agencies (transportation projects).. Where the Lead Agency has identified that a project has the potential for significant effects, the Lead Agency can and should consider mitigation measures to minimize water demands and increase water supplies, ensuring compliance with prevailing state, regional, and local government plans, laws, and policies regarding water conservation and efficiency.. Such measures include but are not limited to the following: • Reduce exterior consumptive uses of water in public areas, and promote reductions in private homes and businesses, by shifting to drought-tolerant native landscape plantings (xeriscaping), using weather-based irrigation systems, educating other public agencies about water use, and installing related water pricing incentives. • Use drought-resistant landscaping options where applicable and feasible and provide information on where these can be purchased. • Use reclaimed water, especially in median landscaping and hillside landscaping, should be implemented where feasible. • Install drip or other water-conserving or weather-based irrigation systems for landscaping. • Implement water conservation best practices such as low-flow toilets, water-efficient clothes washers, water system audits, and leak detection and repair.	Ongoing over the life of the plan	Lead Agency

Tulare County Association of Governments

2018 Regional Transportation Plan/ Sustainable Communities Strategy SCH # 20171010374

Draft Program Environmental Impact Report

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May 2018

TULARE COUNTY ASSOCIATION OF GOVERNMENTS

2018 REGIONAL TRANSPORTATION PLAN / SUSTAINABLE COMMUNITIES STRATEGY

DRAFT PROGRAM ENVIRONMENTAL IMPACT REPORT

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1.0 INTRODUCTION

1.1 PROPOSED PROJECT AND EIR BACKGROUND

The Tulare County Association of Governments (TCAG) prepared this Program Environmental Impact Report (Program EIR), pursuant to the California Environmental Quality Act (CEQA), for the 2018 Regional Transportation Plan/Sustainable Communities Strategy (2018 RTP/SCS, Plan, or proposed Project). The 2018 RTP/SCS is a long-range plan that provides:

1. a blueprint to help achieve a coordinated regional transportation system by creating a vision for transportation investment throughout the region and identifying regional transportation planning policies and projects (constrained by available financial resources) to address mobility needs;

2. a description of planning assumptions and growth trends for regional growth and future needs for travel and goods movement;

3. a Sustainable Communities Strategy (SCS) that identifies planning and land use strategies as well as an illustrative development pattern that would reduce GHG emissions in accordance with targets identified by the California Air Resources Board in response to state commitments (including AB 32, SB 32, SB 375);

4. a discussion of financial constraints; and

5. goals, policies and performance indicators necessary to increase mobility and meet GHG reduction targets.

This Program EIR (PEIR) for the 2018 RTP/SCS serves as an informational document to inform decision-makers, responsible agencies, and the public of the environmental consequences of approving the Project. The PEIR includes mitigation measures designed to help avoid or minimize identified significant environmental impacts.

Individual transportation projects are identified in the 2018 RTP/SCS; this PEIR analyzes environmental impacts of these projects from a regional perspective and in a programmatic manner. As such, this PEIR does not analyze project-specific impacts of these individual projects. Project-specific analysis would be performed by the appropriate implementing agency for each individual project prior to approval of each project. Project-specific planning and eventual implementation as appropriate, undertaken by each implementing agency will depend on a number of factors, including: policies, programs and projects adopted at the local level; restrictions on federal, state, and local transportation funds; the results of feasibility studies and technical analyses for particular corridors; and further environmental review of proposed projects.

TCAG has developed a land use pattern in the SCS portion of the RTP. TCAG does not have land use approval authority and the land use pattern identified in the SCS does not supersede local land use agencies' authorities over land use and development. This PEIR analyzes the SCS land use pattern as a part of the analysis of the 2018 RTP/SCS. This PEIR also analyzes alternative land use patterns (in **Section 5.0 Alternatives**).

1.2 PURPOSE AND LEGAL AUTHORITY

Pursuant to the federal transportation planning law, including the Fixing America's Surface Transportation Act (FAST Act), and state transportation planning law, including SB 375, as a Metropolitan Planning Organization (MPO) TCAG must prepare a regional transportation plan for its metropolitan planning area every four years to ensure that the plan adequately addresses future transportation needs and meets state greenhouse gas (GHG) reduction targets. Pursuant to SB 375, TCAG must prepare an SCS to meet GHG reduction targets identified by the California Air Resources Board.

1.2.1 2018 RTP/SCS – Transportation Projects

The 2018 RTP/SCS is generally an update to the 2014 RTP/SCS. The 2018 RTP/SCS defines the region's mobility needs and issues through 2042, sets forth an action plan of projects and programs to address the needs consistent with the adopted policies, and documents the financial resources needed to implement the plan. The 2018 RTP/SCS is a 24-year blueprint that establishes a set of regional transportation goals, policies, and actions intended to guide development of the planned multimodal transportation systems in Tulare County. It has been developed through a continuing, comprehensive, and cooperative planning process, and provides for effective coordination between local, regional, state, and federal agencies. Regional transportation improvement projects proposed to be funded, in whole or in part, in the state transportation improvement program must be included in an adopted RTP. TCAG does not implement, nor have approval authority over, individual transportation projects included in the 2018 RTP/SCS; individual transportation projects are implemented by local jurisdictions and other agencies (in general throughout this PEIR these agencies implementing specific transportation projects are referred to collectively as implementing agencies).

The 2018 RTP/SCS includes the following key components:

- Policy Element
  - Public outreach
  - Goals, objectives and policies
  - Public health

- Sustainable Communities Strategy
  - Growth forecast
  - Land use scenarios
  - Housing need
- Action Element
  - Planning assumptions
  - Social impacts and environmental justice
  - Constrained and unconstrained project costs
- Financial Element
- Goods Movement Chapter
- Valleywide Chapter

1.2.2 2018 RTP/SCS

The 2018 RTP/SCS includes an SCS prepared in accordance with SB 375. SB 375 helps achieve state GHG reduction targets established by AB 32 and the more recent SB 32. The requirement of an SCS under SB 375 more closely ties regional transportation planning with land use and regional housing planning under the Regional Housing Needs Allocation (RHNA) process. The SCS provides regional-scale planning for land use and transportation, with the goal of reducing the amount that people have to drive and thereby reducing associated greenhouse gases (GHGs). The SCS is required to (California Code §65080(b)(2)(B)):

- use the most recent planning assumptions considering local general plans and other factors;
- identify the general location of uses, residential densities, and building intensities within the region;
- identify areas within the region sufficient to house all the population of the region;
- identify areas within the region sufficient to house an eight-year projection of the regional housing need;
- identify a transportation network to service the transportation needs for the region;
- gather and consider the best practically available scientific information regarding resource areas and farmland in the region;
- consider the state housing goals;

- set forth a forecasted development pattern for the region, which together with the transportation network and transportation policies, achieves regional GHG reduction targets; and
- comply with Section 176 of the federal Clean Air Act which requires conformity with the State Implementation Plan.

1.3 SCOPE AND METHODOLOGY

This PEIR fulfills the requirements of CEQA. It is a programmatic document that provides a region-wide assessment of the significant environmental effects of implementing the programs, policies, and projects included in the 2018 RTP/SCS. A PEIR:

> *may be prepared on a series of actions that can be characterized as one large project and are related either: (1) geographically, (2) as logical parts of the chain of contemplated actions, (3) in connection with issuance of rules, regulations, plans or other general criteria to govern the conduct of a continuing program, or (4) as individual activities carried out under the same authorizing statutory or regulatory authority and having generally similar environmental effects which can be mitigated in similar ways.*[1]

This PEIR provides a regional consideration of cumulative effects and includes broad policy alternatives and program mitigation measures that are equally broad in scope. This PEIR also provides a regional scale analysis and a framework of mitigation measures for subsequent, site-specific environmental review documents prepared by lead agencies in the region as individual planning, development and transportation projects are identified, designed and move through the planning, review and decision-making process.

A PEIR may serve as a first-tier document for later CEQA review of individual projects included in the program. These project-specific CEQA reviews focus on project-specific impacts and mitigation measures, and need not repeat the analyses contained in the PEIR. As discussed by the California Supreme Court, "it is proper for a lead agency to use its discretion to focus a first-tier EIR on only the…program, leaving project-specific details to subsequent EIRs when specific projects are considered."[2]

As such, the focus of the environmental analysis in the 2018 RTP/SCS PEIR is on regional-scale and cumulative impacts of implementation of the 2018 RTP/SCS (and identified alternatives). The long-range planning horizon of more than 20 years as well as the regional scale of the RTP/SCS, necessitates that the highway, arterial goods movement, and transit projects included in the Plan (and the alternatives) be described at a conceptual level. This PEIR addresses environmental impacts at the appropriate scale and

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1 *State CEQA Guidelines* §15168

2 *In re Bay Delta* (2008) 43 Cal. 4th 1143, 1174

to the level that they can be assessed without undue speculation.[3] There is an inherent uncertainty in modeling large-scale effects so far in to the future; the modeling results represent reasonable best efforts to identify impacts. Much of the modeling is based on inputs that are estimated based on current practice; for example, in analyzing GHG emissions associated with development, energy use factors and emission rates are based on current energy consumption and emission rates. However, various regulations require (and the market place provides for) much more efficient use of energy (e.g. energy star appliances) than at present, while at the same time energy providers are required to use much larger proportions of renewable energy sources in the future resulting in lower emissions per unit energy. However, there are no revised factors currently available to estimate per capita or per household reduced energy consumption in 2042.

The degree of specificity in an EIR corresponds to the degree of specificity of the underlying activity being evaluated.[4] Also, the adequacy of an EIR is determined in terms of what is reasonably feasible, in light of factors such as the magnitude of the project at issue, the severity of its likely environmental impacts, and the geographic scope of the project.[5] The activity being evaluated in this PEIR is the long-term (through the year 2042) 2018 RTP/SCS. This Draft PEIR provides as much quantitative detail as feasible regarding the regional environmental impacts of the Plan. However, not all impacts can be feasibly and/or accurately quantitatively analyzed at a regional level and/or up to the year 2042.

State CEQA Guidelines §15146(b) provides that an EIR prepared for the adoption of a general plan should focus on the secondary environmental effects to be expected following adoption, but that the EIR need not be as detailed as one prepared for the specific construction projects that follow. Further, *State CEQA Guidelines* §15152(c) states that when a lead agency is using the tiering process for a large-scale planning approval such as a general plan, the development of detailed site-specific information may not be feasible and can be deferred to project-specific CEQA documents. Since the 2018 RTP/SCS is even broader in scope and has a longer time horizon than many general plans, such detail is not feasible or appropriate in this PEIR.

The geographic scope and complexity of the 2018 RTP/SCS played an important role in determining the appropriate level of detail to include in this PEIR. Tulare County in 2017, had an estimated population of 471,842. The Tulare region is somewhat unique in that it contains both valley and mountain sub-regions. The region's large jurisdiction and dispersed centers support agriculture, renewable energy, recreation, and other activities where abundant lands, unique geographic features and transportation linkages are

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3 *State CEQA Guidelines* §15145

4 *State CEQA Guidelines* §15146

5 *State CEQA Guidelines* §§15151, 15204(a)

important in supporting and enhancing the region's economic pursuits. As a result, the 2018 RTP/SCS is very complex, consisting of a number of transit, highway, and phased arterial projects, as well as a comprehensive SCS.

Significant environmental effects of the 2018 RTP/SCS were identified by employing multiple analytical methods, including spatial analysis; transportation, noise, land use and air quality modeling; and other quantitative qualitative techniques. Spatial analysis using Geographic Information Systems (GIS) was employed to evaluate the potential effects of the major freeway, rail and transit projects on resource categories including land use, biological resources and water resources. Transportation, noise, and air quality simulation models were used to estimate the transportation, noise, and air quality impacts. Project and policy elements of the 2018 RTP/SCS and alternatives were incorporated into the modeling analyses and the illustrative land use mapping. The specific techniques used to evaluate each potential environmental effect are described in each resource/issue section in **Section 4.0** of this PEIR.

1.4 BASELINE FOR DETERMINING SIGNIFICANCE

The PEIR must identify significant impacts that would be expected to result from implementation of the 2018 RTP/SCS. A significant impact is defined as a "substantial or potentially substantial, adverse change in the environment."[6] Significant impacts are determined by applying explicit significance criteria to compare the future Plan conditions to the existing environmental setting.[7] The existing setting is described in detail in each resource section of **Section 4.0** of this PEIR, and represents existing conditions at the time the EIR NOP was published (April 6, 2017), or other representative data to describe current regional conditions.

1.5 THRESHOLDS OF SIGNIFICANCE

CEQA gives the lead agency the responsibility and broad discretion in determining whether an adverse environmental effect identified in an EIR should be classified as "significant" or "less than significant."[8] Under Section 15064(b), "the significance of an activity may vary with the setting" and, as a result, an inflexible definition of what constitutes a significant effect is not always possible. The lead agency has discretion to set its own significance criteria, which requires the lead agency to make a policy judgment about how to distinguish impacts which are adverse, but significant, from impacts which are adverse, but not significant.[9] A lead agency may select a standard of significance based on its judgment.[10] The

6 Public Resources Code §21068

7 *State CEQA Guidelines* §15126.2(a)

8 *State CEQA Guidelines* §15064(b)

9 *Eureka Citizens for Responsible Gov't v City of Eureka (2007) 147 Cal.App.4th 357*

standards of significance used in an EIR may also rely upon policies adopted and implemented by the lead agency.[11]The criteria for determining significance are included in each resource section in Section 4.0 of this PEIR.

1.6 COMPARISON WITH THE NO PROJECT ALTERNATIVE

It is important to emphasize that the population of Tulare County will increase by 2042, with or without implementation of the 2018 RTP/SCS. Using the CEQA-required environmental baseline of existing conditions means that the impact assessment for many of the resource categories includes impacts of growth that would occur with or without the Plan. Therefore, the analysis for some resource categories also includes a direct comparison between the expected future conditions with the Plan and the expected future conditions if no Plan were adopted. This evaluation is not included in the determination of significant impacts; however, it provides a meaningful perspective on the effects of implementing the 2018 RTP/SCS.

1.7 PROPOSED 2018 RTP/SCS AND ALTERNATIVES

When considering whether or not the range of alternatives to be evaluated in an EIR is adequate, several principles apply. The "discussion of alternatives need not be exhaustive," and the requirement to discuss alternatives is "subject to a construction of reasonableness."[12] "An EIR need not consider every conceivable alternative to a project."[13]

Under CEQA, perfection is not the standard governing a lead agency's proposed range of project alternatives. Rather, in preparing an EIR, a lead agency must make an objective, good faith effort to provide information permitting a reasonable choice of alternatives that would feasibly attain most of the basic objectives of the project, while avoiding or substantially lessening the project's significant adverse environmental impacts.[14]

State CEQA Guidelines §15126.6(d) requires an EIR to include sufficient information about each alternative in order to allow meaningful evaluation, analysis, and comparison with the proposed project. An EIR must discuss alternatives to a project in its entirety, but is not required to discuss alternatives to each

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10 *Sierra Club v. City of Orange* (2008) 163 Cal.App.4th 523, 541

11 *Mira Mar Mobile Community v. City of Oceanside* (2004) 119 Cal.App.4th 477

12 *Residents Ad Hoc Stadium Committee v. Board of Trustees* (1979) 89 Cal.App.3d 274, 286.

13 *State CEQA Guidelines* §15126.6(a)

14 *California Oak Foundation v. Regents of University of California* (2010) 188 Cal.App. 4th 227, 275-276.

particular component of a project.[15] CEQA does not require an EIR to consider multiple variations on the alternatives analyzed.

This PEIR evaluates a reasonable range of alternatives for the 2018 RTP/SCS that brackets the range of potential impacts that could occur under a spectrum of changes to individual components of the RTP. These Project and alternatives are briefly described below. More detailed information about the Project is found in Section 3.0 Project Description, and more detailed information about each of the alternatives is presented in **Section 5.0 Alternatives**.

1. The Proposed 2018 RTP/SCS (also referred to as the Blueprint Scenario) provides land use and transportation recommendations to help achieve a coordinated balance of land uses and transportation such that regional GHG targets are met.

2. The No Project Alternative includes land use patterns, in accordance with existing General Plans, that are expected to occur without implementation of the SCS. The No Project Alternative includes only those transportation projects that are included in the first two years of the previously conforming transportation plan and/or Transportation Improvement Plan (TIP) or have completed environmental review by January 2018.

3. Trend Alternative. The Trend scenario shows a land use forecast based on designations from existing local agency general plans and linear trends in growth on a sub-regional basis. The projected pattern of development is generally consistent with the development pattern seen currently. However, local general plans include policies that will move away from the Trend scenario to some extent -- away from a pure extrapolation of current development types and densities. This is especially true of the most recently updated plans (Porterville, 2007; Tulare County, 2012; Tulare, Visalia, 2014). This alternative includes a modified transportation network with fewer investments (no new transit) as compared to the 2018 RTP/SCS and greater focus on maintenance of the existing network.

4. The Old Plan Alternative is an update of the adopted 2014 RTP reflecting the most recent growth distribution and transportation planning decisions and assumptions, extrapolated from the 2040 horizon year in the 2017 RTP/SCS out to 2042. This Old Plan alternative includes many of the same development pattern strategies included within the 2018 SCS, and includes all of the transportation projects in the 2014 RTP.

5. The Blueprint Plus Scenario increases density and transit in urban areas, beyond what is included in the Proposed Plan (or Blueprint Scenario). It includes a higher percentage of new growth as infill/redevelopment in urban areas; additional transportation investments are also included.

The Plan and each alternative maintain a constant total for population, households, and jobs in 2042.

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15 See *California Oak Foundation v. Regents of University of California* (2010) 188 Cal.App. 4th 227, 276-277.

1.8 REGULATORY FRAMEWORK

This PEIR provides within each environmental impact analysis a regulatory framework for the 2018 RTP/SCS. Generally relevant regulations are identified within each section. These regulations provide valuable background information and may serve to reduce impacts that could otherwise occur if the regulations were not in place. Compliance with these regulations is generally required and, as such, compliance is assumed in the analysis of potential impacts that could result from implementation of the 2018 RTP/SCS. Where regulations are advisory rather than mandatory (for example many general plan polices are not mandatory) such regulations are not assumed to be implemented. This PEIR identifies key General Plan policies from the Tulare County General Plan as well as key policies from the City of Visalia General Plan and other cities as appropriate.

1.9. GROWTH PATTERNS

The SCS can be thought of as an enhanced land use forecast which addresses two major objectives of SB 375. These objectives are (1) to meet the GHG reduction targets for automobile and light truck emissions that the California Air Resources Board has set for the region and (2) to promote better coordination of land use, transportation and housing planning at the local and regional level. The 2018 RTP/SCS encourages a more compact landform, with growth focused at transit nodes, centers and in areas designed to balance out the ratio of jobs to housing. This growth pattern results in substantially less consumption of vacant land compared to the No Project: 8,884 acres under the Plan compared to up to 10,525 acres under the No Project condition.[16] This PEIR analyzes the impacts of the RTP growth forecast in addition to impacts from the RTP transportation projects.

Analysis of the land use pattern, and alternate land use scenarios, necessarily includes analysis of the growth distribution and anticipated land use development necessary to accommodate the growth. However, because project-specific locations, densities, orientation, timing, and other site sensitive factors related to development are not specified in the Plan, TCAG cannot reliably quantify project-specific impacts from such anticipated development. TCAG can nevertheless programmatically analyze these impacts and provide a framework for mitigation measures to address them.

1.10 MITIGATION MEASURES

Lead agencies for specific projects are responsible for developing project specific mitigation measures and ensuring adherence to such mitigation measures. This PEIR identifies measures that TCAG will encourage implementing and lead agencies to implement on a project specific basis as appropriate. In

16 TCAG 2018; Envision Tomorrow Tool

general, the terms "local agency," and "implementing agency" are used throughout this PEIR to identify agencies that will act as lead agencies for different types of individual projects. Individual projects that are anticipated to occur pursuant to the 2018 RTP/SCS consist of planning projects (general plans, specific plans, climate action plans, etc.), development projects including Transit Priority Projects (TPPs) and other similar projects, and transportation projects.

In general, "local agency" is used to refer to a public agency that would propose a planning project or a public infrastructure project and/or an agency that would be lead agency for individual development projects. "Implementing agency" is used to refer to an agency responsible for implementing a project. In this PEIR, project-implementing agencies are generally those that are responsible for carrying out (reviewing, approving, constructing) transportation projects.

This EIR identifies programmatic mitigation measures to be implemented by TCAG and identifies mitigation measures that TCAG will encourage implementing and lead agencies for specific projects to include in project-specific environmental review documents as appropriate (i.e., mitigation measures that "can and should" be implemented by implementing and/or local agencies). The language of the mitigation measures indicates that implementing and local agencies can and should implement measures. It is assumed that each lead agency for specific projects would have the ability to impose and enforce these measures (i.e., that they can implement them).

Compliance with existing regulations, such as the Uniform Building Code and California Building Code, is not considered mitigation because compliance is already required. However, such regulations do reduce environmental impacts and are identified herein where appropriate, to provide additional information on the how potential impacts are reduced. In some cases, regulatory compliance is sufficient to reduce impacts to a level of less than significance. Where regulatory compliance may be sufficient to reduce environmental impacts to less than significance, this EIR so states.

As noted above, this PEIR provides a regional scale analysis and a framework of mitigation measures for subsequent, site-specific environmental review documents prepared by lead agencies within the County as individual planning, development and transportation projects are identified, design and move through the planning, review and decision-making process. As authorized by *State CEQA Guidelines* and case law (e.g., *Koster v. County of San Joaquin* (1996) 47 Cal.App.4th 29), the mitigation measures included in this PEIR are less detailed than those that would be part of a project-specific EIR and the selection of detailed mitigation measures is properly deferred to future project-specific CEQA reviews.

TCAG's role is to prioritize and facilitate transportation projects consistent with adopted procedures. For regionally significant land use and transportation projects, TCAG reviews and provides comments on

environmental documents regarding consistency with applicable TCAG planning and policy documents, including the most recent RTP/SCS. TCAG does not directly implement or control transportation projects, nor does it conduct project specific environmental review. SB 375 specifically addresses the role of metropolitan planning organizations (MPOs), such as TCAG, and it explicitly does not provide TCAG with the authority to regulate land use. Therefore, TCAG has no ability to impose or enforce land use planning decisions or mitigation measures within the authority of local jurisdictions.

1.10.1 Transportation Project Mitigation

As previously discussed, TCAG's role is to prioritize and facilitate transportation projects consistent with federal and state transportation planning law. Most individual projects in the RTP will be implemented by Caltrans, and local transportation agencies (i.e., Visalia Transit, Exeter Dial a Ride, Porterville Transit, Tulare County Transit, Dinuba Transit, and Woodlake Dial a Ride). These agencies routinely implement the types of mitigation measures identified in this PEIR during project design, CEQA review, and/or project construction. TCAG has made a preliminary determination that identified mitigation measures for transportation project impacts are generally feasible and effective based upon a region-wide assessment, and therefore, it is reasonable to expect that the measures will be implemented if applicable and feasible. However, local agencies retain the discretion to determine which mitigation measures are most applicable to each individual project and whether they are feasible under the location-specific circumstances.

1.10.2 Land Use Mitigation

TCAG has no authority to adopt local land use plans or approve local land use projects that will implement the SCS. SB 375 specifically provides that nothing in SB 375 supersedes the land use authority of cities and counties. In addition, cities and counties are not required to change their land use plans and policies, including general plans, to be consistent with an SCS.[17] Local governments are the primary agencies responsible for requiring mitigation of the impacts of land use plans and projects that implement the RTP/SCS, and TCAG has no concurrent authority to mitigate the impacts of land use plans and projects. As such, local agencies retain the discretion to consider which mitigation measures are appropriate to each individual project and whether they are feasible under the location-specific circumstances. However, TCAG has made a preliminary determination that identified mitigation measures for land use project impacts are generally feasible and effective based upon a region-wide assessment, and therefore, it is reasonable to expect that the measures will be implemented if applicable and feasible.

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17 Government Code §65080(b)(2)(K)

1.11 APPROACH TO CUMULATIVE IMPACT ANALYSIS

Section 15130 of the *State CEQA Guidelines* requires that an EIR evaluate potential environmental impacts that are individually limited but cumulatively significant. CEQA defines cumulative impacts as "two or more individual effects which, when considered together, are considerable or which compound or increase other environmental impacts" (*State CEQA Guidelines* § 15355). "'Cumulatively considerable' means that the incremental effects of an individual project are significant when viewed in connection with the effects of past projects, the effects of other current projects, and the effects of probable future projects" (*State CEQA Guidelines* § 15065(a)(3)). This means that cumulative impacts can result from individually minor but collectively significant projects taking place over a period of time.

The proposed Plan includes region-wide transportation projects and projected land use development patterns in Tulare County to accommodate projected regional growth through 2042. As such the 2018 RTP/SCS is cumulative in nature. As such, the environmental analysis included in each issue area of this PEIR is a cumulative analysis compliant with the requirements of CEQA and the *CEQA Guidelines*. Furthermore, this PEIR considers other regional-scale projects that have similar regional-scale impacts that could overlap with impacts of the 2018 RTP/SCS, for identified CEQA impact areas. Such regional scale cumulative projects include RTP/SCS plans for neighboring jurisdictions (Fresno, Kings, Kern and Inyo Counties). CEQA allows for analysis of cumulative impacts based on a list of cumulative projects or projections of growth. This PEIR uses a combination of approaches. The analysis of cumulative impacts is qualitative and based on anticipated growth in adjacent jurisdictions assuming that each jurisdiction will adopt an RTP/SCS as applicable and that growth will be consistent with Department of Finance (DOF) forecasts.

The geographic area for evaluation of cumulative impacts is the area within which impacts of the proposed Plan could overlap with impacts of other projects. In general, the areas that could experience overlapping impacts are on the periphery of the region where growth from the proposed Plan and growth in accordance with other plans could occur and result in overlapping impacts. The potential for cumulative or overlapping impacts is contemplated at basically five geographies (see **Table 1-1, Cumulative Impact Analysis Geographies**). Although there is some potential for categories to overlap, for example, impact to recreational resources occurs at the local level for local resources and at the adjacent County, San Joaquin Valley and State level (and even global level) for some resources that are used by people from far and wide. For purposes of the cumulative analysis the qualitative discussion identifies how impacts could overlap; **Table 1-1** provides an approximate guide of the primary focus of the cumulative analysis and is not intended to limit the geography of a particular cumulative analysis where impacts may overlap at a number of levels.

Table 1-1
Cumulative Impact Analysis Geographies

Tulare County	Tulare County and Adjacent Jurisdictions	San Joaquin Valley	State of California
Aesthetics	Biological Resources	Air Quality – Regional Impacts	Agriculture and Forestry Resources
Public Services – Fire, Police, Schools, Recreation (Local Facilities)	Transportation and Traffic	Cultural Resources	Public Services – Recreation (Regional Facilities)
Air Quality -- Localized Impacts			Public Utilities – Energy, Solid Waste
Land Use and Planning			Water Supply
			Greenhouse Gas Emissions
Noise			
Population and Housing			
Hydrology			

1.12 SCOPE AND CONTENT OF THE DRAFT EIR

After conducting preliminary review in accordance with Section 15060 of the *State CEQA Guidelines*, TCAG determined that a PEIR should be prepared to address the potential environmental impacts of the Plan. Following this determination, a Notice of Preparation (NOP) was prepared and circulated between April 6, 2017 and May 8, 2017 for the required 30-day review period. The purpose of an NOP is to solicit early comments from public agencies with expertise in subjects that would be discussed in the Draft EIR. The NOP and comments received during the NOP review period are contained in **Appendix 1.0** of this EIR.

This PEIR evaluates impacts at the regional level, as appropriate to a regional-scale document.

Topics evaluated in this Draft EIR have been identified based upon a preliminary review of issues, responses to the NOP received during the NOP comment period, and review of the 2018 RTP/SCS by TCAG staff and their consultants. TCAG determined through this initial review process that impacts related to the following topics are potentially significant and require assessment in this PEIR:

- Aesthetics and Visual Resources
- Agricultural Resources
- Air Quality

- Biological Resources
- Cultural Resources (including Tribal Cultural Resources)
- Greenhouse Gases
- Land Use and Planning
- Noise
- Population and Housing
- Public Services (including Recreation)
- Transportation and Traffic
- Utilities and Services Systems (including Energy)
- Water Resources

1.12.1. Level of Significance

The following terms are used to describe the level of significance of impacts identified in the analyses:

- **No Impact** – applies where the Project would have no effect.
- **Less-Than-Significant Impact** – applies where the Project could create an impact that does not exceed the defined threshold of significance and is therefore less than significant. CEQA does not require mitigation of less-than-significant impacts.
- **Less-Than-Significant Impact with Mitigation** – applies where the Project has the potential to create a significant impact (exceeding the defined threshold of significance), but where this impact can be reduced below the threshold of significance with mitigation.
- **Cumulatively Considerable Contribution** – applies when the Project's contribution to a significant cumulative impact is considered considerable and therefore significant.
- **Significant and Unavoidable Impact** – Significant and Unavoidable applies to an impact that exceeds or has the reasonably foreseeable potential to exceed the defined threshold of significance and cannot be eliminated or reduced to a less-than-significant level through implementation of feasible mitigation measures.

In cases where it would be speculative to determine the nature and therefore impacts of certain possible but not necessarily reasonably foreseeable consequences of the 2018 RTP/SCS (for example the construction of certain public service infrastructure), this PEIR indicates that such impacts would be speculative and ends the analysis.

1.13 LEAD, RESPONSIBLE, AND TRUSTEE AGENCIES

The public agency that has the principal responsibility for carrying out or approving a project is designated as the Lead Agency under CEQA. For this proposed project, TCAG is the Lead Agency, and is responsible for ensuring that the PEIR satisfies the procedural and substantive requirements of CEQA. TCAG is also responsible for considering and certifying the adequacy and completeness of the PEIR prior to making any decision regarding the proposed Project.

"Responsible Agency" means a public agency, which proposes to carry out or approve a project for which the Lead Agency is preparing or has prepared an EIR or Negative Declaration. For purposes of CEQA, the term Responsible Agency includes all public agencies other than the Lead Agency having discretionary approval authority over the proposed project (*State CEQA Guidelines* Section 15381). During the NOP review period, no other public agency identified itself as a Responsible Agency. No responsible agencies for this PEIR have been identified because only TCAG is responsible for approving the 2018 RTP/SCS.

"Trustee Agency" means a state agency having jurisdiction by law over natural resources affected by a project, which are held in trust for the people of the State of California. During the NOP review period, no public agency identified itself as a Trustee Agency. For this PEIR, the California Department of Fish and Wildlife is considered a Trustee Agency.

1.14 EIR REVIEW PROCESS

Pursuant to *State CEQA Guidelines* § 15082, the NOP for the 2018 RTP/SCS PEIR was released on April 6, 2017 and circulated for a 30-day comment period ending May 8, 2017. TCAG convened two PEIR scoping meetings at TCAG's office on April 25, 2017. A copy of the NOP is included in **Appendix 1.0**, along with copies of the (one) letter received in response to the NOP.

This PEIR is being circulated for a 45-day public review and comment period. During this period, written comments concerning the adequacy of the Draft PEIR may be submitted by any interested person and/or affected agency, to:

Tulare County Association of Governments
210 N. Church Street, Suite B
Visalia, CA 93291
Attn: Gabriel Gutierrez, Senior Regional Planner
GGutierrez@tularecog.org

Following the public review period, all written comments on significant environmental issues will be responded to in writing and incorporated into a Final PEIR. At least 10 days prior to the hearing to certify the Final PEIR, proposed responses to agency comments on the Draft PEIR will be sent to those agencies as required by CEQA. The Final PEIR will then be considered by the Tulare County Board of Governors, which will determine whether to certify the adequacy and completeness of the document in accordance with CEQA. No aspect of the proposed project would be approved until after the Final PEIR is certified.

1.15 CEQA STREAMLINING

The purpose of the SCS is to develop strategies to meet the GHG emission reduction targets for the region, as an incentive for local agencies to implement an SCS, SB 375 establishes CEQA streamlining or exemptions for two types of projects: Transportation Priority Projects" (TPPs) and residential projects consistent with the SCS.

1.15.1 Transit Priority Projects

A TPP is eligible for four types of CEQA streamlining: (1) Sustainable Communities Project CEQA Exemption, (2) Sustainable Communities Environmental Assessment, (3) a streamlined EIR, or (4) traffic mitigation measures. Different types of CEQA relief are associated with different criteria that are to be met.

As a threshold matter, to qualify as a TPP, a project must be consistent with the general use designation, density, building intensity and applicable policies in a SCS accepted by the State Air Resources Board. The TPP must also:

- be at least 50 percent residential use based on area;
- contain at least 20 dwelling units/acre;
- have a floor area ratio for the commercial portion of the project at 0.75, if the project contains between 26 percent and 50 percent nonresidential uses; and

- be within 0.5 mile of a major transit stop[18] or high-quality transit corridor[19] included in the RTP.

Sustainable Communities Project Exemption

The Sustainable Communities Project (SCP) is a TPP, which is consistent with the SCS that meets a number of criteria related to being located in an area well-served by infrastructure, located on a site that does not contain hazards or historic resources, meets certain energy efficiency and size criteria as well as other performance standards.

After a public hearing where a legislative body finds that a TPP meets all the requirements, a project can be declared to be an SCP and can be exempted from CEQA.

Sustainable Communities Environmental Assessment

A TPP that does not meet the Sustainable Communities Project Exemption may nevertheless qualify for a Sustainable Communities Environmental Assessment (SCEA) if the project incorporates all feasible mitigation measures, performance standards, or criteria set forth in prior applicable certified environmental impact reports, such as the 2018 RTP/SCS EIR.[20] An SCEA is comparable to a negative declaration since the lead agency must find that all potentially significant impacts of a project have been identified, adequately analyzed, and mitigated to a level of insignificance. However, unlike a negative declaration, the SCEA need not consider the cumulative effects of the project that have been adequately addressed and mitigated in prior EIRs. Also, growth-inducing impacts are not required to be referenced, described, or addressed. Additionally, project specific or cumulative impacts from cars and light duty truck trips on global warming or the regional transportation network need not be referenced, described, or discussed.

An SCEA is to be circulated for 30 days; comments will be considered; and then the SCEA may be approved after a public hearing provided impacts are mitigated. The SCEA will be reviewed under the substantial evidence standard, which means a court will uphold an agency's decision if there is substantial evidence in light of the whole record to support its action, rather than the less deferential fair argument standard that applies to Negative Declarations.

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18 Defined as a site containing an existing rail transit station, a ferry terminal served by either a bus or rail transit service, or the intersection of two or more major bus routes with a frequency of service interval of 15 minutes or less during the morning and afternoon peak commute periods.

19 Defined as a corridor with fixed route bus service with at least 15-minute service intervals during peak commute hours.

20 Pub. Res. Code §21155.2(b)

Transit Priority Project Streamlined Environmental Impact Report

Instead of an SCEA, a lead agency may choose to prepare a streamlined ("limited") EIR for approval of a TPP. If, after conducting an Initial Study, the lead agency determines that an EIR is required, it only need address potentially significant impacts. Where a cumulative effect has been adequately addressed and mitigated in a previous EIR that cumulative effect shall not be treated as cumulatively considerable. The EIR is not required to analyze off-site alternatives to the TPP or discuss a reduced residential density alternative to address the effects of car and light duty truck trips generated by the project. Furthermore, the EIR is not required to include an analysis of growth inducing impacts or any project specific or cumulative impacts from cars and light duty trucks trips generated by the project on global warming or the regional transportation network. The IS must identify any cumulative effects that have been adequately addressed and mitigated in prior applicable certified EIRs and these cumulative effects are not to be treated as cumulatively considerable in the EIR.

Traffic Mitigation Measures

After a public hearing, a legislative body or local jurisdiction may adopt traffic mitigation measures that apply to TPPs, including requirements for the installation of traffic control improvements, street or road improvements, contributions to road improvement or transit funds, transit passes for future residents, or other measures that will avoid or mitigate traffic impacts of TPPs. Such measures must be updated as necessary every five years. If such measures are adopted by a local jurisdiction, no additional traffic mitigation measures are required for TPPs. Measures addressing public health and bicycle safety may still be imposed.

1.15.2 SB 375 Streamlining for Residential and Mixed-Use Projects

SB 375 also provides for general CEQA streamlining for residential and mixed-use residential projects consistent with an SCS. Pursuant to Section 21159.28 of the Public Resources Code, projects that meet the following requirements can be subject to streamlined CEQA review:

- A residential or mixed-use residential project (or a TPP) consistent with the designation, density, building intensity, and applicable policies specified for the project area in an accepted SCS (a residential or mixed-use residential project is a project where at least 75 percent of the total building square footage of the project consists of residential use or a project that is a transit priority project); and

- Incorporates the mitigation measures required by an applicable prior environmental document, e.g., the 2018 RTP/SCS EIR.

If a project meets these requirements, any exemptions, negative declarations, mitigated negative declarations, SCEA, EIR or addenda prepared for the projects shall not be required to reference describe, or discuss:

1. growth inducing impacts; and
2. any project specific or cumulative impacts from cars and light-duty truck trips generated by the project on global warming or the regional transportation network.

CEQA Incentive

As previously discussed, SB 375 provides incentives in the form of CEQA streamlining to encourage land use projects that support reduction in per capita GHG emissions. The land use assumptions used in the SCS do not represent detailed, parcel-level land use designations such as those found within a local jurisdiction's general plan, but rather represent the aggregation of multiple land uses, densities and intensities that are expected to average out within a neighborhood-sized area by 2042. The lead agency, not TCAG, will be responsible for making the determination of consistency for CEQA streamlining purposes, pursuant to the provisions of SB 375, for any given proposed project.

The SCS was not developed with the intent that each project to be located within a certain area must exactly equal the density and relative use designations that are indicated by the growth forecast in order for the project to be found consistent with the SCS's use designation, density, building intensity, and applicable policies. Instead, any given project, having satisfied all of the statutory requirements of either a residential/mixed-use project or TPP as described above, may be deemed by the lead agency to be consistent with the SCS.

1.15.3 Other CEQA Streamlining - SB 226, *CEQA Guidelines* Section 15183.3

SB 226 is intended to streamline review of infill development of residential, commercial, retail, office and school uses consistent with an SCS by: (1) providing flexibility in project design by basing eligibility for streamlining on environmental performance rather than project characteristics; and (2) avoiding repetitive environmental review where effects have already been analyzed at a programmatic level.

Infill projects that satisfy the performance standards specified in *CEQA Guidelines* Appendix M and the provisions of *CEQA Guidelines* §15183.3 may use the streamlining provisions of CEQA §15183.3. The effects of an infill project do not require additional review under two circumstances. First, if an effect was addressed as a significant effect in a prior EIR for a planning level decision, then, with some exceptions, that effect need not be analyzed again for an individual infill project. Second, even if an effect was not analyzed in a prior EIR or is more significant than previously analyzed, further analysis of such effects is

not required if uniformly applicable development policies or standards, adopted by the lead agency or a city or county, apply to the infill project and would substantially mitigate that effect. *CEQA Guidelines* .§15183.3(d)) specifies a deferential substantial evidence standard of review for lead agencies to determine whether an eligible infill project will cause any new or worse significant effects requiring additional CEQA review. Depending on the effects addressed in the prior EIR and the availability of uniformly applicable development policies or standards that apply to the eligible infill project, streamlining ranges from a complete exemption, to an obligation to prepare a streamlined project-specific environmental document.

State CEQA Guidelines Section 15183.3 requires that in order to be eligible for streamlined review, a project must meet a number of criteria. Following preliminary review of an infill project pursuant to Section 15060, the lead agency may prepare a written checklist to evaluate which of the infill project's potential adverse environmental effects, if any, will be subject to further environmental review. A sample written checklist is provided in CEQA Appendix N.

1.15.4 CEQA Streamlining Under SB 743

SB 743 of 2013 creates two different opportunities for CEQA streamlining. First, for residential, mixed use, or employment center projects proposed on infill sites that are within transit priority areas (TPAs),[21] aesthetic and parking impacts are not to be considered significant environmental effects in project CEQA documents (Pub. Res. Code § 21099(d).). "Aesthetic impacts" do not include impacts on cultural or historic resources. Second, SB 743 completely exempts residential, mixed use, or employment center projects in TPAs from CEQA if they are consistent with a specific plan for which an EIR has been prepared, and consistent with the regional SCS that meets regional GHG reduction targets established by SB 375. (Pub. Res. Code § 21154(a).)

[21] A TPA is an area within one-half mile of an existing "major transit stop," or a planned major transit stop included in an adopted federal Transportation Improvement Program. (Pub. Res. Code § 21099(a)(7).)

1.15.5 Subsequent Documentation to this PEIR

TCAG and responsible agencies for projects considered in this PEIR (i.e. lead agencies for transportation and land use projects) may use this PEIR, as appropriate, to evaluate projects contemplated in this PEIR (i.e., transportation projects and a variety of land use projects, ranging from planning projects to individual development projects).

Tiering

Tiering refers to using the analysis of general matters contained in a broader EIR (such as a PEIR) (*State CEQA Guidelines* Section 15152). The broader EIR does not need to go into detail of future projects when the details are not known. When individual land use or transportation projects within the planning area are proposed, they may rely on this PEIR for broad analysis and only need to cover the environmental topics that would result in potentially significant impacts. See *State CEQA Guidelines* §15168(c) for details.

1.16 REPORT FORMAT

A principal objective of CEQA is that the environmental review process provides information to agencies, interested parties and the public, and that it allows opportunities for public review and comment regarding potential physical environmental impacts of a project. A description of the organization of this PEIR and the content of each section is provided below to assist the reader in using this PEIR as a source of information about the proposed Project. Sections of the Draft PEIR following this introduction are organized as follows:

Section 2.0, Summary, includes a general description of the environmental setting, project description, and alternatives to the proposed Project. Environmental impacts and mitigation measures are summarized in a table.

Section 3.0, Project Description, presents a detailed description of the 2018 RTP/SCS as required by the *State CEQA Guidelines*.

Section 4.0, Environmental Impact Analysis, contains analysis of each of the environmental topics addressed in this PEIR.

Section 5.0, Alternatives, provides analysis of alternatives to the proposed project.

Section 6.0, Other CEQA Considerations evaluates significant irreversible environmental changes and provides an overview of those environmental topics for which TCAG has determined the proposed project would not result in a significant impact.

Section 7.0, List of EIR Preparers, provides a list of persons involved in the preparation of this PEIR.

Section 8.0, References and Persons Consulted, provides a list of organizations and persons contacted during preparation of the Draft PEIR, and a list of documents used as a basis of information for the Draft PEIR.

Appendices to this PEIR include the NOP and written responses, as well as selected technical reports and data used or generated during preparation of the Draft PEIR.

2.0 EXECUTIVE SUMMARY

The purpose of the executive summary is to provide a clear and simple description of the project and its potential environmental impacts. Section 15123 of the *California Environmental Quality Act (CEQA) State Guidelines*[1] requires the executive summary to identify each significant effect with proposed mitigation measure(s) and alternatives that would minimize or avoid that effect. The summary is also required to identify areas of controversy known to the Lead Agency, including issues raised by agencies and the public, and issues to be resolved, including the choice among alternatives and whether or how to mitigate the significant effects.

2.1 PROJECT LOCATION AND SETTING

Generally, the western portion of Tulare County is located within California's Southern San Joaquin Valley and the eastern portion is generally located within the Sierra Nevada (see **Figure 2.0-1, Regional Location**). Encompassing 4,839 square miles, the County is situated along State Route (SR)-99 approximately 175 miles north of Los Angeles. The highest point is located at 14,505 feet at the summit of Mount Whitney on the eastern edge of the County. As of 2017, Tulare County's estimated population is approximately 471,842.

Tulare County is the seventh largest (in terms of area) county in California and is 93 miles in length from the northwestern boundary to the southeastern boundary. Current population is expected to grow to 604,969 persons by 2042 (a difference of 133,127 persons), the horizon year for the RTP. There are eight incorporated cities within Tulare County: Dinuba, Exeter, Farmersville, Lindsay, Porterville, Tulare, Visalia, and Woodlake.

Tulare County is comprised of two separate regions based on significant variations in terrain, climate, geographic and environmental factors:

Valley Region: The southern San Joaquin Valley below an elevation of 1,000 feet mean sea level.

Mountain Region: The easternmost and central portion of the County above the 1,000-foot mean sea level in the Sierra Nevada Mountains.

1 *State CEQA Guidelines*, Section 15123.

2.2 PROJECT OBJECTIVES

The primary objective of the 2018 RTP/SCS is to comply with applicable regulatory requirements, including federal transportation planning law, CTC Guidelines and SB 375, including SB 375's regional GHG reduction targets. TCAG's specific objectives for the 2018 RTP/SCS:[2]

- Provide an efficient, integrated, multi-modal transportation system for the movement of people and goods that enhances the physical, economic, and social environment in the Tulare county region
- System Performance: Develop an efficient, maintained, and safe circulation network that maximizes circulation, longevity, and fiscal responsibility while minimizing environmental impacts.
- Transit: Provide a safe, secure, coordinated and efficient public transit system that can reasonably meet the needs of residents.
- Aviation: Support development of a regional system of airports that meets the air commerce and general aviation needs of the county.
- Rail: Promote safe, economical, convenient rail systems and schedules that meet the needs of passenger and freight services in the region.
- Goods Movement: Provide a transportation system that efficiently and effectively transports goods to, from, within, and through Tulare County.
- Active Transportation: Improve, enhance, and expand the region's bicycle and pedestrian systems and connectivity to those systems, while keeping them safe and convenient.
- Regional Roads and Corridors: Preserve and enhance regional transportation roads and corridors.
- Air Quality and Greenhouse Gases: Promote the improvement of air quality and GHG reductions through congestion management, coordination of land use, housing, and transportation systems, provision of alternative modes of transportation, and provision of incentives that reduce vehicle miles traveled.
- Public Health: Promote public health in the region by providing opportunities for residents to bicycle and walk to destinations such as home, work, school, medical facilities, and commercial and service businesses.
- TSM Strategies, TDM Measures, TCMS, and ITS Programs: Improve transportation mobility and operations by improving and utilizing TSM strategies, TDM measures, TCMS and ITS programs.
- Environmental Justice: Ensure that transportation investments do not discriminate on the basis of race, color, national origin, sex, age or disability.
- Emerging Technologies: Support the development and implementation of emerging technologies in the surface transportation system.

[2] 2018 TCAG RTP/SCS Goals and Objectives

- SCS: Develop an integrated land use plan that meets CARB targets.

2.3 PROJECT CHARACTERISTICS

The 2018 RTP/SCS is a 24-year blueprint that establishes a set of regional transportation goals, policies, and actions intended to guide development of the planned multimodal transportation systems in Tulare County. The Plan has been developed through a continuing, comprehensive, and cooperative planning process, and provides for effective coordination between local, regional, state, and federal agencies.

2.3.1 Regional Transportation Plan

The 2018 RTP/SCS is comprised of the following elements:

Policy Element: The Policy Element identifies transportation goals, objectives, and policies that will help meet the needs of the region. These goals, objectives, and policies are established to determine specific courses of action to guide Tulare County toward implementation of the 2018 RTP/SCS. The areas covered are quite expansive, from items such as bicycle, goods movement, and regional road system polices, to policies and objectives to achieve public health, public outreach, and environmental justice goals.

Action Element: The Action Element delineates the current program of highway, streets and roadways, transit, bikeway, and passenger rail projects proposed by the various jurisdictions in the TCAG region. These include programs and projects intended to improve roadway capacity/vehicular flow, enhance transit operations, improve safety, support transportation planning and travel demand management, promote high occupancy vehicle use and improve multimodal and intermodal facilities. Criteria are also established for evaluating, selecting, ranking and measuring the performance of projects in the 2018 RTP/SCS.

Individual transportation projects included in the 2018 RTP/SCS are listed in the Action Element. The 2018 RTP/SCS is a "fiscally constrained" plan which means that the projects included have committed, available, or reasonably available funding sources (**see Table 3.0-8, Detailed 2018 RTP/SCS Transportation Projects List**).

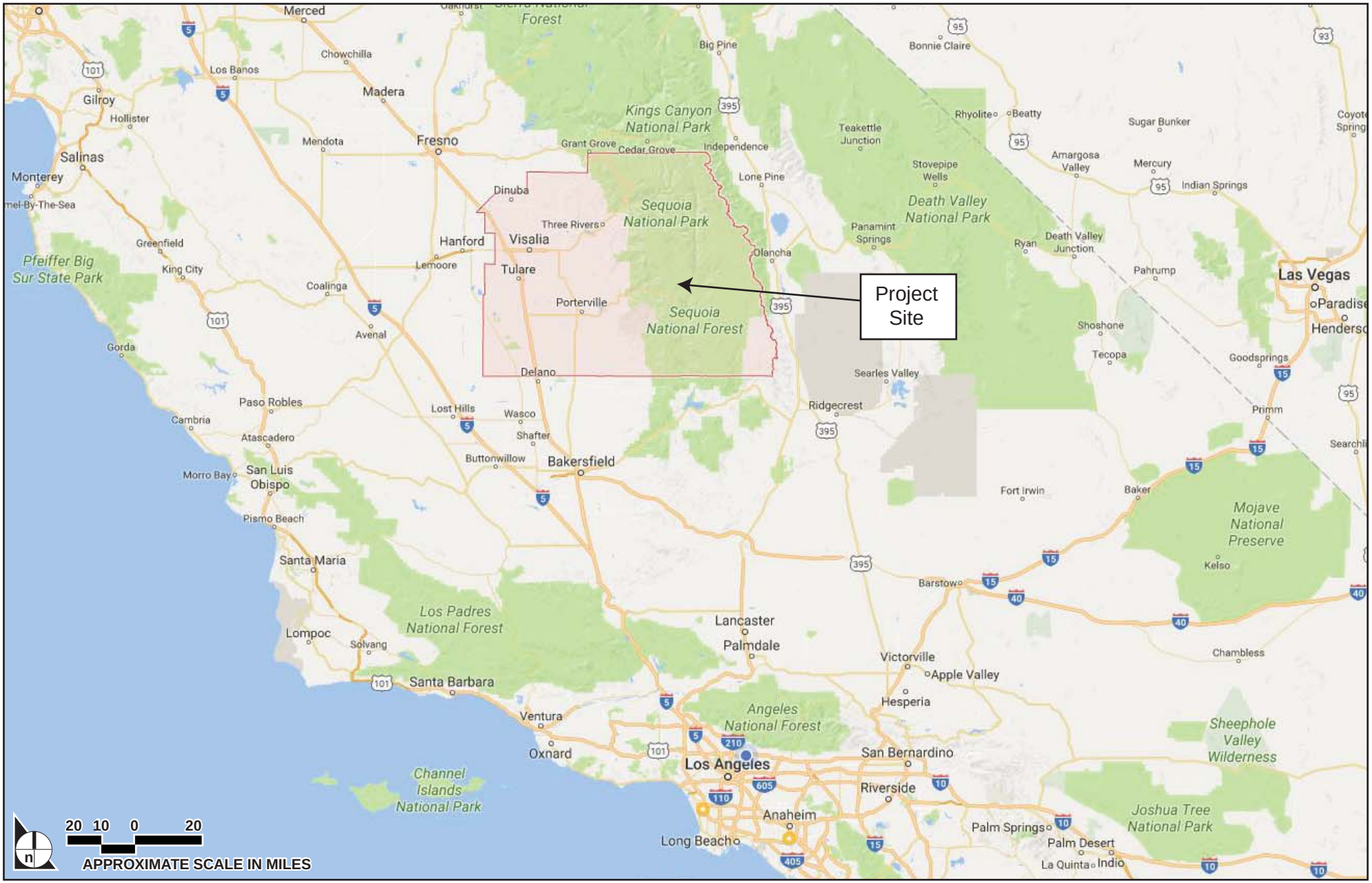
The 2018 RTP/SCS also contains a listing of "unconstrained" projects. Unlike the constrained list of projects included in the Plan, the unconstrained projects present a vision for regional improvements beyond committed, available, or reasonably available funding sources. The unconstrained projects list also identifies additional projects that require study and consensus building before the decision can be made as to whether to commit the funding to include these projects in a future RTP's constrained plan.

This PEIR does not analyze the impacts of these unconstrained projects because they require further study, further planning, and/or additional funding. Their implementation is speculative at this point.

Financial Element: The purpose of the Financial Element is to provide assumptions of the cost and revenues necessary to implement the 2018 RTP/SCS. The assumptions include revenue estimates for specific governmental funding programs, (including the local sales tax measure (Measure R,) state, and federal funds), local contributions, license and fuel taxes, and development fees.

Sustainable Communities Strategy: The SCS identifies a forecasted land use pattern that, when integrated with the transportation network, achieves CARB regional GHG reduction targets.

Valleywide Chapter: The Valleywide Chapter provides a regional perspective to transportation planning in the San Joaquin Valley. The chapter discusses demographic data relevant to the San Joaquin Valley region, such as population, educational attainment, median household income, etc. The chapter also outlines a number of valley-wide issues and areas of collaboration such as air quality, advocacy, goods movement, passenger rail and the SR-99 corridor.



SOURCE: Tulare County Association of Governments, 2018

FIGURE **2.0-1**

IMPACT SCIENCES

Regional Location

1290.001•1/18

2.3.2 Sustainable Communities Strategy

At the foundation of the SCS[3] is a land use pattern identifying the general location of uses, residential densities, and building intensities within the region. The general distribution of land uses, that is, residential, commercial, industrial, etc., is based on the existing, adopted general plans of Tulare County and the eight cities. The horizon year of the RTP/SCS, 2042, is beyond the horizon year of all the currently adopted general plans. The current general plans have horizon years of 2030 or sooner. The principles of the preferred (Blueprint) land use scenario guided the allocation of future development sufficient to accommodate the forecasted growth in population, households and employment through 2042 (refer to **Table 2.0-1, Forecast 2042**). Most notable of these principles is an increase in densities countywide by 25 percent over the status quo densities.

Table 2.0-1
Forecast 2042

Jurisdiction	Population	Housing Units	Employment
Dinuba	26,392	6,929	8,883
Exeter	14,500	4,848	3,463
Farmersville	14,931	3,690	2,350
Lindsay	17,281	4,500	4,607
Porterville	82,354	24,420	23,241
Tulare	92,433	28,231	27,023
Visalia	174,346	59,643	73,567
Woodlake	10,585	2,885	1,147
Unincorporated Tulare County	172,147	51,186	75,930
Tulare County (Total)	604,969	186,332	220,210

Source: TCAG 2018

The theme of the SCS continues to be that moderately higher density, applied thoughtfully as an element of urban design and development, will improve regional jobs-housing fit. This, in turn, will leverage the ability of local agencies to implement projects that achieve better air quality and improved mobility options.

3 TCAG, Draft 2018 RTP/SCS, Chapter D (Sustainable Communities Strategy)

Table 2.0-2
Land Use - Tulare County, 2042

2042 Land Use	Acres	Percentage
Agriculture	1,347,384	43.45
Commercial	11,900	0.38
Industrial	8,480	0.27
State, Federal & Tribal Lands	1,543,684	49.78
Other Urban Uses	3,727	0.12
Large Lot and Rural Res.	70,759	2.28
Residential	30,723	0.99
Valley & Foothill Public Lands	84,415	2.72
Total	3,101,073	

Source: TCAG 2018

2.4 ALTERNATIVES TO THE PROJECT

CEQA requires that an environmental impact report (EIR) describe a range of reasonable alternatives to a proposed project that could feasibly avoid or lessen any significant environmental impacts, while attaining the basic objectives of the project. Comparative analysis of the impacts of these alternatives is required. In response to the significant impacts associated with the proposed project, TCAG has developed and considered several alternatives to the project. These alternatives include:

1. The Proposed 2018 RTP/SCS (also referred to as the Blueprint Scenario) provides land use and transportation recommendations to help achieve a coordinated balance of land uses and transportation such that regional GHG targets are met.

2. The No Project Alternative includes land use patterns, in accordance with existing General Plans, that are expected to occur without implementation of the SCS. The No Project Alternative includes only those transportation projects that are included in the first two years of the previously conforming transportation plan and/or Transportation Improvement Plan (TIP) or have completed environmental review by January 2018.

3. Trend Alternative. The Trend scenario shows a land use forecast based on designations from existing local agency general plans and linear trends in growth on a sub-regional basis. The projected pattern of development is generally consistent with the development pattern seen currently. However, local general plans include policies that will move away from the Trend scenario to some extent -- away from a pure extrapolation of current development types and densities. This is especially true of the most recently updated plans (Porterville, 2007; Tulare County, 2012; Tulare, Visalia, 2014). This alternative includes a modified transportation network with fewer investments (no new transit) as compared to the 2018 RTP/SCS and greater focus on maintenance of the existing network.

4. The Old Plan Alternative is an update of the adopted 2014 RTP reflecting the most recent growth distribution and transportation planning decisions and assumptions, extrapolated from the 2040 horizon year in the 2017 RTP/SCS out to 2042. This Old Plan alternative includes many of the same development pattern strategies included within the 2018 SCS, and includes all of the transportation projects in the 2014 RTP.

5. The Blueprint Plus Scenario increases density and transit in urban areas, beyond what is included in the Proposed Plan (or Blueprint Scenario). It includes a higher percentage of new growth as infill/redevelopment in urban areas; additional transportation investments are also included.

The Plan and each alternative maintain a constant total for population, households, and jobs in 2042.

2.5 AREAS OF KNOWN CONTROVERSY

After conducting preliminary review in accordance with Section 15060 of the *State CEQA Guidelines*, TCAG determined that a PEIR should be prepared to address the potential environmental impacts of the Plan. Following this determination, a Notice of Preparation (NOP) was prepared and circulated between April 6, 2017 and May 8, 2017 for the required 30-day review period. TCAG held two scoping meetings on Tuesday April 25, 2017 at TCAG's offices to solicit comments and to inform the public of the proposed EIR. Comments received in response to the published NOP (provided in **Appendix 1.0**) identified potentially controversial environmental topics that local and regional agencies and City residents recommended for analysis in the Draft EIR. These topics include:

- Biological Resources
- Cultural Resources
- Transportation/Traffic

2.6 ISSUES TO BE RESOLVED

The *State CEQA Guidelines* require an EIR to present issues to be resolved by the lead agency. These issues include the choice between alternatives and whether or how to mitigate significant impacts. The major issues to be resolved by TCAG, as the Lead Agency for the project include the following:

- Whether the recommended mitigation measures should be adopted or modified;
- Whether additional mitigation measures need to be applied to the project; and
- Whether the project or an alternative should be approved.

2.7 SUMMARY OF PROJECT IMPACTS MITIGATION MEASURES

A summary of the environmental impacts associated with implementation of the proposed project, mitigation measures included to avoid or lessen the severity of significant impacts, and residual impacts, is provided in **Table 2.0-3, Summary of Project Impacts, Mitigation Measures, and Residual Impacts**, below.

Table 2.0-3
Summary of Project Impacts, Mitigation Measures, and Residual Impacts

Significance Threshold and Project Impacts	Mitigation Measures	Residual Impact
AESTHETICS		
Impact AES-1: Have a substantial adverse effect on a scenic vista for example by impairing views of scenic resources (i.e., mountains, ocean, rivers, or significant man-made structures) as seen from existing transportation facilities and other key public vantage points in Tulare County. **Impact AES-2:** Substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within a state scenic or eligible highway for example by altering the appearance of designated scenic resources along or near a state-designated or eligible scenic highway or vista point.	**MM-AES-1(a):** Consistent with the provisions of Section 15091 of the State CEQA Guidelines, TCAG has identified mitigation measures capable of avoiding or reducing the significant effects on scenic vistas, or state-designated or eligible, and County-designated, scenic highways or vista points, that are in the jurisdiction and responsibility of local agencies (land use projects) and implementing agencies (transportation projects). Where the Lead Agency has identified that a project has the potential for significant effects, the Lead Agency can and should consider mitigation measures to minimize impacts on scenic vistas, scenic highways, and vista points, including ensuring compliance with visual resource goals and policies within county and city general plans, as applicable and feasible. Such measures include, but are not limited to, the following: • Use a palette of colors, textures, building materials that are graffiti-resistant, and/or plant materials that complement the surrounding landscape and development; • Use contour grading to better match surrounding terrain. Contour edges of major cut-and-fill to provide a more natural looking finished profile; • Use alternating facades to "break up" large facades and provide visual interest; • Design new corridor landscaping to respect existing natural and man-made features and to complement the dominant landscaping of the surrounding areas; • Replace and renew landscaping along corridors with road widenings, interchange projects, and related improvements; • Retain or replace trees bordering highways, so that clear-cutting is not evident;	Significant and unavoidable

Significance Threshold and Project Impacts	Mitigation Measures	Residual Impact
AESTHETICS (continued)		
	MM-AES-1(a) (continued) • Provide new corridor landscaping that respects and provides appropriate transition to existing natural and man-made features, and is complementary to the dominant landscaping or native habitats of surrounding areas; and • Implement design guidelines, local policies, and programs aimed at protecting views of scenic corridors and avoiding visual intrusions in design of projects to minimize contrasts in scale and massing between the project and surrounding natural forms and developments. Avoid, if possible, large cuts and fills when the visual environment (natural or urban) would be substantially disrupted. Site or design of projects should minimize their intrusion into important viewsheds and use contour grading to better match surrounding terrain.	
Impact AES-3: Substantially degrade the existing visual character or quality of the site and its surroundings for example by creating significant contrasts, with the scale, form, line, color, and/or overall visual character of the existing landscape setting.	**Mitigation Measures MM AES-1(a)**.	Significant and unavoidable

Significance Threshold and Project Impacts	Mitigation Measures	Residual Impact
AESTHETICS (continued)		
Impact AES-4: Create a new source of substantial light or glare, which could affect day or nighttime views and/or cause a public hazard.	**MM-AES-4(a):** Consistent with the provisions of Section 15091 of the *State CEQA Guidelines*, TCAG has identified mitigation measures capable of avoiding or minimizing the effects of light and glare on routes of travel for motorists, cyclists, and pedestrians, or on adjacent properties, that are in the jurisdiction and responsibility of local agencies (land use projects) and implementing agencies (transportation projects).. Where the Lead Agency has identified that a project has the potential for significant effects, the Lead Agency can and should consider mitigation measures to minimize light and glare, including ensuring compliance with the goals and policies within county and city general plans, as applicable and feasible. Such measures may include but are not limited to the following: • Use lighting fixtures that are adequately shielded to a point below the light bulb and reflector and that prevent unnecessary glare onto adjacent properties; • Restrict the operation of outdoor lighting for construction and operation activities to the hours of 7:00 a.m. to 10:00 p.m.; • Lighting will be directed away from habitat and open space areas adjacent to the project site; • Use low level light sources with good color rendering and natural light qualities and/or cut-off fixtures for outdoor lighting; • Use unidirectional lighting to avoid light trespass onto adjacent properties; • Design exterior lighting to confine illumination to the project site, and/or to areas which do not include light-sensitive uses; • Provide structural and/or vegetative screening from light-sensitive uses; • Shield and direct all new street and pedestrian lighting away from light-sensitive off-site uses; • Use non-reflective glass or glass treated with a non-reflective coating for all exterior windows and glass used on building surfaces; and • Architectural lighting shall be directed onto the building surfaces and have low reflectivity to minimize glare and limit light onto adjacent properties.	Significant and unavoidable

Significance Threshold and Project Impacts	Mitigation Measures	Residual Impact
AGRICULTURAL RESOURCES		
Impact AG-1: Convert prime farmland, unique farmland, or farmland of statewide importance (farmland), as shown on the maps prepared pursuant to the farmland mapping and monitoring program of the California Resources Agency, to non-agricultural use.	**MM-AG-1(a):** Prior to the design approval of RTP projects, the implementing agency should assess the project area for agricultural resources and constraints. For federally funded projects, implementing and local agencies are required to follow the rules and regulations of Farmland Protection Policy Act including determining the impact by completing the Farmland Conversion Impact Rating form (AD-1006). **MM-AG-1(b):** Consistent with the provisions of Section 15091 of the State CEQA Guidelines, TCAG has identified mitigation measures capable of avoiding or reducing the significant effects from the conversion of Prime Farmland, Unique Farmland, or Farmland of Statewide Importance to non-agricultural uses that are within the jurisdiction and responsibility of local agencies (land use projects) and implementing agencies (transportation projects). Local agencies and implementing agencies should assess projects for the presence of important farmlands (prime farmland, unique farmland, farmland of statewide importance), and if present, perform a Land Assessment and Site Evaluation (LESA). Where the Lead Agency has identified that a project has the potential for significant effects, the Lead Agency can and should consider mitigation measures to minimize farmland conversion impacts, including ensuring compliance with the goals and policies established within the applicable adopted county and city general plans to protect farmland. Such measures include but are not limited to the following, as well as other comparable measures identified by the Lead Agency taking into account project and site-specific considerations as applicable and feasible: • Project relocation or corridor realignment to avoid Prime Farmland, Unique Farmland, or Farmland of Local or Statewide Importance. • Maintain and expand agricultural land protections such as urban growth boundaries. • Support the acquisition or voluntary dedication to the Tulare County's Agricultural Conservation Easement Program. Tulare County would be responsible for implementation of the Tulare County's Agricultural Conservation Easement Program and ensuring that the terms of the conservation easement agreements are upheld. • Provide for mitigation fees to support a mitigation bank that invests in farmer education, agricultural infrastructure, water supply, marketing, etc. that enhance the commercial viability of retained agricultural lands.	Significant and unavoidable

Significance Threshold and Project Impacts	Mitigation Measures	Residual Impact
AGRICULTURAL RESOURCES (continued)		
Impact AG-2: Conflict with existing zoning or land use designation for agricultural use, or a Williamson Act contract.	Implement **MM-AG-1(a)** and **MM-AG-1(b).**	Significant and unavoidable
Impact AG-3: Conflict with existing zoning or land use designation for, or cause rezoning of, forest land (as defined in Pub. Resources Code, § 12220(G)), timberland (as defined by Pub. Resources Code, § 4526), or timberland zoned Timberland Production (as defined by Gov. Code, § 51104(G)); and/or result in the loss of "Forest Land" as defined in the California Forest Legacy Act of 2007 (Pub. Resources Code, § 12220(G)) or conversion of Forest Land into non-forest use.	**MM-AG-3(a):** Consistent with the provisions of Section 15091 of the State CEQA Guidelines, TCAG has identified mitigation measures capable of avoiding or reducing the significant effects on forest land, timberland, or Timberland Production zones that are within the jurisdiction and responsibility of the California Department of Conservation, other public agencies, and Lead Agencies. Where the Lead Agency has identified that a project has the potential for significant effects, the Lead Agency can and should consider mitigation measures to mitigate the significant effects of forest and timberland resources to ensure compliance with the goals and policies established within the applicable adopted county and city general plans to protect resources consistent with the California Forest Legacy Act of 2007 (Pub. Resources Code, § 12220(G)), as applicable and feasible. Such measures may include the following, other comparable measures identified by the Lead Agency taking into account project and site-specific considerations as applicable and feasible: • TCAG should facilitate and encourage implementing local agencies to encourage urban development, in place of development in rural and sensitive areas. Local jurisdictions should seek funding to prepare specific plans and related environmental documents to facilitate mixed-use development, and to allow these areas to serve as receiver sites for transfer of development rights away from environmentally sensitive lands and rural areas outside established urban growth boundaries. • TCAG should facilitate and encourage implementing and local agencies to establish preservation ratios to minimize loss of forest land, and timberland, such as 1 acre of unprotected forest land and timber land to be permanently conserved for each acre of open space developed as a result of individual projects. • TCAG should facilitate and encourage implementing and local agencies to implement design features in transportation projects to minimize impacts. Implementing agencies should consider corridor realignment, buffer zones and setbacks, and berms and fencing where feasible, to avoid forest lands and timberlands and to reduce conflicts between transportation uses and forest and timberlands.	Significant and unavoidable
Impact AG-4: Involve other changes in the existing environment which, due to their location or nature, could result in conversion of farmland, to non-agricultural use.	Implement **Mitigation Measures MM-AG-1(a)** and **MM-AG-1(b)**.	Significant and unavoidable

Significance Threshold and Project Impacts	Mitigation Measures	Residual Impact
AIR QUALITY		
Impact AIR-1: Violate any air quality standard or contribute substantially to an existing or projected air quality violation. Projected short-term emissions of criteria pollutants (construction of transportation projects and projected development) are considered to be significant if they would result in substantial criteria pollutant emissions. Projected long-term emissions of criteria pollutants are considered significant if they are substantially greater than current emission levels.	**MM-AIR-1(a):** Consistent with the provisions of Section 15091 of the State CEQA Guidelines, TCAG has identified mitigation measures capable of avoiding or reducing the significant effects regarding construction emissions that are within the jurisdiction and responsibility of local agencies (land use projects) and implementing agencies (transportation projects) . Where the Lead Agency has identified that a project has the potential for significant effects, the Lead Agency can and should consider mitigation measures to minimize reduce construction emissions below SJVAPCD construction emissions thresholds. Such measures include, but are not limited to, the following: • Prepare a plan for approval by the SJVAPCD demonstrating that the heavy-duty (equal to or greater than 50 horsepower) off-road equipment to be used in the construction project, including owned, leased and subcontractor vehicles, will achieve a project wide fleet-average 20 percent NOx reduction and 45 percent particulate reduction compared to the most recent CARB fleet average at time of construction. A Construction Mitigation Calculator (MS Excel) may be downloaded from the Sacramento Metropolitan Air Quality Management District (SMAQMD) web site to perform the fleet average evaluation (http://www.airquality.org/businesses/ceqa-land-use-planning/mitigation). Acceptable options for reducing emissions may include use of late model engines, low-emission diesel products, alternative fuels, engine retrofit technology (Carl Moyer Guidelines), after-treatment products, voluntary offsite mitigation projects, provide funds for air district off-site mitigation projects, and/or other options as they become available. The air district should be contacted to discuss alternative measures. • Ensure that all construction equipment is properly tuned and maintained. • Minimize idling time to 5 minutes – saves fuel and reduces emissions. • Provide an operational water truck on-site at all times. Apply water to control dust as needed to prevent dust impacts off-site. • Utilize existing power sources (e.g., power poles) or clean fuel generators rather than temporary power generators.	

Significance Threshold and Project Impacts	Mitigation Measures	Residual Impact
	MM-AIR-1(a) (continued): • Develop a traffic plan to minimize traffic flow interference from construction activities. The plan may include advance public notice of routing, use of public transportation, and satellite parking areas with a shuttle service. Schedule operations affecting traffic for off-peak hours. Minimize obstruction of through-traffic lanes. Provide a flag person to guide traffic properly and ensure safety at construction sites. • As appropriate, require that portable engines and portable engine-driven equipment units used at the project work site, with the exception of on-road and off-road motor vehicles, obtain CARB Portable Equipment Registration with the state or a local district permit. Arrange appropriate consultations with the CARB or the District to determine registration and permitting requirements prior to equipment operation at the site. Minimize land disturbance. • Suspend grading and earth moving when wind gusts exceed 25 miles per hour unless the soil is wet enough to prevent dust plumes. • Cover trucks when hauling dirt. • Stabilize the surface of dirt piles if not removed immediately. • Limit vehicular paths on unpaved surfaces and stabilize any temporary roads. • Minimize unnecessary vehicular and machinery activities. • Sweep paved streets at least once per day where there is evidence of dirt that has been carried on to the roadway. • Revegetate disturbed land, including vehicular paths created during construction to avoid future off-road vehicular activities. • On Caltrans projects, Caltrans Standard Specifications 10-Dust Control, 17-Watering, and 18-Dust Palliative shall be incorporated into project specifications. • An asbestos dust mitigation plan shall be prepared for projects suspected to be located on or near soils which may contain naturally occurring asbestos. • Prohibition of any rock crushing activity where materials may contain asbestos.	Short-term emissions: Significant and unavoidable Long-term emissions: Less than significant

Significance Threshold and Project Impacts	Mitigation Measures	Residual Impact
Impact AIR-2: Expose sensitive receptors to substantial pollutant concentrations: Projected long-term emissions of toxic air contaminants (diesel particulate matter from heavy-duty diesel trucks and other emissions from industrial activities) are considered significant if they would be greater than current emission levels; and/or localized concentrations of toxic air contaminants at sensitive receptors (short-term and/or long-term) are considered significant if they would exceed existing conditions.	**MM-AIR-2(a):** TCAG shall pursue the following activities in reducing the impact associated with health risk within 500 feet of freeways and high-traffic volume roadways: • Participate in on-going statewide deliberations on health risks near freeways and high-traffic volume roadways. This involvement includes providing available data and information such as the current and projected locations of sensitive receptors relative to transportation infrastructure; • Work with air agencies including CARB and the air districts in the TCAG region to support their work in monitoring the progress on reducing exposure to emissions of PM10 and PM2.5 for sensitive receptors, including schools, hospitals, and residences within 500 feet of high-traffic volume roadways; • Work with stakeholders to identify planning and development practices that are effective in reducing health impacts to sensitive receptors; and • Share information on all of the above efforts with stakeholders, member cities, counties and the public. **MM-AIR-2(b)**: Consistent with the provisions of Section 15091 of the *State CEQA Guidelines*, TCAG has identified mitigation measures capable of avoiding or reducing the significant effects regarding exposure of sensitive receptors to substantial pollutant concentrations that are within the jurisdiction and responsibility of local agencies (land use projects) and implementing agencies (transportation projects). Where the Lead Agency has identified that a project has the potential for significant effects, the Lead Agency can and should consider the measures that have been identified by SJVAPCD, CARB, and air district(s), or other comparable measures (such as those included in General Plans or other land use regulations), to reduce health risks below SJVAPCD significance thresholds. Lead agencies can and should identify appropriate measures, to be incorporated into project building design for residential, school, and other sensitive uses located within 500 feet (or other appropriate distance as may be identified by CARB) of freeways, heavily travelled arterials, railways and other sources of DPM and known or suspected carcinogens. The measures should include but not be limited to the following: • The project sponsor should retain a qualified air quality consultant to prepare a health risk assessment (HRA) in accordance with CARB and OEHHA requirements to determine the exposure of project residents/occupants/users to stationary source and mobile source emissions prior to issuance of a demolition, grading, or building permit. The HRA should be submitted to the Lead Agency for review and approval. The sponsor should implement the approved HRA recommendations, if any.	Significant and unavoidable at the regional and TPA level.

Significance Threshold and Project Impacts	Mitigation Measures	Residual Impact
AIR QUALITY (continued)		
	AIR-2(b): (continued) • The project sponsor should implement the following features that have been found to reduce the air quality risk to sensitive receptors and should be included in the project construction plans. These should be submitted to the appropriate agency for review and approval prior to the issuance of a demolition, grading, or building permit and ongoing. • Do not locate sensitive receptors near distribution center's entry and exit points. • Do not locate sensitive receptors in the same building as a perchloroleythene dry cleaning facility. • Maintain a 50-foot buffer from a typical gas dispensing facility (under 3.6 million gallons of gas per year). • Install, operate, and maintain in good working order a central heating and ventilation (HV) system or other air take system in the building, or in each individual residential unit, that meets the efficiency standard of the MERV 13. The HV system should include the following features: Installation of a high efficiency filter and/or carbon filter-to-filter particulates and other chemical matter from entering the building. Either HEPA filters or ASHRAE 85 percent supply filters should be used. • Retain a qualified HV consultant or HERS rater during the design phase of the project to locate the HV system based on exposure modeling from the mobile and/or stationary pollutant sources. • Maintain positive pressure within the building. • Achieve a performance standard of at least one air exchange per hour of fresh outside filtered air. • Achieve a performance standard of at least 4 air exchanges per hour of recirculation • Achieve a performance standard of 0.25 air exchanges per hour of in unfiltered infiltration if the building is not positively pressurized.	

Significance Threshold and Project Impacts	Mitigation Measures	Residual Impact
	AIR-2(b): (continued) • Maintain, repair and/or replace HV system or prepare an Operation and Maintenance Manual for the HV system and the filter. The manual should include the operating instructions and maintenance and replacement schedule. This manual should be included in the CC&R's for residential projects and distributed to the building maintenance staff. In addition, the sponsor should prepare a separate Homeowners Manual. The manual should contain the operating instructions and maintenance and replacement schedule for the HV system and the filters. It should also include a disclosure to the buyers of the air quality analysis findings. • Private (individual and common) exterior open space areas, including playgrounds, patios, and decks, should either be shielded from stationary sources of air pollution by buildings or otherwise buffered to further reduce air pollution exposure for project occupants.	
Impact AIR-3: Conflict with or obstruct implementation of the applicable air quality plan: Projected long-term emissions from all sources (stationary and mobile) would be considered significant if they are not consistent with the applicable air quality management plans and state implementation plan.	None required	Less than significant
Impact AIR-4: Expose a substantial number of people to objectionable odors.	None required	Less than significant

Significance Threshold and Project Impacts	Mitigation Measures	Residual Impact
BIOLOGICAL RESOURCES		
Impact BIO-1: Have a substantial adverse effect, either directly or through habitat modification, on any species identified as a candidate, sensitive, or special-status species in local or regional plans, policies, or regulations or by CDFW or USFWS.	**MM-BIO-1(a):** Consistent with the provisions of Section 15091 of the *State CEQA Guidelines*, TCAG has identified mitigation measures capable of avoiding or reducing the significant effects on threatened and endangered species and other special status species that are in the jurisdiction and responsibility of local agencies (land use projects) and implementing agencies (transportation projects). Where the Lead Agency has identified that a project has the potential for significant effects, the Lead Agency can and should consider mitigation measures to minimize impacts to sensitive and special status species, ensuring compliance with Sections 7, 9, and 10(a) of the federal Endangered Species Act; the California Endangered Species Act; the Native Plant Protection Act; and the State Fish and Game Code; and related applicable implementing regulations, as applicable and feasible. Such measures include but are not limited to the following: • Redesign or modify projects to avoid direct and indirect impacts on special status plants, if feasible. • Protect special-status plants near project sites by installing environmentally sensitive area fencing (orange construction barrier fencing) around special-status plant populations. The environmentally sensitive area fencing should be installed at least 20 feet from the edge of the population. • Where avoidance is determined to be infeasible, provide conservation measures to fulfill the requirements of the applicable authorization for incidental take pursuant to Section 7 or 10(a) of the federal Endangered Species Act or Section 2081 of the California Endangered Species Act to support issuance of an Incidental take permit. A wide variety of conservation strategies have been successfully used to protect the survival and recovery in the wild of federally and state-listed endangered species, including: – Avoidance strategies – Contribution of in-lieu fees – Use of mitigation bank credits – Funding of research and recovery efforts – Habitat restoration – Conservation easements – Permanent dedication of habitat – Other comparable measures	Significant and unavoidable

Significance Threshold and Project Impacts	Mitigation Measures	Residual Impact
BIOLOGICAL RESOURCES (continued)		
	BIO-1(a): (continued) • Develop and implement a Worker Awareness Program (environmental education) to inform project workers of their responsibilities in regards to avoiding and minimizing impacts on sensitive biological resources. • Appoint an Environmental Inspector to monitor implementation of mitigation measures. • Schedule construction activities to avoid sensitive times for biological resources (e.g. steelhead spawning periods during the winter and spring, nesting bird season) and to avoid the rainy season when erosion and sediment transport is increased. • Conduct pre-construction monitoring to delineate occupied sensitive species' habitat to facilitate avoidance. Where projects are determined to be within suitable habitat of listed or sensitive species that have specific field survey protocols or guidelines outlined by the USFWS, CDFW, or other local agency, conduct preconstruction surveys that follow applicable protocols and guidelines and are conducted by qualified and/or certified personnel.	

Significance Threshold and Project Impacts	Mitigation Measures	Residual Impact
Impact BIO-2: Have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, regulations, or by CDFW or USFWS; **Impact BIO-3:** Have a substantial adverse effect on federally protected wetlands, as defined by CWA Section 404 (including, but not limited to, marsh, and vernal pools) through direct removal, filling, hydrological interruption, or other means.	**MM-BIO-2(a):** Consistent with the provisions of Section 15091 of the State CEQA Guidelines, TCAG has identified mitigation measures capable of avoiding or reducing the significant impacts on designated sensitive natural communities, including riparian habitats, that are in the jurisdiction and responsibility of local agencies (land use projects) and implementing agencies (transportation projects). Where the Lead Agency has identified that a project has the potential for significant effects, the Lead Agency can and should consider mitigation measures to minimize impacts to sensitive natural communities, ensuring compliance with Section 1600 of the State Fish and Game Code; implementing regulations of the U.S. Fish and Wildlife Service, the National Marine Fisheries Service, and the California Department of Fish and Wildlife; and other related federal, state, and local regulations, as applicable and feasible. Such measures include but are not limited to the following: • Consult with the USFWS, NMFS, and CDFW where such designated sensitive natural communities, including riparian habitats, provide potential or occupied habitat for federally- and state-listed rare, threatened, and endangered species afforded protection pursuant to the federal Endangered Species Act and/or birds under the Migratory Bird Treaty Act. • Comply with CDFW requirements for Lake and Streambed Alteration Agreements pursuant to the provisions of Section 1600 of the State Fish and Game Code. • Require project design to avoid sensitive natural communities and riparian habitats, wherever practicable and feasible. • Where avoidance is determined to be infeasible, develop sufficient conservation measures through coordination with regulatory agencies (i.e., USFWS or CDFW) to protect sensitive natural communities and riparian habitats. • Install fencing and/or mark sensitive natural communities to be avoided during construction activities. • Salvage and stockpile topsoil (the surface material from 6 to 12 inches deep) and perennial plants for use in restoring native vegetation to all areas of temporary disturbance within the project area. • Revegetate with appropriate native vegetation following the completion of construction activities. • Complete habitat enhancement (e.g., through removal of non-native invasive wetland species and replacement with more ecologically valuable native species). • Use Best Management Practices (BMPs) at construction sites to minimize erosion and sediment transport from the area. BMPs include encouraging growth of vegetation in disturbed areas, using straw bales or other silt-catching devices, and using settling basins to minimize soil transport.	Significant and unavoidable

Significance Threshold and Project Impacts	Mitigation Measures	Residual Impact
BIOLOGICAL RESOURCES (continued)		
	MM-BIO-3(a): Consistent with the provisions of Section 15091 of the State CEQA Guidelines, TCAG has identified mitigation measures capable of avoiding or reducing the significant impacts on federally-protected wetlands that are in the jurisdiction and responsibility of local agencies (land use projects) and implementing agencies (transportation projects).. Where the Lead Agency has identified that a project has the potential for significant effects, the Lead Agency can and should consider mitigation measures to minimize impacts on federally protected wetlands, ensuring compliance with Section 404 of the Clean Water Act and regulations of the USACE, and other applicable federal, state and local regulations, as applicable and feasible. Such measures include but are not limited to the following: • Require review of construction drawings by a certified wetland delineator as part of each project-specific environmental analysis to determine whether wetlands will be affected and, if necessary, perform a formal wetland delineation. • Require project design to avoid federally protected wetlands consistent with the provisions of Section 404 of the Clean Water Act, wherever practicable and feasible. Where avoidance is determined to be infeasible, develop sufficient compensatory mitigation measures, consistent with EPA's and USACE's Final Compensatory Mitigation Rule to fulfill the requirements of the applicable authorization for impacts to federally protected wetlands to support issuance of a permit or other authorization under Section 404 of the Clean Water Act, ensuring no net loss of wetlands functions or values.	

Significance Threshold and Project Impacts	Mitigation Measures	Residual Impact
BIOLOGICAL RESOURCES (continued)		
Impact BIO-4: Interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites.	**MM-BIO-4(a):** Consistent with the provisions of Section 15091 of the *State CEQA Guidelines*, TCAG has identified economically-viable mitigation measures capable of avoiding or reducing the significant impacts on migratory fish or wildlife species or within established native resident and/or migratory wildlife corridors, and native wildlife nursery sites that are in the jurisdiction and responsibility of local agencies (land use projects) and implementing agencies (transportation projects). Where the Lead Agency has identified that a project has the potential for significant effects, the Lead Agency can and should consider mitigation measures to ensure compliance with regulations of the USFWS, USFS, CDFW, and related regulations, as well as the goals and polices of counties and cities, as applicable and feasible. Such measures may include may include the following, or other comparable measures identified by the Lead Agency: • Consult with the USFWS, USFS, CDFW, Tulare County and cities in the County, where impacts to birds afforded protection pursuant to the Migratory Bird Treaty Act during the breeding season may occur. • Prohibit construction activities within 500 feet of occupied breeding areas for wildlife afforded protection pursuant to Title 14 § 460 of the California Code of Regulations protecting fur-bearing mammals, during the breeding season. • Conduct a survey to identify active raptor and other migratory nongame bird nests by a qualified biologist at least two weeks before the start of construction at project sites from February 1 through August 31. • Prohibit construction activities with 250 feet of occupied nest of birds afforded protection pursuant to the Migratory Bird Treaty Act, during the breeding season. • Ensure that suitable nesting sites for migratory nongame native bird species protected under the Migratory Bird Treaty Act and/or trees with unoccupied raptor nests should only be removed prior to February 1, or following the nesting season. • Conduct site-specific analyses of opportunities to preserve or improve habitat linkages with areas on- and off-site. Analyze habitat linkages/wildlife movement corridors on a broader and cumulative impact analysis scale to avoid adverse impacts from linear projects that have potential for impacts on a broader scale, and to avoid critical narrow choke points that could reduce function of recognized movement corridors on a larger scale. Require review of project designs and habitat connectivity mapping provided by the CDFW or CNDDB by a qualified biologist to determine the risk of habitat fragmentation.	Significant and unavoidable

Significance Threshold and Project Impacts	Mitigation Measures	Residual Impact
BIOLOGICAL RESOURCES (continued)		
	BIO-4(a): (continued) • Pursue mitigation banking to preserve habitat linkages and corridors (opportunities to purchase, maintain, and/or restore offsite habitat). • Design projects to avoid adverse effects on the movement of native resident or migratory fish or wildlife species, wildlife movement corridors, or wildlife nursery, wherever practicable and feasible. • Install wildlife fencing where appropriate to minimize the probability of wildlife injury due to direct interaction between wildlife and roads or construction. • Where avoidance is determined to be infeasible, design sufficient conservation measures through coordination with local agencies and the regulatory agency (i.e., USFWS or CDFW) and in accordance with applicable general plans to establish plans to mitigate for the loss of fish and wildlife movement corridors and/or wildlife nursery sites. The consideration of conservation measures may include the following measures**.** where applicable: – Wildlife movement buffer zones – Corridor realignment – Appropriately spaced breaks in center barriers – Stream rerouting – Culverts – Creation of artificial movement corridors such as freeway under- or overpasses – Other comparable measures	

Significance Threshold and Project Impacts	Mitigation Measures	Residual Impact
Impact BIO-5: Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance; **Impact BIO-6:** Conflict with the provisions of an adopted habitat conservation plan (HCP), natural communities conservation plan (NCCP), or other approved local, regional, or state habitat conservation plan.	**MM-BIO-5(a):** Consistent with the provisions of Section 15091 of the *State CEQA Guidelines*, TCAG has identified mitigation measures capable of avoiding or reducing the significant effects on biological resources protected by local ordinance that are in the jurisdiction and responsibility of local agencies (land use projects) and implementing agencies (transportation projects). Where the Lead Agency has identified that a project has the potential to significantly affect such biological resources, the Lead Agency can and should consider mitigation measures to minimize such impacts by encouraging compliance with the applicable ordinance and by facilitating mitigation as feasible at the regional level for example by facilitating mitigation banks. **MM-BIO-6(a):** Consistent with the provisions of Section 15091 of the *State CEQA Guidelines*, TCAG has identified mitigation measures capable of avoiding or reducing the significant effects on areas within an HCP or NCCP that are in the jurisdiction and responsibility of local agencies (land use projects) and implementing agencies (transportation projects). Where the Lead Agency has identified that a project has the potential to significantly affect such areas, the Lead Agency can and should consider mitigation measures to minimize such impacts by encouraging avoidance of such areas and where avoidance is infeasible facilitating appropriate mitigation such as in kind land replacement and mitigation banking.	Significant and unavoidable

Significance Threshold and Project Impacts	Mitigation Measures	Residual Impact
CULTURAL RESOURCES		
Impact CR-1: Cause a substantial adverse change in the significance of a historic structure that is a historical resource as defined in *State CEQA Guidelines* Section 15064.5.	**MM-CR-1(a):** Consistent with the provisions of Section 15091 of the State CEQA Guidelines, TCAG has identified mitigation measures capable of avoiding or reducing significant effects on historic resources that are in the jurisdiction and responsibility of local agencies (land use projects) and implementing agencies (transportation projects). Where the Lead Agency has identified that a project has the potential for significant effects, the Lead Agency can and should consider mitigation measures. Such measures include but are not limited to the following: As part of planning, design, and engineering for projects, implementing and local agencies should ensure that historic resources are treated in accordance with applicable federal, state, and local laws and regulations. When a project has been identified as potentially affecting a historical resource, a historical resources inventory should be conducted by a qualified architectural historian. The study should comply with State CEQA Guidelines section 15064.5(b), and, if federal funding or permits are required, with section 106 of the National Historic Preservation Act (NHPA) of 1966 (16 USC Sec. 470). As applicable, the study should consist of the following elements: • A records search at the Southern San Joaquin Valley Information Center (California State University, Bakersfield); • Contact with local historical societies, museums, or other interested parties as appropriate to help determine locations of known significant historical resources; • Necessary background, archival and historic research; • A survey of built environment/architectural resources that are 50 years old or older that may be directly or indirectly impacted by project activities; and • Recordation and evaluation of built environment/architectural resources that are 50 years old or older that may be directly or indirectly impacted by project activities; and • Buildings should be evaluated under CRHR and/or NRHP Criteria as appropriate and recorded on California Department of Parks and Recreation 523 forms.	Significant and unavoidable

Significance Threshold and Project Impacts	Mitigation Measures	Residual Impact
Impact CR-2: Cause a substantial adverse change in the significance of an archaeological resource pursuant to *State CEQA Guidelines* Section 15064.5.	**MM-CR-2(a):** Consistent with the provisions of Section 15091 of the State CEQA Guidelines, TCAG has identified mitigation measures capable of avoiding or reducing the significant effects of on archaeological resources within the jurisdiction and responsibility of local agencies (land use projects) and implementing agencies (transportation projects). . Where the Lead Agency has identified that a project has the potential for significant effects, the Lead Agency can and should consider mitigation measures consistent with Section 15064.5 of the State CEQA Guidelines capable of avoiding or reducing significant impacts on archaeological resources, to ensure compliance with the National Historic Preservation Act, Section 5097.5 of the Public Resources Code (PRC), state programs pursuant to Sections 5024 and 5024.5 of the PRC, adopted county and city general plans, and other federal, state and local regulations. Such measures include but are not limited to the following, or other comparable measures identified by the Lead Agency: • Pursuant to CEQA Guidelines Section 15064.5, prior to construction activities, obtain a qualified archaeologist to conduct a record search at the appropriate Information Center to determine whether the project area has been previously surveyed and whether archaeological resources were identified. • Consult with the NAHC to determine whether known sacred sites are in the project area, and identify the Native American Tribe(s) to contact to obtain information about the project site. • Comply with Section 106 of the National Historic Preservation Act (NHPA) including, but not limited to, projects for which federal funding or approval is required for the individual project. • Prior to construction activities, obtain a qualified archaeologist to conduct archaeological surveys as recommended by the Information Center. In the event the records indicate that no previous survey has been conducted, the Information Center will make a recommendation on whether a survey is warranted based on the sensitivity of the project area for archaeological resources. • If a record search indicates that the project is located in an area rich with cultural materials, retain a qualified archaeologist to monitor any subsurface operations, including but not limited to grading, excavation, trenching, or removal of existing resources from the subject property.	

Significance Threshold and Project Impacts	Mitigation Measures	Residual Impact
	MM-CR -2(a) (continued) • Design projects and conduct construction and excavation activities to avoid cultural resources (if identified). If avoidance is not feasible, further work may be needed to determine the importance of a resource. Retain a qualified archaeologist familiar with the local archaeology, who should make recommendations regarding the work necessary to determine importance. If the archaeological resource is determined to be important under state or federal guidelines, , impacts on the cultural resource should be mitigated consistent with the requirements of *State CEQA Guidelines* § 15126.4(b)(3), which requires that preservation in place be the preferred mitigation strategy if feasible, and that any data recovery plans meet certain requirements. • Stop construction and excavation activities in the area where cultural resources are found until a qualified archaeologist can determine the importance of these resources. Stabilize surface if necessary to preserve the resources until they can be evaluated. • Determine if security will be necessary for the area (if theft and/or vandalism is likely). Erecting physical barriers or other protective devices to protect from theft/disturbance.	Significant and unavoidable
CULTURAL RESOURCES (continued)		
Impact CR-3: Cause a substantial adverse change in the significance of a paleontological resource, pursuant to *State CEQA Guidelines* Section 15064.5.	**MM-CR-3(a): C**onsistent with the provisions of Section 15091 of the State CEQA Guidelines, TCAG has identified mitigation measures capable of avoiding or reducing the significant effects of on paleontological resources within the jurisdiction and responsibility of local agencies (land use projects) and implementing agencies (transportation projects). . Where the Lead Agency has identified that a project has the potential for significant effects, the Lead Agency can and should consider mitigation measures consistent with Section 15064.5 of the State CEQA Guidelines capable of avoiding or reducing significant impacts on paleontological resources, to ensure compliance with the National Historic Preservation Act, Section 5097.5 of the Public Resources Code (PRC), state programs pursuant to Sections 5024 and 5024.5 of the PRC, adopted county and city general plans, and other federal, state and local regulations. Such measures include but are not limited to the following**:** During environmental review implementing and local agencies can and should retain a qualified paleontologist to identify, survey, and evaluate paleontological resources where potential impacts are considered high. All construction activities should avoid known paleontological resources, if feasible, especially if the resources in a particular lithologic unit formation have been determined to be unique or likely to contain paleontological resources. If avoidance is not feasible, paleontological resources should be excavated by a qualified paleontologist and given to a local agency, State University, or other applicable institution, where they could be curated and displayed for public education purposes.	Significant and unavoidable

Significance Threshold and Project Impacts	Mitigation Measures	Residual Impact
CULTURAL RESOURCES (continued)		
Impact CR-4: Disturb any human remains, including those interred outside of formal cemeteries.	Implementation of **Mitigation Measure MM-CR-2(a).** **MM-CR-4(a):** Consistent with the provisions of Section 15091 of the State CEQA Guidelines, TCAG has identified mitigation measures capable of avoiding or reducing the significant effects to human remains that are within the jurisdiction and responsibility of local agencies (land use projects) and implementing agencies (transportation projects). Where the Lead Agency has identified that a project has the potential for significant effects, the Lead Agency should consider mitigation measures capable of avoiding or reducing significant impacts on human remains, to ensure compliance with the California Health and Safety Code, Section 7060 and Sections 18950-18961, and Native American Heritage Commission requirements, as applicable and feasible, and all other applicable federal, state, and local laws. Such measures include but are not limited to the following: In the event of discovery or recognition of any human remains during construction or excavation activities, or any ongoing maintenance or operations, implementing and local agencies should cease further excavation or disturbance of the site or any nearby area reasonably suspected to overlie adjacent human remains until the following steps are taken: • The Tulare County Coroner has been informed and has determined that no investigation of the cause of death is required. • If the remains are determined or suspected by the County coroner to be of Native American origin, either of the following steps will be taken: – The coroner should contact the Native American Heritage Commission in order to ascertain the proper descendants from the deceased individual. The coroner should make a recommendation to the landowner or the person responsible for the excavation work, for means of treating or disposing of, with appropriate dignity, the human remains and any associated grave goods, which may include obtaining a qualified archaeologist or team of archaeologists to properly excavate the human remains.	Less than significant

Significance Threshold and Project Impacts	Mitigation Measures	Residual Impact
	MM-CR-4(a) (continued) – Implementing or local agencies or authorized representatives should retain a Native American monitor, and an archaeologist, if recommended by the Native American monitor, and rebury the Native American human remains and any associated grave goods, with appropriate dignity, on the property and in a location that is not subject to further subsurface disturbance when any of the following conditions occurs: 1. The Native American Heritage Commission is unable to identify a descendent. 2. The descendant identified fails to make a recommendation. 3. The implementing agency or its authorized representative rejects the recommendation of the descendant, and the mediation by the Native American Heritage Commission fails to provide measures acceptable to the landowner.	

Significance Threshold and Project Impacts	Mitigation Measures	Residual Impact
Impact TCR-1: Cause a substantial adverse change in the significance of a tribal cultural resource defined in Public Resources Cod section 21074 that is listed or eligible for listing in the California Register of Historical Resources, or in a local register of historical resources as defined in Public Resources Code section 5020.1(k). **Impact TCR-2:** Cause a substantial adverse change in the significance of a tribal cultural resource defined in Public Resources Code section 21074 that is a resource determined by the lead agency, in its discretion and supported by substantial evidence, to be significant pursuant to criteria set forth in subdivision (c) of Public Resources Code Section 5024.1.	Implement **MM-CR-1(a), MM-CR-1(b), MM-CR-2(a),** and **MM-CR-3(a).** **MM-TCR-1(a): C**onsistent with the provisions of Section 15091 of the State CEQA Guidelines, TCAG has identified mitigation measures capable of avoiding or reducing the significant effects of on tribal cultural resources within the jurisdiction and responsibility of local agencies (land use projects) and implementing agencies (transportation projects). . Where the Lead Agency has identified that a project has the potential for significant effects, the Lead Agency can and should consider mitigation measures consistent with Section 15064.5 of the State CEQA Guidelines capable of avoiding or reducing significant impacts on tribal cultural resources, to ensure compliance with the National Historic Preservation Act, Section 5097.5 of the Public Resources Code (PRC), state programs pursuant to Sections 5024 and 5024.5 of the PRC, adopted county and city general plans, and other federal, state and local regulations. Such measures include but are not limited to the following**:** Where Tribal Cultural Resources have been identified (pursuant to the requirements of AB 52), appropriate mitigation shall be identified in concert with local tribes. Where excavation could extend below previously disturbed levels, notification shall be provided to California Native American tribes that are traditionally and culturally affiliated with the geographic area of the project site and have submitted a written request to the Department of City Planning to be notified of proposed projects in that area. If the potential for tribal resources exists, excavation in previously undisturbed soils shall be monitored by a qualified Tribal Monitor. If tribal resources are discovered during excavation, grading, or construction activities, work shall cease in the area of the find until an appropriate Tribal Representative has evaluated the find. Construction personnel shall not collect or move any tribal resources. Construction activity may continue unimpeded on other portions of the project site. Any tribal resources shall be treated with appropriate dignity and protected and preserved as appropriate.	Significant and unavoidable
GREENHOUSE GASES		
Impact GHG-1: Generate GHG emissions, either directly or indirectly, that may have a significant impact on the environment.	Implement **MM-AIR-1(a), MM EN-1(a)** **MM-GHG-1(a):** TCAG shall, through its ongoing outreach and technical assistance programs, work with and encourage local governments to adopt policies and develop practices that lead to GHG emission reductions. These activities shall include, but are not limited to, providing technical assistance and information sharing on developing local Climate Action Plans.	Significant and unavoidable

Significance Threshold and Project Impacts	Mitigation Measures	Residual Impact
GREENHOUSE GASES (continued)		
	MM-GHG-1(b): Consistent with the provisions of Section 15091 of the *State CEQA Guidelines*, TCAG has identified mitigation measures capable of reducing GHG emissions that are within the jurisdiction and responsibility of local agencies (land use projects). Local agencies should adopt, implement, and update Climate Action Plans consistent with 2017 Scoping Plan and General Plan Guidelines guidance that do the following: a) Quantify GHG emissions, both existing and projected over a specified period, resulting from activities within each agency's jurisdiction; b) Establish a level, based on substantial evidence, below which the contribution to GHG emissions from activities covered by the plan would not be cumulatively considerable; c) Identify and analyze the GHG emissions resulting for specific actions or categories of actions anticipated within their respective jurisdictions; d) Specify measures or a group of measures, including performance standards, that substantial evidence demonstrates, if implemented on a project-by-project basis, would collectively achieve the specified emissions level; e) Establish a mechanism to monitor the plan's progress toward achieving that level and to require amendment if the plan is not achieving specified levels; and f) Be adopted in a public process following environmental review. CAPs should, when appropriate, incorporate planning and land use measures from the California Attorney General's latest list of example policies to address climate change at both the plan and project level. Specifically, at the plan level, land use plans can and should, when appropriate and feasible, incorporate planning and land use measures from the California Attorney General's latest list of example policies to address climate change (http://ag.ca.gov/globalwarming/pdf/GP_policies.pdf), including, but not limited to policies from that web page such as: • Smart growth, jobs/housing balance, transit-oriented development, and infill development through land use designations, incentives and fees, zoning, and public private partnerships • Create transit, bicycle, and pedestrian connections through planning, funding, development requirements, incentives and regional cooperation, and create disincentives for auto use • Energy and water-efficient buildings and landscaping through ordinances, development fees, incentives, project timing, prioritization, and other implementing tools	

Significance Threshold and Project Impacts	Mitigation Measures	Residual Impact
	MM-GHG-1(c): Consistent with the provisions of Section 15091 of the *State CEQA Guidelines*, TCAG has identified mitigation measures capable of reducing GHG emissions that are within the jurisdiction and responsibility of local agencies (land use projects). Where the Lead Agency has identified that a project has the potential for significant effects, the Lead Agency can and should consider mitigation measures to minimize land use project GHG emissions, including but not limited to those on the Attorney General's list of project-specific mitigation measures available at the following web site: http://ag.ca.gov/globalwarming/pdf/ GW_mitigation_measures.pdf such as: • Adopt a comprehensive parking policy that discourages private vehicle use and encourages the use of alternative transportation • Build or fund a major transit stop within or near development • Provide public transit incentives such as free or low-cost monthly transit passes to employees, or free ride areas to residents and customers • Incorporate bicycle lanes, routes and facilities into street systems, new subdivisions, and large developments • Require amenities for non-motorized transportation, such as secure and convenient bicycle parking Additional measures from additional resources listed by the California Attorney General at the following webpage: https://oag.ca.gov/environment/ceqa/measures.	
GREENHOUSE GASES (continued)		
Impact GHG-2: Conflict with an applicable plan, policy or regulation adopted for the purpose of reducing the emissions of GHGs.	Implement **MM-GHG-1(a) through MM-GHG-1(c), MM EN-1(a)** and **MM-AIR-1(a).**	SB 375 and AB 32: Less than significant. SB 32 and EO S-3-05: Significant. Local CAPs: Less than significant.

Significance Threshold and Project Impacts	Mitigation Measures	Residual Impact
LAND USE AND PLANNING		
Impact LU-1: Conflict with any applicable land use plan, policy, or regulation of an agency with jurisdiction over the project (including, but not limited to, the general plan, specific plan, local coastal program, or zoning ordinance) adopted for the purpose of avoiding or mitigating an environmental effect.	**MM-LU-1(a):** Consistent with the provisions of Section 15091 of the State CEQA Guidelines, TCAG has identified mitigation measures capable of avoiding or reducing the significant effects regarding the potential to conflict with any applicable land use plan, policy, or regulation (adopted for the purpose of avoiding or mitigating environmental effects) of an agency with jurisdiction over the project that are within the jurisdiction and responsibility of local agencies (land use projects) and implementing agencies (transportation projects) . Where the Lead Agency has identified that a project has the potential for significant effects, the Lead Agency can and should consider mitigation measures to avoid conflicts with, land use plans, policies, or regulations of an agency with jurisdiction over the project. Such measures include, but are not limited to, the following: • Modify the transportation or land use project to eliminate the conflict; or if an inconsistency with an adopted general plan policy or land use regulations (adopted for the purpose of avoiding or mitigating environmental effects) is identified, determine if the environmental, social, economic, and engineering benefits of the project or other factors warrant an amendment to the general plan or land use regulations.	Significant and unavoidable

Significance Threshold and Project Impacts	Mitigation Measures	Residual Impact

Impact LU-2: Physically divide an established community.	See **Mitigation Measures MM-LU-(a)1.**
	
	MM-LU 2(a): Consistent with the provisions of Section 15091 of the State CEQA Guidelines, TCAG has identified mitigation measures capable of avoiding or reducing the significant effects related to the physical division of an established community in a project area within the jurisdiction and responsibility of local jurisdictions and Lead Agencies. Where the Lead Agency has identified that a project has the potential for significant effects, the Lead Agency can and should consider mitigation measures to ensure compliance with the goals and policies established within the applicable adopted county and city general plans to avoid the creation of barriers that physically divide such communities, as applicable and feasible. Such measures may include the following, or other comparable measures identified by the Lead Agency:
	• Local jurisdictions can and should encourage local jurisdictions to facilitate good design for land use projects that builds upon and improves existing circulation patterns.
	• Local jurisdictions can and should encourage implementing agencies to orient transportation projects to minimize impacts on existing communities by:
	  • Selecting alignments within or adjacent to existing public right-of-ways.
	  • Designing sections above- or below-grade to avoid physical division of communities.
	  • Providing for direct crossings, overcrossings, or undercrossings at regular intervals for various modes of travel (e.g. active transport).
		Significant and unavoidable

Impact LU-3: Conflict with any applicable habitat conservation plan or natural community conservation plan.	Refer to **Section 4.4, Biological Resources** and **Impact BIO-6** for the discussion regarding potential conflicts with habitat conservation plans and NCCPs.	Significant and unavoidable

Significance Threshold and Project Impacts	Mitigation Measures	Residual Impact
NOISE		
Impact NOISE-1: Exposure of persons or generation of noise in levels in excess of standards established in local general plans or noise ordinances, or applicable standards of other agencies. **Impact NOISE-2:** Result in a substantial temporary or periodic increase in ambient noise levels above levels existing without the project. **Impact NOISE-3:** Result in a substantial permanent increase in ambient noise levels above levels existing without the project.	**MM-NOISE-1(a):** Consistent with the provisions of Section 15091 of the State CEQA Guidelines, TCAG has identified mitigation measures capable of avoiding or reducing significant construction noise impacts that are within the jurisdiction and responsibility of local agencies (land use projects) and implementing agencies (transportation projects). Where the Lead Agency has identified that a project has the potential for significant effects, the Lead Agency can and should consider mitigation measures to avoid or reduce construction noise impacts. Such measures include, but are not limited to, the following: • Equipment and trucks used for project construction can and should utilize the best available noise control techniques (e.g., improved mufflers, equipment redesign, use of intake silencers, ducts, engine enclosures, and acoustically attenuating shields or shrouds), wherever feasible. • Tools (e.g., jack hammers, pavement breakers, and rock drills) used for project construction can and should be hydraulically or electrically powered to avoid noise associated with compressed air exhaust from pneumatically powered tools. However, where use of pneumatic tools is unavoidable, an exhaust muffler on the compressed air exhaust should be used; this muffler can lower noise levels from the exhaust by up to about 10 dBA. External jackets on the tools themselves should be used, if such jackets are commercially available, and this could achieve a further reduction of 5 dBA. Quieter procedures should be used, such as drills rather than impact equipment, whenever such procedures are available and consistent with construction procedures. • Stationary noise sources during construction activities (e.g., noise generators and staging areas) can and should be located as far from adjacent sensitive receptors as possible and they should be muffled and enclosed within temporary sheds or use other measures as determined by the Lead Agency (or other appropriate government agency) to provide equivalent noise reduction.	Significant and unavoidable

Significance Threshold and Project Impacts	Mitigation Measures	Residual Impact
NOISE (continued)		
	MM-NOISE-1(a): (continued) • A procedure and phone numbers for notifying the Lead Agency staff and local Police Department of noise complaints; (during regular construction hours and off-hours). • A sign posted on-site pertaining with permitted construction days and hours and complaint procedures and who to notify in the event of a problem. The sign should also include a listing of both the Lead Agency and construction contractor's telephone numbers (during regular construction hours and off-hours). • The designation of an on-site construction complaint and enforcement manager for the project. • Notification of neighbors and occupants within 300 feet of the project construction area at least 30 days in advance of extreme noise generating activities about the estimated duration of the activity. • A preconstruction meeting can and should be held with the job inspectors and the general contractor/on-site project manager to confirm that noise measures and practices (including construction hours, neighborhood notification, posted signs, etc.) are completed. • Use of portable barriers in the vicinity of sensitive receptors during construction. • Projects that require pile driving or other construction noise above 90 dBA in proximity to sensitive receptors, should reduce potential pier drilling, pile driving and/or other extreme noise generating construction impacts greater than 90 dBA; a set of site-specific noise attenuation measures should be completed under the supervision of a qualified acoustical consultant. • Implement noise control at the receivers by temporarily improving the noise reduction capability of adjacent buildings (for instance by the use of sound blankets), and implement if such measures are feasible and would noticeably reduce noise impacts. • Monitor the effectiveness of noise attenuation measures by taking noise measurements. • Maximize the distance between noise-sensitive land uses and new roadway lanes, roadways, rail lines, transit centers, park-and-ride lots, and other new noise-generating facilities. • Construct sound reducing barriers between noise sources and noise-sensitive land uses.	

Significance Threshold and Project Impacts	Mitigation Measures	Residual Impact
	MM-NOISE-1(b): Consistent with the provisions of Section 15091 of the State CEQA Guidelines, TCAG has identified mitigation measures capable of avoiding or reducing significant operational noise impacts that are within the jurisdiction and responsibility of local agencies (land use projects) and implementing agencies (transportation projects). Where the Lead Agency has identified that a project has the potential for significant effects, the Lead Agency can and should consider mitigation measures to avoid or reduce operational noise impacts. Such measures include, but are not limited to, the following: • Stationary noise sources can and should be located as far from adjacent sensitive receptors as possible and they should be muffled and enclosed within temporary sheds, incorporate insulation barriers, or use other measures as determined by the Lead Agency (or other appropriate government agency) to provide equivalent noise reduction. • Implement, to the extent feasible and practicable, speed limits and limits on hours of operation of rail and transit systems, where such limits may reduce noise impacts. • Utilize techniques such as grade separation, buffer zones, landscaped berms, dense plantings, sound walls, reduced-noise paving materials, and traffic calming measures. • Maximize the distance of new route alignments from sensitive receptors. • Locate transit-related passenger stations, central maintenance facilities, decentralized maintenance facilities, and electric substations away from sensitive receptors to the maximum extent feasible. • Use land use measures such as zoning, site design, and buffers to ensure that future development is noise compatible with adjacent transportation facilities and land uses.	

Significance Threshold and Project Impacts	Mitigation Measures	Residual Impact
NOISE (continued)		
Impact NOISE-4: Exposure of persons to or generation of excessive groundborne vibration or groundborne noise levels.	**MM-NOISE-4(a):** Consistent with the provisions of Section 15091 of the State CEQA Guidelines, TCAG has identified mitigation measures capable of avoiding or reducing significant vibration impacts that are within the jurisdiction and responsibility of local agencies (land use projects) and implementing agencies (transportation projects). Where the Lead Agency has identified that a project has the potential for significant effects, the Lead Agency can and should consider mitigation measures to avoid or reduce vibration impacts. Such measures include, but are not limited to, the following: • Retain a structural engineer or other appropriate professional to determine threshold levels of vibration and cracking that could damage any adjacent historic or other structure subject to damage, and design means and construction methods to not exceed the thresholds. • Where possible, smooth pavement to eliminate the discontinuities. • Where feasible, use soil mix wall for excavation. • Incorporate a comprehensive construction vibration specification into all construction bid documents. • Require contractor to assess potential for damage to buildings within 100 feet of a tunnel boring. • Require contractor to perform a physical survey to document existing condition of a building that might incur damage. • If pile driving and/or other vibration-generating construction activities are to occur within 60 feet of a historic structure whose integrity would be impaired by exceeding the vibration threshold for historic structures, implement measures to reduce vibration impacts, including but not limited to: – Retain a structural engineer or other appropriate professional to determine threshold levels of vibration and cracking that would damage any historic structure, and design construction methods to not exceed the thresholds. – Require groundborne vibration monitoring of nearby historic structures. Implement monitoring program to detect ground settlement or lateral movement of structures in the vicinity of pile-driving activities and identify corrective measures to be taken should monitored vibration levels indicate the potential for vibration damage to historic structures. – Require contractor to assess potential damage to buildings within 200 feet of areas where excavation requires the use of driven piles either by impact or vibratory methods. Smooth pavement to eliminate discontinuities that cause vibration from vehicle operations	Significant and unavoidable

Significance Threshold and Project Impacts	Mitigation Measures	Residual Impact
Impact NOISE-5: Exposure of people residing or working in the project area to excessive noise levels if the project is located within an area covered by an airport land use plan, or where such a plan has not been adopted, within 2 miles of a public airport or public use airport **Impact NOISE-6:** Exposure of people residing or working in the project area to excessive noise levels if the project is located in the vicinity of a private airstrip.	None required	Less than significant
POPULATION, HOUSING, AND EMPLOYMENT		
Impact POP-1: Induce substantial unplanned population, housing, or employment growth either directly (for example, by proposing new homes and businesses) or indirectly (for example, through extension of roads or other infrastructure)	**MM-POP-1(a):** Consistent with the provisions of Section 15091 of the State CEQA Guidelines, TCAG has identified mitigation measures capable of avoiding or reducing significant effects of population growth that are in the jurisdiction and responsibility of local agencies (land use projects) and implementing agencies (transportation projects).. Where the Lead Agency has identified that a project has the potential for significant effects, the Lead Agency can and should consider mitigation measures. Such measures include but are not limited to the following: • Review capacities of available urban infrastructure and augment capacities as needed to accommodate demand in locations where growth is desirable and encouraged by the SCS (primarily TPAs, where applicable). • When General Plans and other local land use regulations are amended or updated, use the most recent growth projections and RHNA allocation plan.	Significant and unavoidable
Impact POP-2: Displace a substantial number of existing housing, necessitating the construction of replacement housing elsewhere; or displace substantial numbers of people, necessitating the construction of replacement housing elsewhere; or displace a substantial number of jobs.	**MM-POP-2(a)**: Consistent with the provisions of Section 15091 of the State CEQA Guidelines, TCAG has identified mitigation measures capable of avoiding or reducing the significant effects related to displacement that are within the jurisdiction and responsibility of local agencies (land use projects) and implementing agencies (transportation projects). Where the Lead Agency has identified that a project has the potential for significant effects, the Lead Agency can and should consider mitigation measures to: (1) minimize the displacement of existing housing, people, and jobs; and (2) to ensure compliance with local jurisdiction's Housing Elements and local land use regulations, as applicable and feasible. Such measures may include but are not limited to the following: • Evaluate alternate route alignments, transportation facilities, and alternative site locations for development projects that minimize the displacement of homes and businesses. Use an iterative design and impact analysis where impacts to homes or businesses are involved to minimize the potential of impacts on housing and displacement of people. • Prioritize the use of existing ROWs, wherever feasible. • Develop a construction schedule that minimizes potential neighborhood deterioration and protracted waiting periods between right-of-way acquisition and construction.	Significant and unavoidable

Significance Threshold and Project Impacts	Mitigation Measures	Residual Impact
FIRE SERVICES		
Impact FIRE-1: Result in substantial adverse physical impacts associated with the provision of new or physically altered fire protection facilities, need for new or physically altered fire protection facilities, the construction of which could cause significant environmental impacts in order to maintain acceptable service ratios, response times or other service objectives for fire protection.	None required	Less than significant
POLICE SERVICES		
Impact POLICE-1: Result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, the construction of which could cause significant environmental impacts in order to maintain acceptable service ratios, response times or other service objectives for police protection services.	None required	Less than significant
SCHOOLS		
Impact EDU-1: Result in substantial adverse physical impacts associated with the provision of new or physically altered governmental school facilities, the construction of which could cause significant environmental impacts in order to maintain service objectives for schools.	None required	Less than significant
RECREATION		
Impact REC-1: Result in substantial adverse physical impacts associated with the provision of new or physically altered parks and recreational facilities, need for new or physically altered parks and recreational facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios or other performance objectives for parks.	None required	Less than significant

Significance Threshold and Project Impacts	Mitigation Measures	Residual Impact
Impact REC-2: Increase the use of existing neighborhood and regional parks or other recreational facilities such that substantial physical deterioration of the facility would occur or be accelerated.	**MM-REC-2(a):** Consistent with the provisions of Section 15091 of the State CEQA Guidelines, TCAG has identified mitigation measures capable of avoiding or reducing the significant effects on the integrity of recreation facilities, particularly neighborhood parks in the vicinity of TPAs that are within the jurisdiction and responsibility of local agencies (land use projects) and implementing agencies (transportation projects).. Where the Lead Agency has identified that a project has the potential for significant effects, the Lead Agency can and should consider mitigation measures capable of avoiding or reducing significant impacts on the use of existing neighborhood and regional parks or other recreational facilities to ensure compliance with county and city general plans and the Quimby Act,. Such measures include but are not limited to the following: • Prior to the issuance of permits, where projects require the construction or expansion of recreational facilities or the payment of equivalent Quimby fees, consider increasing the accessibility to natural areas and lands for outdoor recreation, in coordination with local and regional recreational planning and/or responsible management agencies. • Prior to the issuance of permits, where projects require the construction or expansion of recreational facilities or the payment of equivalent Quimby fees, encourage measures which reduce recreational facility costs and make better use of existing recreational facilities, using strategies such as: – Utilizing "green" development techniques; – Promoting water-efficient land use and development; – Encouraging multiple uses; and – Including trail systems and trail segments identified in General Plans. • Prior to the issuance of permits, where construction and operation of projects would require the acquisition or development of protected recreation lands, expand existing neighborhood parks or develop new neighborhood parks such that there is no net decrease in acres of neighborhood park area available per capita in the area.	Significant and unavoidable

Significance Threshold and Project Impacts	Mitigation Measures	Residual Impact
TRANSPORTATION AND TRAFFIC		
Impact TR-1: Substantial increase in VMT (a key circulation system performance measure).	**MM-TR-1(a):** TCAG shall pursue funding for projects and programs, beyond the currently financially and institutionally feasible measures included in the 2018 RTP/SCS to further improve VMT/capita. **MM-TR-1(b):** Consistent with the provisions of Section 15091 of the State CEQA Guidelines, TCAG has identified mitigation measures capable of avoiding or reducing the potential for conflicts with the established measures of effectiveness for the performance of the circulation system that are within the jurisdiction and responsibility of local agencies (land use projects) and implementing agencies (transportation projects). Where the Lead Agency has identified that a project has the potential for significant effects, the Lead Agency can and should consider mitigation measures to minimize VMT, including compliance with 2018 RTP/SCS policies, and other adopted local plans and policies, as applicable and feasible. Such measures include, but are not limited to, the following:	Significant and unavoidable

Significance Threshold and Project Impacts	Mitigation Measures	Residual Impact
	MM-TR-1(b) (continued) General: • Institute teleconferencing, telecommute and/or flexible work hour programs to reduce unnecessary employee transportation. • Create a ride-sharing program by designating a certain percentage of parking spaces for ride sharing vehicles, designating adequate passenger loading and unloading for ride sharing vehicles, and providing a web site or message board for coordinating rides. • Provide a vanpool for employees. • Provide a Transportation Demand Management (TDM) plan containing strategies to reduce on-site parking demand and single occupancy vehicle travel. The TDM should include strategies to increase bicycle, pedestrian, transit, and carpools/vanpool use, including: • Inclusion of additional bicycle parking, shower, and locker facilities that exceed the requirement Construction of bike lanes per the prevailing Bicycle Master Plan (or other similar document) • Signage and striping onsite to encourage bike safety • Installation of pedestrian safety elements (such as cross walk striping, curb ramps, countdown signals, bulb outs, etc.) to encourage convenient crossing at arterials • Installation of amenities such as lighting, street trees, trash and any applicable streetscape plan. • Direct transit sales or subsidized transit passes • Guaranteed ride home program • Pre-tax commuter benefits (checks) • On-site car-sharing program (such as City Car Share, Zip Car, etc.) • On-site carpooling program • Distribution of information concerning alternative transportation options • Parking spaces sold/leased separately • Parking management strategies; including shared parking spaces. • Promote ride sharing programs e.g., by designating a certain percentage of parking spaces for high-occupancy vehicles, providing larger parking spaces to accommodate vans used for ride-sharing and designating adequate passenger loading and unloading and waiting areas.	

Significance Threshold and Project Impacts	Mitigation Measures	Residual Impact
	MM-TR-1(b) (continued) • Encourage bicycling to transit facilities by providing additional bicycle parking, locker facilities, and bike lane access to transit facilities when feasible. • Encourage the use of public transit systems by enhancing safety and cleanliness on vehicles and in and around stations, providing shuttle service to public transit, offering public transit incentives and providing public education and publicity about public transportation services. • Encourage bicycling and walking by incorporating bicycle lanes into street systems in regional transportation plans, new subdivisions, and large developments, creating bicycle lanes and walking paths directed to the location of schools and other logical points of destination and provide adequate bicycle parking, and encouraging commercial projects to include facilities on-site to encourage employees to bicycle or walk to work. • Build or fund a major transit stop within or near transit development • Work with the school districts to improve pedestrian and bike access to schools and to restore or expand school bus service using lower-emitting vehicles. • Provide information on alternative transportation options for consumers, residents, tenants and employees to reduce transportation-related emissions. Transportation Project Selection: • Give priority to transportation projects that would contribute to a reduction in vehicle miles traveled per capita • Separate sidewalks whenever possible, on both sides of all new street improvement projects, except where there are severe topographic or natural resource constraints. Public Involvement: • Carry out a comprehensive public involvement and input process that provides information about transportation issues, projects, and processes to community members and other stakeholders, especially to those traditionally underserved by transportation services. Transit and Multimodal Impact Fees: • Assess transit and multimodal impact fees on new developments to fund public transportation infrastructure, bicycle infrastructure, pedestrian infrastructure and other multimodal accommodations • Implement traffic and roadway management strategies to improve mobility and efficiency, and reduce associated emissions.	

Significance Threshold and Project Impacts	Mitigation Measures	Residual Impact
	MM-TR-1(b) (continued) Arterial Traffic Management: • Modify arterial roadways to allow more efficient bus operation, including bus lanes and signal priority/preemption where necessary. • Implement and support employer and commercial trip reduction programs. • Support bicycle use as a mode of transportation by enhancing infrastructure to accommodate bicycles and riders, and providing incentives. • Establish standards for new development projects to support bicycle use, and require new development projects to include bicycle facilities, as appropriate with the new land use are as follows: Bicycle and Pedestrian Trails: • Establish a network of multi-use trails to facilitate safe and direct off-street bicycle and pedestrian travel, and will provide bike racks along these trails at secure, lighted locations. Bicycle Safety Program: • Develop and implement a bicycle safety educational program to teach drivers and riders the laws, riding protocols, routes, safety tips, and emergency maneuvers. • Pursue and provide enhanced funding for bicycle and pedestrian facilities and access projects. Bicycle Parking: • Adopt bicycle parking standards that ensure bicycle parking sufficient to accommodate 5 to 10 percent of projected use at all public and commercial facilities, and at a rate of at least one per residential unit in multiple-family developments (suggestion: check language with League of American Bicyclists). Vehicle Parking: • Reduce the available parking spaces for private vehicles while increasing parking spaces for shared vehicles, bicycles, and other alternative modes of transportation, as appropriate; • Eliminate or reduce minimum parking requirements for new buildings; • "Unbundle" parking (require that parking is paid for separately and is not included in the base rent for residential and commercial space); • Use parking pricing to discourage private vehicle use, especially at peak times; • Encourage shared parking programs in mixed-use and transit-oriented development areas;	

Significance Threshold and Project Impacts	Mitigation Measures	Residual Impact
	MM-TR-1(b) (continued) • Create parking benefit districts, which invest meter revenues in pedestrian infrastructure and other public amenities; • Establish performance pricing of street parking, so that it is expensive enough to promote frequent turnover and keep 15 percent of spaces empty at all times; • Encourage special event center operators to advertise and offer discounted transit passes with event tickets; • Encourage special event center operators to advertise and offer discount parking incentives to carpooling patrons, with four or more persons per vehicle for on-site parking; and • Promote the use of bicycles by providing space for the operation of valet bicycle parking service. • Establish policies and programs to reduce onsite parking demand and promote ride-sharing and public transit at large events, including: • Promote the use of peripheral parking by increasing on-site parking rates and offering reduced rates for peripheral parking; • Encourage special event center operators to advertise and offer discounted transit passes with event tickets; • Encourage special event center operators to advertise and offer discount parking incentives to carpooling patrons, with four or more persons per vehicle for on-site parking; • Promote the use of bicycles by providing space for the operation of valet bicycle parking service. Parking "Cash-out" Program: • Require new office developments with more than 50 employees to offer a Parking "Cash-out" Program to discourage private vehicle use. Pedestrian and Bicycle Promotion: • Work with local community groups and downtown business associations to organize and publicize walking tours and bicycle events, and to encourage pedestrian and bicycle modes of transportation.	

Significance Threshold and Project Impacts	Mitigation Measures	Residual Impact
Impact TR-2: Conflict with an applicable congestion management program, including, but not limited to, level of service standards and travel demand measures, or other standards established by the County congestion management agency for designated roads or highways.	**MM-TR-2(a) – (b):** **MM-TR-2(a):** TCAG shall inform jurisdictions with projected LOS E and F roadway segments under the Plan of the potential need to develop a Deficiency Plan under the TCAG CMP TCAG shall work with these agencies to identify and implement changes that would increase use of alternative transportation and other means to reduce congestion. **MM-TR-2(b):** Consistent with the provisions of Section 15091 of the State CEQA Guidelines, TCAG has identified mitigation measures, capable of avoiding conflict with an applicable congestion management program that are within the jurisdictions of local agencies (land use projects) and implementing agencies (transportation projects), , Where the Lead Agency has identified that a project has the potential for significant effects, the Lead Agency can and should consider mitigation measures to reduce congestion, ensuring compliance with the adopted Congestion Management Plan, and other adopted local plans and policies, as applicable and feasible. These measure include but are not limited to the following: • Encourage policies that prioritize system management, and increase telecommute opportunities, including investment in non-motorized transportation and discouraging private vehicle use, and maximizing the use of alternative transportation: – Advocate for a regional, market-based system to price or charge for auto trips during peak hours. – Ensure that new developments incorporate both local and regional transit measures into the project design that promote the use of alternative modes of transportation. – Coordinate controlled intersections so that traffic passes more efficiently through congested areas. Where traffic signals or streetlights are installed, require the use of LED technology. – Encourage the use of car-sharing programs. Accommodations for such programs include providing parking spaces for the car-share vehicles at convenient locations accessible by public transportation. – Reduce vehicle hours of delay (VHD), especially daily heavy-duty truck vehicle hours of delay, through goods movement capacity enhancements, system management, increasing rideshare and work-at-home opportunities to reduce demand on the transportation system, investments in non-motorized transportation, maximizing the benefits of the land use-transportation connection and key transportation investments targeted to reduce heavy-duty truck delay.	Significant and unavoidable

Significance Threshold and Project Impacts	Mitigation Measures	Residual Impact
	MM TR-2(b) (continued) • Determine traffic management strategies to reduce, to the maximum extent feasible, traffic congestion and the effects of parking demand by construction workers during construction of projects. Develop a construction management plan that include at least the following items and requirements: – A set of comprehensive traffic control measures, including scheduling of major truck trips and deliveries to avoid peak traffic hours, detour signs if required, lane closure procedures, signs, cones for drivers, and designated construction access routes. – Notification procedures for adjacent property owners and public safety personnel regarding when major deliveries, detours, and lane closures will occur. – Location of construction staging areas for materials, equipment, and vehicles at an approved location that minimizes congestion. – A process for responding to, and tracking, complaints pertaining to construction activity, including identification of an onsite complaint manager. The manager shall determine the cause of the complaints and shall take prompt action to correct the problem. The Lead Agency shall be informed who the Manager is prior to the issuance of the first permit. – Provision for accommodation of pedestrian flow. – As necessary, provision for parking management and spaces for all construction workers to ensure that construction workers do not park in on street spaces. – No materials or equipment shall be stored on the traveled roadway at any time. – Promote "least polluting" ways to connect people and goods to their destinations. – Create an interconnected transportation system that allows a shift in travel from private passenger vehicles to alternative modes, including public transit, ride sharing, car sharing, bicycling and walking, by incorporating the following: – Ensure transportation centers are multi-modal to allow transportation modes to intersect; – Provide adequate and affordable public transportation choices, including expanded bus routes and service, as well as other transit choices such as shuttles, light rail, and rail; – To the extent feasible, extend service and hours of operation to underserved arterials and population centers or destinations such as colleges;	

Significance Threshold and Project Impacts	Mitigation Measures	Residual Impact
	MM TR-2(b) (continued) – Focus transit resources on high-volume corridors and high-boarding destinations such as colleges, employment centers and regional destinations; – Coordinate schedules and routes across service lines with neighboring transit authorities; – Support programs to provide "station cars" for short trips to and from transit nodes (e.g., neighborhood electric vehicles); – Study the feasibility of providing free transit to areas with residential densities of 15 dwelling units per acre or more, including options such as removing service from less dense, underutilized areas to do so; – Provide safe and convenient access for pedestrians and bicyclists to, across, and along major transit priority streets; – Use park-and-ride facilities to access transit stations only at ends of regional transit ways or where adequate feeder bus service is not feasible. • Upgrade and maintain transit system infrastructure to enhance public use, including: – Ensure transit stops and bus lanes are safe, convenient, clean and efficient; – Ensure transit stops have clearly marked street-level designation, and are accessible; – Ensure transit stops are safe, sheltered, benches are clean, and lighting is adequate; – Place transit stations along transit corridors within mixed-use or transit-oriented development areas at intervals of three to four blocks, or no less than one-half mile. • Enhance customer service and system ease-of-use, including: – Develop a Regional Pass system to reduce the number of different passes and tickets required of system users; – Implement "Smart Bus" technology, using GPS and electronic displays at transit stops to provide customers with "real-time" arrival and departure time information (and to allow the system operator to respond more quickly and effectively to disruptions in service); – Investigate the feasibility of an on-line trip-planning program.	

Significance Threshold and Project Impacts	Mitigation Measures	Residual Impact
	MM TR-2(b) (continued) • Prioritize transportation funding to support a shift from private passenger vehicles to transit and other modes of transportation, including: – Give funding preference to improvements in public transit over other new infrastructure for private automobile traffic; – Before funding transportation improvements that increase roadway capacity and VMT, evaluate the feasibility and effectiveness of funding projects that support alternative modes of transportation and reduce VMT, including transit, and bicycle and pedestrian access. • Support voluntary, employer-based trip reduction programs, including: – Provide assistance to regional and local ridesharing organizations; – Advocate for legislation to maintain and expand incentives for employer ridesharing programs; – Require the development of Transportation Management Associations for large employers and commercial/ industrial complexes; – Provide public recognition of effective programs through awards, top ten lists, and other mechanisms. • Implement a "guaranteed ride home" program for those who commute by public transit, ride-sharing, or other modes of transportation, and encourage employers to subscribe to or support the program. • Encourage and utilize shuttles to serve neighborhoods, employment centers and major destinations. • Create a free or low-cost local area shuttle system that includes a fixed route to popular tourist destinations or shopping and business centers. • Work with existing shuttle service providers to coordinate their services. • Facilitate employment opportunities that minimize the need for private vehicle trips, including: – Amend zoning ordinances and the Development Code to include live/work sites and satellite work centers in appropriate locations; – Encourage telecommuting options with new and existing employers, through project review and incentives, as appropriate.	
Impact TR-3: Result in a change in air traffic patterns, including either an increase in air traffic levels or a change in location that results in substantial safety risks.	None required	Less than significant
Impact TR-4: Substantially increase hazards due to a design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment).	None required	Less than significant

Significance Threshold and Project Impacts	Mitigation Measures	Residual Impact
Impact TR-5: Result in inadequate emergency access.	None required	Less than significant
Impact TR-6: Conflict with adopted policies, plans, or programs regarding public transit, bicycle or pedestrian facilities, or otherwise decrease the performance or safety of such facilities.	None required	Less than significant
ENERGY		
Impact ENERGY-1: Conflict with adopted energy conservation plans, or violate State or federal energy standards or cause wasteful, inefficient, and unnecessary consumption of energy during construction, operation, or maintenance.	None required	Less than significant
Impact ENERGY-2: Result in an increase in demand for electricity or natural gas that exceeds available supply or distribution infrastructure capabilities that could result in the construction of new energy facilities or expansion of existing facilities, the construction of which could cause significant environmental effects.	Implement **MM-GHG-1(a)** through **MM-GHG-1(c)** and **MM-AIR-1(a).** **MM-EN-1(a):** Consistent with the provisions of Section 15091 of the *State CEQA Guidelines*, TCAG has identified mitigation measures capable of avoiding or reducing the significant effects of increased energy consumption that are in the jurisdiction and responsibility of local agencies (land use projects). Where the Lead Agency has identified that a project has the potential for significant effects, the Lead Agency can and should consider mitigation measures to reduce energy usage, ensuring compliance with CALGreen, local building codes, and other applicable laws and regulations governing residential building standards, as applicable and feasible. Such measures include but are not limited to the following: • Integrate green building measures consistent with CALGreen (California Building Code Title 24) into project design including: • Use energy efficient materials in building design, construction, rehabilitation, and retrofit. • Install energy-efficient lighting, heating, and cooling systems (cogeneration); water heaters; appliances; equipment; and control systems. • Reduce lighting, heating, and cooling needs by taking advantage of light colored roofs, trees for shade, and sunlight. • Incorporate passive environmental control systems that account for the characteristics of the natural environment. • Use high-efficiency lighting and cooking devices. • Incorporate passive solar design. • Use high-reflectivity building materials and multiple glazing. • Prohibit gas-powered landscape maintenance equipment. – Install electric vehicle charging stations. – Reduce wood burning stoves or fireplaces. • Provide bike lanes accessibility and parking at residential developments.	Significant and unavoidable

Significance Threshold and Project Impacts	Mitigation Measures	Residual Impact
WASTEWATER		
Impact WW-1: Exceed wastewater treatment requirements of the Central Valley Regional Water Quality Control Board. **Impact WW-2:** Require or result in the construction of new wastewater treatment facilities, the construction of which could cause significant environmental effects **Impact WW-3:** Result in a determination by the wastewater treatment provider which serves or may serve the project that is has inadequate capacity to serve the project's projected demand in addition to the provider's existing commitments.	**Mitigation Measure MM-W-9(a)** identified to reduce water consumption would also reduce wastewater flows. **MM-WW-1(a):** Consistent with the provisions of Section 15091 of the State CEQA Guidelines, TCAG has identified mitigation measures capable of avoiding or reducing the significant impacts on wastewater system capacity that are in the jurisdiction and responsibility of local agencies (land use projects) Where the Lead Agency has identified that a project has the potential for significant effects, the Lead Agency can and should consider mitigation measures to provide adequate wastewater system capacity. Such measures include but are not limited to the following: • Work with wastewater service providers to assure that wastewater system capacity is available to serve projected demand. • Work with wastewater service providers implement mitigation measures to avoid or reduce significant environmental impacts associated with the construction of new or expanded wastewater facilities.	Less than significant

Significance Threshold and Project Impacts	Mitigation Measures	Residual Impact
SOLID WASTE		
Impact SW-1: Generate a substantial increase in the amount of solid waste that could exceed the permitted capacity of one or more landfills. **Impact SW-2**: Comply with federal, state, and local statutes and regulations related to solid waste.	**MM-SW-1**: Consistent with the provisions of Section 15091 of the State CEQA Guidelines, TCAG has identified mitigation measures capable of avoiding or reducing the significant effects to landfill capacity that are within the responsibility of local agencies (land use projects) and implementing agencies (transportation projects). Where the Lead Agency has identified that a project that has the potential for significant effects, the Lead Agency can and should consider mitigation measures to minimize solid waste generation to ensure compliance with the County's Integrated Waste Management Plan. Such measures include but are not limited to the following: • Encourage project sponsors to integrate green building measures into project design such as those identified in the U.S. Green Building Council's Leadership in Energy and Environmental Design, CALGreen (California Building Code Title 24), energy Star Homes, Green Point Rated Homes, and the California Green Builder Program. These measures could include the following: – Reuse and minimization of construction and demolition (C&D) debris and diversion of C&D waste from landfills to recycling facilities. – Inclusion of a waste management plan that promotes maximum C&D diversion. – Source reduction through (1) use of materials that are more durable and easier to repair and maintain, (2) design to generate less scrap material through dimensional planning, (3) increased recycled content, (4) use of reclaimed materials, and (5) use of structural materials in a dual role as finish material (e.g., stained concrete flooring, unfinished ceilings, etc.). – Reuse of existing structure and shell in renovation projects. – Design for deconstruction without compromising safety. – Design for flexibility through the use of moveable walls, raised floors, modular furniture, moveable task lighting and other reusable building components. – Development of indoor recycling program. – Require the reuse and recycle of construction and demolition waste (including, but not limited to, soil, vegetation, concrete, lumber, metal, and cardboard). – Integrate reuse and recycling into residential industrial, institutional and commercial projects. – Provide recycling opportunities for residents, the public, and tenant businesses.	Significant and unavoidable

Significance Threshold and Project Impacts	Mitigation Measures	Residual Impact
WATER RESOURCES		
Impact W-1: Violate any water quality standards or waste discharge requirements.	**MM-W-1(a):** Consistent with the provisions of Section 15091 of the State CEQA Guidelines, TCAG has identified mitigation measures capable of avoiding or reducing significant impacts on water quality o related to violations of water quality standards or waste discharge requirements that are within the jurisdiction and responsibility of local agencies (land use projects) and implementing agencies (transportation projects). Where the Lead Agency has identified that a project has the potential for significant effects, the Lead Agency can and should consider mitigation measures to ensure compliance with all applicable laws, regulations, and health and safety standards set forth by regulatory agencies responsible for regulating water quality in a manner that conforms with applicable water quality standards or waste discharge requirements, as applicable and feasible. Such measures include but are not limited to the following: • Complete, and have approved, a SWPPP prior to initiation of construction. • Implement BMPs to reduce the peak stormwater runoff from the project site to the maximum extent practicable. • Comply with the Caltrans stormwater discharge permit as applicable; and identify and implement BMPs to manage site erosion, wash water runoff, and spill control. • Ensure adequate capacity of the surrounding stormwater system to support stormwater runoff from projects. • Install structural water quality control features, such as drainage channels, detention basins, oil and grease traps, filter systems, and vegetated buffers, to prevent pollution of adjacent water resources by polluted runoff where required by applicable urban stormwater runoff discharge permits, on new facilities. • Provide structural stormwater runoff treatment consistent with the applicable municipal stormwater permit. Where Caltrans is the operator, the statewide permit applies. • Provide and implement operational BMPs for street cleaning, litter control, and catch basin cleaning to prevent water quality degradation in compliance with applicable stormwater runoff discharge permits; and ensure treatment controls are in place as early as possible, such as during the acquisition process for rights-of-way, not just later during the facilities design and construction phase. • Incorporate, as appropriate, treatment and control features such as detention basins, infiltration strips, porous paving, and other features to control surface runoff, and facilitate groundwater recharge into the design of new transportation projects early on in the process, to ensure that adequate acreage and elevation contours are provided during the right-of-way acquisition process.	Significant and unavoidable

Significance Threshold and Project Impacts	Mitigation Measures	Residual Impact
	MM-W-1(a): (continued) • Design projects to maintain volume of runoff, where any downstream receiving water body has not been designed and maintained to accommodate the increase in flow velocity, rate, and volume without impacting the water's beneficial uses. Pre-project flow velocities, rates, and volumes should not be exceeded. This applies not only to increases in stormwater runoff from the project site, but also to hydrologic changes induced by floodplain encroachment. Projects should not cause or contribute to conditions that degrade the physical integrity or ecological function of any downstream receiving waters. • Provide culverts and facilities that do not increase the flow velocity, rate, or volume and/or acquiring sufficient storm drain easements that accommodate an appropriately vegetated earthen drainage channel. • Upgrade stormwater drainage facilities to accommodate any increased runoff volumes. These upgrades may include the construction of detention basins or structures that will delay peak flows and reduce flow velocities, including expansion and restoration of wetlands and riparian buffer areas. System designs shall be completed to eliminate increases in peak flow rates from current levels. • Encourage Low Impact Development (LID) and incorporation of natural spaces that reduce, treat, infiltrate and manage stormwater runoff flows in all new developments, where practical and feasible.	

Significance Threshold and Project Impacts	Mitigation Measures	Residual Impact
Impact W-2: Substantially deplete groundwater supplies or interfere substantially with groundwater recharge such that there would be a net deficit in aquifer volume or a lowering of the local groundwater table level.	**MM-W-2(a):** Consistent with the provisions of the Section 15091 of the State CEQA Guidelines, TCAG has identified mitigation measures capable of avoiding or reducing the significant impacts to groundwater resources that are within the jurisdiction and authority of local agencies (land use projects) and implementing agencies (transportation projects). Where the Lead Agency has identified that a project has the potential for significant effects, the Lead Agency can and should consider mitigation measures to ensure compliance with applicable laws, regulations, and health and safety standards set forth by federal, state, regional, and local authorities that regulate groundwater management, consistent with the provisions of the Sustainable Groundwater Management Act and implementing regulations, including recharge in a manner that conforms with standards for sustainable management of groundwater basins, as applicable and feasible. Such measures may include the following, or other comparable measures: • For projects requiring continual dewatering facilities, implement monitoring systems and long-term administrative procedures to ensure proper water management that prevents degrading of surface water and minimizes, to the greatest extent possible, adverse impacts on groundwater for the life of the project, Construction designs shall comply with appropriate building codes and standard practices, including the Uniform Building Code. • Maximize, where practical and feasible, permeable surface area in urbanized areas to protect water quality, reduce flooding, allow for groundwater recharge, and preserve wildlife habitat. . • Avoid designs that require continual dewatering where feasible. • Avoid construction and siting on groundwater recharge areas, to prevent conversion of those areas to impervious surface. • Reduce hardscape and impervious surfaces to the extent feasible to facilitate groundwater recharge. • Ensure that bioswales are installed, where feasible, to facilitate groundwater recharge using stormwater runoff from the project site.	Significant and unavoidable
WATER RESOURCES (continued)		
Impact W-3: Substantially alter the existing drainage pattern of a site or area, including through the alteration of the course of a stream or river, in a manner which would result in substantial erosion or siltation on- or off-site or result in substantial soil erosion or loss of topsoil.	**Mitigation Measure MM-W-1(a).**	Significant and unavoidable

Significance Threshold and Project Impacts	Mitigation Measures	Residual Impact
WATER RESOURCES (continued)		
Impact W-4: Substantially alter the existing drainage pattern of a site or area, including through the alteration of the course of a stream or river, or substantially increase the rate or amount of surface runoff in a manner which would result in flooding on- or off-site.	**Mitigation Measures MM-W-1(a) and MM-W-2(a).**	Significant and unavoidable
Impact W-5: Create or contribute runoff water that would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff.	**Mitigation Measures MM-W-1(a) and MM-W2(a)**	Significant and unavoidable
Impact W-6: Otherwise substantially degrade water quality.	**Mitigation Measures MM-W-1(a)** and **MM-W-2(a).**	Significant and unavoidable
Impact W-7: Place housing within a 100-year flood hazard area as mapped on a federal Flood Hazard Boundary or Flood Insurance Rate Map or other flood hazard delineation map. **Impact W-8**: Place within a 100-year flood hazard area structures which would impede or redirect flood flows.	**MM-W-7(a):** Consistent with the provisions of Section 15091 of the State CEQA Guidelines, TCAG has identified mitigation measures capable of avoiding or reducing the significant impacts of locating structures that would impede or redirect flood flows in a 100-year flood hazard area that are within the jurisdiction and authority of implementing agencies (transportation projects) . Where the Lead Agency has identified that a project has the potential for significant effects, the Lead Agency can and should consider mitigation measures to minimize the impacts of placing structures in floodplains. Such measures include but are not limited to the following: • Comply with Executive Order 11988 on Floodplain Management, which requires avoidance of incompatible floodplain development, and restoration and preservation of the natural and beneficial floodplain values. • Ensure that all roadbeds for new highway and rail facilities be elevated at least one foot above the 100-year base flood elevation. Since alluvial fan flooding is not often identified on FEMA flood maps, the risk of alluvial fan flooding should also be evaluated and projects should be sited to avoid alluvial fan flooding. Delineation of floodplains and alluvial fan boundaries should attempt to account for future hydrologic changes caused by global climate change	Significant and unavoidable

Significance Threshold and Project Impacts	Mitigation Measures	Residual Impact
Impact W-9: Not have sufficient water supplies available to serve the project from existing entitlements and resources, so that new or expanded entitlements would be needed.	**MM-W-9(a):** Consistent with the provisions of Section 15091 of the *State CEQA Guidelines*, TCAG has identified mitigation measures capable of avoiding or reducing the significant impacts on water supplies from existing entitlements and resources requiring new or expanded services that are in the jurisdiction and responsibility of local agencies (land use projects) and implementing agencies (transportation projects).. Where the Lead Agency has identified that a project has the potential for significant effects, the Lead Agency can and should consider mitigation measures to minimize water demands and increase water supplies, ensuring compliance with prevailing state, regional, and local government plans, laws, and policies regarding water conservation and efficiency.. Such measures include but are not limited to the following: • Reduce exterior consumptive uses of water in public areas, and promote reductions in private homes and businesses, by shifting to drought-tolerant native landscape plantings (xeriscaping), using weather-based irrigation systems, educating other public agencies about water use, and installing related water pricing incentives. • Use drought-resistant landscaping options where applicable and feasible and provide information on where these can be purchased. • Use reclaimed water, especially in median landscaping and hillside landscaping, should be implemented where feasible. • Install drip or other water-conserving or weather-based irrigation systems for landscaping. • Implement water conservation best practices such as low-flow toilets, water-efficient clothes washers, water system audits, and leak detection and repair.	Significant and unavoidable

3.0 PROJECT DESCRIPTION

This chapter describes the proposed 2018 Regional Transportation Plan and Sustainable Communities Strategy (2018 RTP/SCS), which is being evaluated in this Program EIR. The implementation of the proposed 2018 RTP/SCS, which updates the 2014 RTP/SCS, is considered the "proposed Project" or "Project." The project description that follows describes the proposed 2018 RTP/SCS for purposes of analyzing the project's potential to create environmental impacts (see **Chapter 4.0** for environmental analyses). This chapter provides an overview of the project's regional location, project background, and project objectives, as well as a detailed description of the proposed 2018 RTP/SCS.

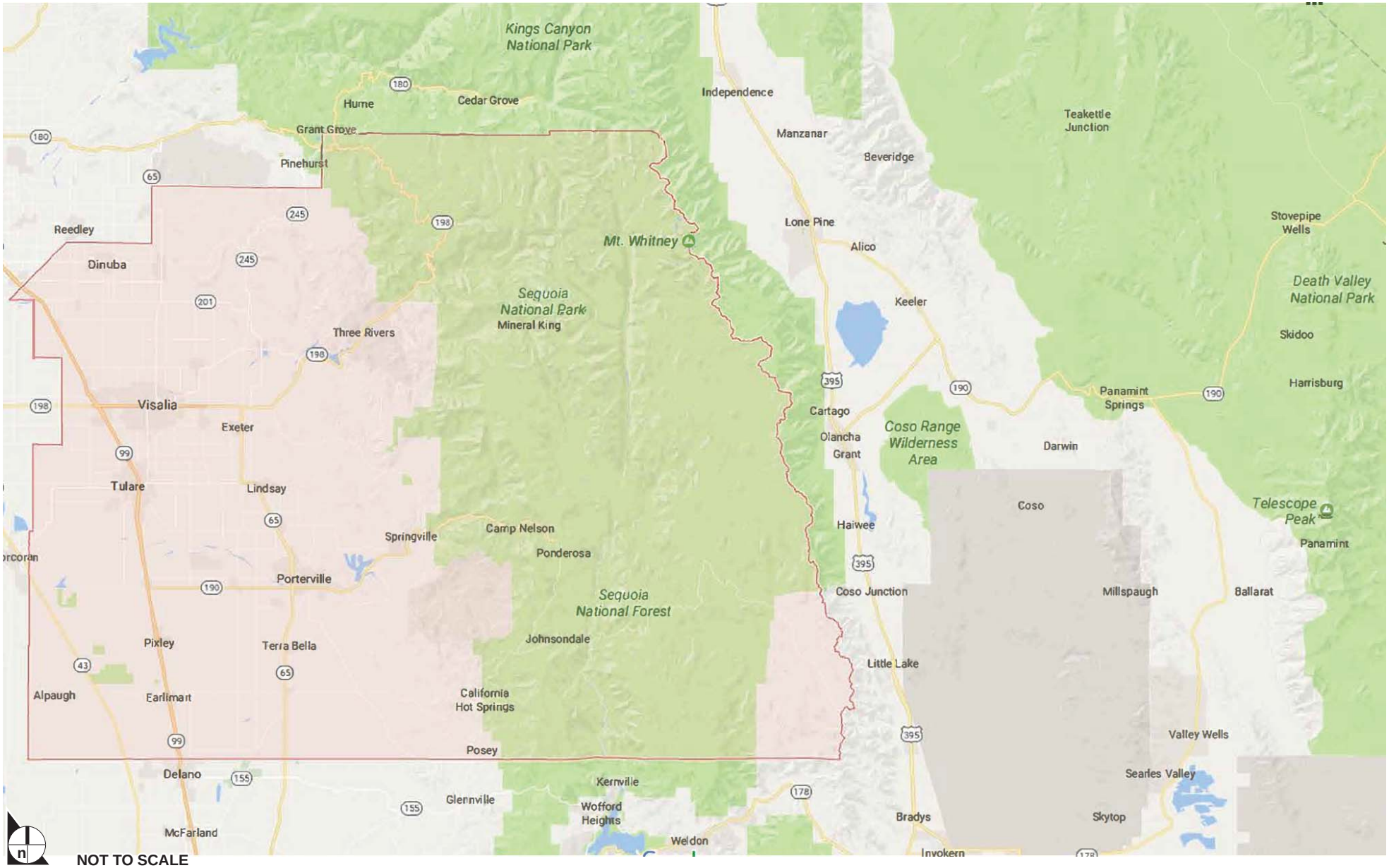
3.1 OVERVIEW

The Tulare County Association of Governments (TCAG) is the agency responsible for developing the 2018 RTP/SCS. TCAG is a regional agency governed by the eight cities and the County of Tulare. Those cities are Dinuba, Exeter, Farmersville, Lindsay, Porterville, Tulare, Visalia, and Woodlake. The planning period for an RTP is required to be a minimum of 20 years; the proposed 2018 RTP/SCS covers the years 2018-2042.

RTPs must be updated every four years. The last RTP/SCS (the first one to include an SCS) was adopted in 2014. An RTP addresses regional transportation facilities, regional needs, and proposed transportation improvements that are reasonable to be funded given what is known about transportation funding opportunities throughout the life of the RTP planning period. The 2018 RTP/SCS also includes a Sustainable Communities Strategy (SCS) that includes a land use pattern that, in tandem with the planned transportation policies and improvements is designed achieve per capita greenhouse gas (GHG) reduction targets for light duty vehicles set by the California Air Resources Board (CARB) under SB 375 of 2008.

3.2 PROJECT BACKGROUND

TCAG is the federally designated Metropolitan Planning Organization (MPO) for Tulare County under federal transportation planning laws that requires preparation of RTPs (23 USC Section 134 *et seq.*). The County location is shown in **Figure 3.0-1, Map of Tulare County**. The Tulare County road system is shown in **Figure 3.0-2, Tulare County Regional Road System; Figure 3.0-3, Tulare County North South Regional Corridors;** and **Figure 3.0-4, Tulare County East West Corridors.**



SOURCE: Google, 2018

FIGURE **3.0-1**

Map of Tulare County

IMPACT SCIENCES

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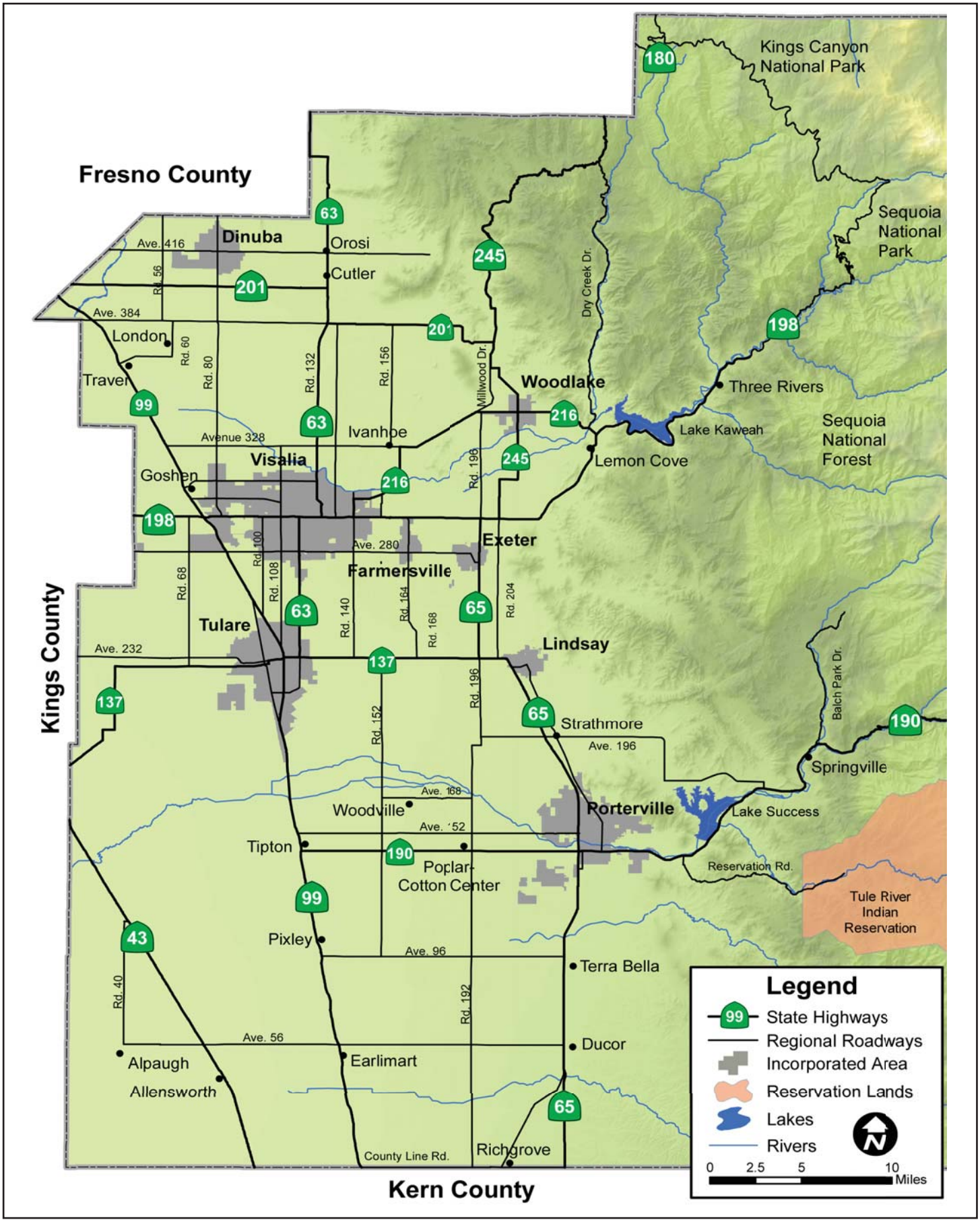

SOURCE: Tulare County Association of Governments, 2018

FIGURE **3.0-2**

IMPACT SCIENCES

Tulare County Regional Road System

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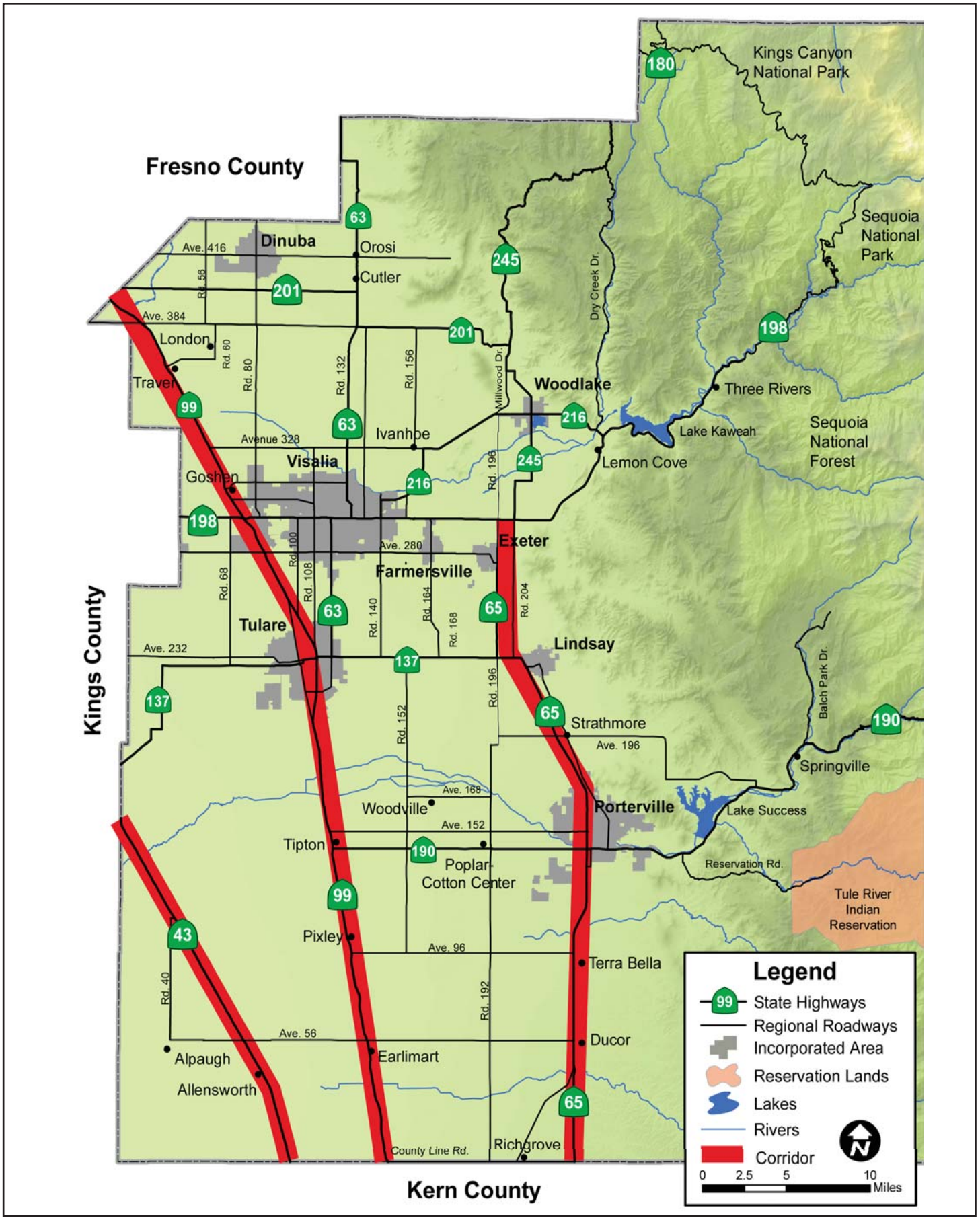


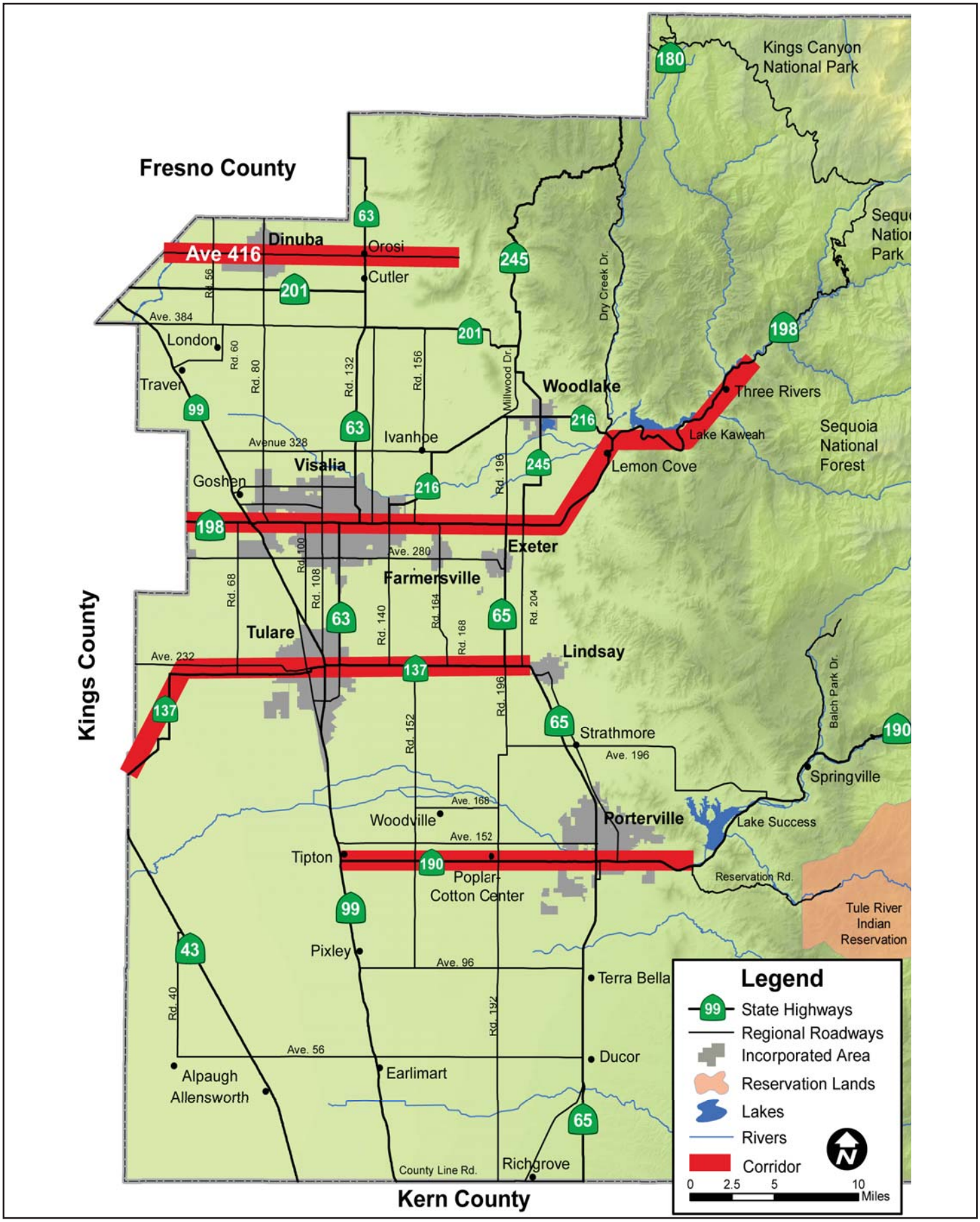
SOURCE: Tulare County Association of Governments, 2018

FIGURE **3.0-3**

IMPACT SCIENCES

Tulare County North-South Regional Corridors

1290.001•04/18



SOURCE: Tulare County Association of Governments, 2018

FIGURE **3.0-4**

IMPACT SCIENCES

Tulare County East-West Corridors

1290.001•04/18

3.2.1 RTP Requirements Overview

Federal transportation planning regulations (23 CFR Parts 450 and 771; 49 CFR Part 613) require that RTPs have at least a 20-year horizon. For the 2018 RTP/SCS TCAG has selected a horizon year of 2042. The federal metropolitan transportation planning process provides for consideration of the following federal planning factors:

- Support the economic vitality of the metropolitan area, especially by enabling global competitiveness, productivity, and efficiency;
- Increase the safety of the transportation system for motorized and non-motorized users;
- Increase the security of the transportation system for motorized and non-motorized users;
- Increase accessibility and mobility of people and freight;
- Protect and enhance the environment, promote energy conservation, improve the quality of life, and promote consistency between (regional) transportation improvements and State and local planned growth and economic development patterns;
- Enhance the integration and connectivity of the transportation system, across and between modes, for people and freight;
- Promote efficient system management and operation;
- Emphasize the preservation of the existing transportation system;
- Improve the resiliency and reliability of the transportation system and reduce or mitigate stormwater impacts of surface transportation; and
- Enhance travel and tourism.

In addition, federal Clean Air Act transportation conformity requirements apply in all MPO nonattainment and maintenance areas under Section 176(c) of the Clean Air Act (CAA), as amended. "Transportation conformity" requires that federal funding and approval are given to transportation plans, programs and projects that are consistent with the air quality goals established by a State Implementation Plan (SIP). For MPO nonattainment regions, the MPO, Federal Highway Administration (FHWA), and Federal Transit Administration (FTA) are responsible for making the RTP conformity determination.

Transportation investments in the region that receive state and federal funds or require federal approvals must be consistent with the RTP and, when funded, included in the Federal Transportation Improvement Program (TIP). The TIP covers four years and is updated biennially on an even year cycle. A TIP represents the immediate, near-term commitments of an RTP.

The state requirements for RTPs (Section 65080 of the California Government Code) largely mirror the federal requirements and require Metropolitan Planning Organizations (MPOs)/Regional Transportation Planning Agencies (RTPAs) in urban areas to adopt and submit an updated RTP to the California Transportation Commission (CTC) and the California Department of Transportation (Caltrans) every four years. To ensure a degree of statewide consistency in the development of RTPs, the CTC under Government Code Section 14522 prepared RTP Guidelines.[1] The most recently adopted guidelines by the CTC are the 2017 Regional Transportation Plan Guidelines for Metropolitan Planning Organizations. The adopted guidelines include a requirement for program level performance measures, which include objective criteria that reflect the goals and objectives of the RTP. As mentioned above, pursuant to SB 375, TCAG is required to submit a Sustainable Communities Strategy (integrated with the RTP) to CARB for the purpose of determining whether the GHG reduction targets have been met (see discussion of targets below).

3.2.2 Regional Transportation System[2]

Population growth in the County is increasing demands on the existing transportation system. In some cases, traffic has exceeded roadway capacity and measures are needed to relieve congested areas. Maintenance of existing facilities has also become a growing issue of concern. Maintenance needs on the existing transportation system greatly exceed available funds.

Tulare County has increased efforts to expand active transportation, including bicycle and pedestrian projects, as well as numerous improvements in public transit. Automobile use and continued growth of miles traveled per capita has continued to increase demand on transportation facilities and contributes to the need for additional capacity and maintenance of the regional road system.

Transportation projects will be needed to relieve congestion, improve air quality, and reduce the number of daily trips on County roadways. By using Transportation System Management (TSM), Transportation Demand Management (TDM), and Transportation Control Measures (TCMs), and by encouraging development and improvement of transit and active modes of transportation, projections indicate that the circulation system, within Tulare County, will operate more efficiently as the RTP period progresses. One measure of this, as derived from the Sustainable Communities Strategy scenario metrics, is that the preferred scenario is forecast to reduce average daily per capita regional VMT by 6.25%.[3]

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1 2017 Regional Transportation Plan Guidelines for Metropolitan Planning Organizations http://www.dot.ca.gov/hq/tpp/offices/orip/rtp/docs/2017RTPGuidelinesforMPOs.pdf

2 The information contained in this section is largely obtained from the 2018 RTP/SCS.

3 Based on modeling results for the Preferred (Blueprint) Scenario. See SCS Technical Methodology, Appendix 43 to the Draft 2018 RTP/SCS.

3.2.3 San Joaquin Valley Regional Blueprint

The San Joaquin Valley Regional Blueprint[4] integrated the Tulare Blueprint[5] (see next section) with the eight county grassroots blueprint efforts, developed by the seven other RTPAs. The RTPAs collaborated to develop a long-term strategy for the future of the eight-county region.

Adopted in 2009, the San Joaquin Valley Regional Blueprint effort included the Kern Council of Governments (COG), Fresno COG, Kings County Association of Governments, Madera County Association of Governments, Merced County Association of Governments, San Joaquin COG, Stanislaus COG, and Tulare County Association of Governments to develop voluntary, long-term regional growth principles for the future of the eight-county region.

The valley-wide Blueprint identified 12 voluntary-growth principles:

- Create a range of housing opportunities and choices;
- Create walkable neighborhoods;
- Encourage community and stakeholder collaboration;
- Foster distinctive, attractive communities with a strong sense of place;
- Make development decisions predictable, fair, and cost-effective;
- Mix land uses;
- Reserve open space, farmland, natural beauty, and critical environmental areas;
- Provide a variety of transportation choices;
- Strengthen and direct development toward existing communities;
- Take advantage of compact building design;
- Enhance the economic vitality of the region; and
- Support actions that encourage environmental resource management.

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4 San Joaquin Valley Blueprint Planning Process. *San Joaquin Valley Blueprint Integration, Final Report*. Website accessed on April 24, 2018. http://www.valleyblueprint.org/files/BPI_FinalReport2013-07.pdf

5 Tulare County Regional Blueprint, May 2009. http://valleyblueprint.org/files/Tulare050109.pdf

3.2.4 Tulare County Regional Blueprint

In 2007, the member agencies of TCAG initiated the process of the Tulare County Regional Blueprint.[6] This was motivated, in part, by the recognition that it would ultimately be up to the County and the cities to give the broad principles of a San Joaquin Valley Blueprint form and reality at the local level. The Tulare County Regional Blueprint was the vehicle, supported by TCAG, of collaboration and public outreach to develop this local vision. This process included consultation with partner agencies at the regional (such as the SJV Air District), state and federal level. The Tulare County Regional Blueprint was adopted by the TCAG Governing Board in May of 2009. This planning effort indicates the existing, locally-based impetus for addressing transportation and land use planning issues at the regional scale.

The 2018 RTP/SCS is based on the Blueprint scenario. It consists of intensified land use distribution that concentrates forecasted population and employment growth in urban areas. The transportation network would include increased highway capacity, local street capacity, active transportation, and investments in transit to focus on an increasingly urban growth pattern.

3.2.5 SB 375 Requirements

SB 375, also known as the Sustainable Communities Strategy and Climate Protection Act, was passed by the State legislature in 2008. It requires that each MPO demonstrate how its region will integrate housing, land use, and transportation in order to meet GHG reduction targets set by the State. This is done through the development of a Sustainable Communities Strategy (SCS).

In addition, SB 375 created the following requirements:

- The CTC is required to maintain guidelines for the travel demand models that MPOs must develop for use in the preparation of their required RTPs;
- CARB is required to develop and periodically update regional GHG emission reduction targets for both automobiles and light trucks for the years 2020 and 2035 by September of 2010 (this has been completed);
- An SCS is a required component of the RTP so that the MPO can demonstrate how it will meet the regional GHG targets;
- A public participation plan must be developed by the MPO for inclusion in the SCS. This must include meetings, hearings, workshops, and other types of outreach;
- The MPO must submit the SCS to the ARB for review upon adoption; and

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6 San Joaquin Valley Blueprint Planning Process. *County Level Blueprint Process*. Website Accessed April 24, 2018. http://www.valleyblueprint.org/planning-process.html.

- CARB must then review the SCS to determine if it would meet the GHG targets upon implementation.

CARB's adopted targets for each of the eight MPO's in the San Joaquin Valley applicable to the current planning cycle are a 5 percent reduction from 2005 per capita emissions levels by 2020 and a 10 percent reduction from 2005 per capita emissions levels by 2035. These targets apply to on-road light-duty trucks and passenger vehicle emissions. For the next TCAG RTP/SCS cycle, CARB recently raised these targets to 13 percent reduction by 2020 and 16 percent reduction by 2035.[7]

Local governments retain their local land use planning and regulatory authority SB 375; they can choose to implement SCS land use polices, but are not required to do so.. The 2018 RTP/SCS is a regional policy foundation upon which local governments can build if they so choose. In addition, SB 375 requires that RTP/SCS forecasted regional development patterns are consistent with the eight-year regional housing needs established through the Regional Housing Needs Allocation (RHNA) process under State housing law.

3.3 PURPOSE AND NEED FOR PLAN; PROJECT OBJECTIVES

3.3.1 Purpose and Need

The purpose of the 2018 RTP/SCS is to provide a clear, long-term vision of the regional transportation goals, policies, objectives, and strategies for the Tulare County region while at the same time providing land use strategies to reduce per capita GHG emissions as required by SB 375. The necessity for the RTP component of the 2018 RTP/SCS is driven by the need to plan for improvements to the aging regional transportation system and preserve its long-term viability in light of the projected population growth.

The 2018 RTP/SCS reduces per capita GHG emissions as required by SB 375. The 2018 RTP/SCS identifies infrastructure projects and improvements to reduce traffic and congestion. The circulation system in Tulare County plays a significant role in the economy by moving goods and people. A rural region, Tulare County is dependent on local highways, streets, roads, and railways to meet basic transportation needs. Goods movement is specifically dependent on road conditions and capacity. Tulare County and its cities have implemented programs to reduce congestion and improve the efficiency of highways, streets, and roads network. Transit and active modes of transportation, such as bicycling and walking, are becoming a larger share of the transportation system.

The 2018 RTP/SCS is a blueprint for improving the quality of life for residents of Tulare County by planning for wise transportation investments and informed land use choices. The Plan aims to achieve

7 https://www.arb.ca.gov/cc/sb375/sb375_target_update_final_staff_report_feb2018.pdf, accessed April 11, 2018.

variety and efficiency in travel choices, as well as a safe, secure, and efficient transportation system that would provide improved mobility and access. The Plan is also intended to improve air quality, improve health, and reduce GHG emissions consistent with SB 375 requirements. The plan achieves its overall objectives by combining transportation investment and policies with integrated land use strategies intended to reduce VMT and emissions.

Over the lifetime of the 2018 RTP/SCS, TCAG forecasts that there will be an additional 133,127 people added to the region. The 2018 RTP/SCS is based on growth forecasts in the region through the year 2042 as shown in **Table 3.0-1, 2042 Population, Households, and Employment**. (These growth forecasts would occur whether or not the 2018 RTP/SCS is adopted.)

Table 3.0-1
2042 Population, Households, and Employment

	Population		Households		Employment	
	Existing (2017)	Plan (2042)	Existing (2017)	Plan (2042)	Existing (2017)	Plan (2042)
TCAG	471,842	604,969	148,898	186,333	176,289	220,210

Source: TCAG 2018, based on California Department of Finance. Demographic Research Unit. 2018. State and county population projections 2010-2060 [computer file]. Sacramento: California Department of Finance. January 2018. TCAG Base Year 2015 Regional Travel Demand Model Socio-Economic Detail inputs.

3.3.2 Project Objectives

The primary objective of the 2018 RTP/SCS is to comply with applicable regulatory requirements, including federal transportation planning law, CTC Guidelines and SB 375, including SB 375's regional GHG reduction targets. TCAG's specific objectives for the 2018 RTP/SCS are to additionally ensure that the SCS and the transportation system planned for the TCAG region accomplishes the following:

- Serves regional goals, objectives, policies and plans.
- Responds to community and regional transportation needs.
- Promotes energy efficient, environmentally sound modes of travel and facilities and services.
- Promotes equity and efficiency in the distribution of transportation projects and services.

Specific objectives of the 2018 RTP/SCS are as follows:[8]

- Provide an efficient, integrated, multi-modal transportation system for the movement of people and goods that enhances the physical, economic, and social environment in the Tulare county region
- System Performance: Develop an efficient, maintained, and safe circulation network that maximizes circulation, longevity, and fiscal responsibility while minimizing environmental impacts.
- Transit: Provide a safe, secure, coordinated and efficient public transit system that can reasonably meet the needs of residents.
- Aviation: Support development of a regional system of airports that meets the air commerce and general aviation needs of the county.
- Rail: Promote safe, economical, convenient rail systems and schedules that meet the needs of passenger and freight services in the region.
- Goods Movement: Provide a transportation system that efficiently and effectively transports goods to, from, within, and through Tulare County.
- Active Transportation: Improve, enhance, and expand the region's bicycle and pedestrian systems and connectivity to those systems, while keeping them safe and convenient.
- Regional Roads and Corridors: Preserve and enhance regional transportation roads and corridors.
- Air Quality and Greenhouse Gases: Promote the improvement of air quality and GHG reductions through congestion management, coordination of land use, housing, and transportation systems, provision of alternative modes of transportation, and provision of incentives that reduce vehicle miles traveled.
- Public Health: Promote public health in the region by providing opportunities for residents to bicycle and walk to destinations such as home, work, school, medical facilities, and commercial and service businesses.
- TSM Strategies, TDM Measures, TCMS, and ITS Programs: Improve transportation mobility and operations by improving and utilizing TSM strategies, TDM measures, TCMS and ITS programs.
- Environmental Justice: Ensure that transportation investments do not discriminate on the basis of race, color, national origin, sex, age or disability.
- Emerging Technologies: Support the development and implementation of emerging technologies in the surface transportation system.
- SCS: Develop an integrated land use plan that meets CARB targets.

[8] TCAG 2018 RTP/SCS Goals and Objectives

3.4 PROJECT LOCATION AND SITE CHARACTERISTICS

Generally, the western portion of Tulare County is located within California's Southern San Joaquin Valley and the eastern portion is generally located within the Sierra Nevada. Encompassing 4,839 square miles, the County is situated along State Route (SR)-99 approximately 175 miles north of Los Angeles. The highest point is located at 14,505 feet at the summit of Mount Whitney on the eastern edge of the County. As of 2017, Tulare County's estimated population is approximately 471,842 (see **Table 3.0-1**).

Tulare County is the seventh largest (in terms of area) county in California and is 93 miles in length from the northwestern boundary to the southeastern boundary. Current population is expected to grow to 604,969 persons by 2042 (a difference of 133,127 persons), the horizon year for the RTP. There are eight incorporated cities within Tulare County: Dinuba, Exeter, Farmersville, Lindsay, Porterville, Tulare, Visalia, and Woodlake.

Tulare County is comprised of two separate regions based on significant variations in terrain, climate, geographic and environmental factors. The regions are identified as follows:

Valley Region: The southern San Joaquin Valley below an elevation of 1,000 feet mean sea level.

Mountain Region: The easternmost and central portion of the County above the 1,000-foot mean sea level in the Sierra Nevada Mountains.

3.5 PROJECT DESCRIPTION

The 2018 RTP/SCS is comprised of the following elements:

Policy Element: The Policy Element identifies transportation goals, objectives, and policies that will help meet the needs of the region. These goals, objectives, and policies are established to determine specific courses of action to guide Tulare County toward implementation of the 2018 RTP/SCS. The areas covered are quite expansive, from items such as bicycle, goods movement, and regional road system polices, to policies and objectives to achieve public health, public outreach, and environmental justice goals.

Action Element: The Action Element delineates the current program of highway, streets and roadways, transit, bikeway, and passenger rail projects proposed by the various jurisdictions in the TCAG region. These include programs and projects intended to improve roadway capacity/vehicular flow, enhance transit operations, improve safety, support transportation planning and travel demand management, promote high occupancy vehicle use and improve multimodal and intermodal facilities. Criteria are also established for evaluating, selecting, ranking and measuring the performance of projects in the 2018 RTP/SCS.

Individual transportation projects included in the 2018 RTP/SCS are listed in the Action Element. The 2018 RTP/SCS is a "fiscally constrained" plan which means that the projects included have committed, available, or reasonably available funding sources (see **Table 3.0-8, Detailed 2018 RTP/SCS Transportation Projects List,** presented at the end of this chapter).

The 2018 RTP/SCS also contains a listing of "unconstrained" projects. Unlike the constrained list of projects included in the Plan, the unconstrained projects present a vision for regional improvements beyond committed, available, or reasonably available funding sources. The unconstrained projects list also identifies additional projects that require study and consensus building before the decision can be made as to whether to commit the funding to include these projects in a future RTP's constrained plan.

This PEIR does not analyze the impacts of these unconstrained projects because they require further study, further planning, and/or additional funding. Their implementation is speculative at this point.

Financial Element: The purpose of the Financial Element is to provide assumptions of the cost and revenues necessary to implement the 2018 RTP/SCS. The assumptions include revenue estimates for specific governmental funding programs, (including the local sales tax measure (Measure R,) state, and federal funds), local contributions, license and fuel taxes, and development fees.

Sustainable Communities Strategy: The SCS identifies a forecasted land use pattern that, when integrated with the a transportation network, achieves CARB regional GHG reduction targets.

Valleywide Chapter: The Valleywide Chapter provides a regional perspective to transportation planning in the San Joaquin Valley. The chapter discusses demographic data relevant to the San Joaquin Valley region, such as population, educational attainment, median household income, etc. The chapter also outlines a number of valley-wide issues and areas of collaboration such as air quality, advocacy, goods movement, passenger rail and the SR-99 corridor.

3.5.1 Policy Element

The Policy Element identifies transportation goals, objectives, and policies that will help meet the needs of the region. These goals, objectives, and policies are established to determine specific courses of action to guide Tulare County toward implementation of the RTP.

Goals, Objectives and Policies

Comprehensive

GOAL: Provide an efficient, integrated, multi-modal transportation system for the movement of

people and goods that enhances the physical, economic, and social environment in the Tulare county region.

Objective: Develop and maintain a connected and multi-modal regional circulation network that is convenient, safe, and efficient.

Policies:

1. Encourage jurisdictions in Tulare County to consider bicycle lanes, public transit, transit-oriented and mixed-use development, pedestrian networks, rail and other complete streets development during updates of general plans and other local planning processes.
2. Implement a Complete Streets Program whereby agencies will prepare plans to accommodate all transportations users, including pedestrians, bicyclists, transit riders, and motor vehicle operators and riders, and implement those plans as aggressively as feasible.
3. Provide for continued coordination and evaluation of the planned circulation system among cities and the county.
4. Make road and bridge maintenance a high priority.

Objective: Support communities in developing walkable, bikeable, and transit-ready neighborhoods that work in tandem with motor vehicle facilities for a safe and comprehensive local circulation system for people of all levels of income and various availability of resources.

Policies:

1. Fund feasibility studies, complete streets studies, and community and neighborhood plans to evaluate and plan for transit readiness, walkability and bikeability, as funds are available.
2. Fund the development of capital improvement programs for complete streets and active transportation-type plans, as funds are available.
3. Provide funding as available for the implementation of complete streets and/or active transportation-type plans and related capital improvement programs as provided for in policies 1 and 2 above. Funding may include but is not limited to: Active Transportation Program (ATP) funds (including various safety, safe routes to schools, and transportation enhancement funds), Congestion Mitigation and Air Quality (CMAQ) funds, Cap and Trade funds, and others.
4. Ensure equitable access to effective and viable transportation options for all, regardless of race, gender, income, national origin, age, physical ability with a focus on benefitting the regions' most vulnerable populations and closing existing unmet

transportation gaps that are warranted.

5. Consider conducting barrier studies, consistent with state recommendations.

6. Improve first-mile/last-mile linkages near transit stops throughout the region, with special attention to disadvantaged communities.

Objective: Coordinate with transportation agencies across county borders to ensure an efficient flow of people and goods along key trade and interregional corridors.

Policy:

1. Support coordinated transportation planning and programming.

2. Participate in multi-regional efforts and organizations such as the California Association of Councils of Governments (CALCOG) and the Self-Help Counties Coalition.

3. Coordinate with adjacent counties and transit service providers to connect Tulare County residents with the locations and destinations needed, such as, airports, colleges and universities, and employment sites.

System Performance

GOAL: Develop an efficient, maintained, and safe circulation network that maximizes circulation, longevity, and fiscal responsibility while minimizing environmental impacts.

Objective: Develop an efficient regional road and circulation system that provides maximum achievable mobility and accessibility for vehicles, bicycles, pedestrians, and public transportation.

Policies:

1 Maintain a Level of Service C or better on rural roads and Level of Service D or better on urban roads.

2. Advocate and support planning studies and development of multi-use corridors.

3. Assist member agencies with completion of partial systems, such as gaps in bicycle paths and underserved locations requiring public transit.

Objective: Develop a safe and reliable regional road system.

Policies:

1. Give heightened consideration to safety improvement projects.

2. Monitor road conditions using the Highway Performance Management System (HPMS), local Pavement Management Systems (PMS), and traffic counts to determine circulation and road conditions on the regional road system.

3. Identify future regional road and circulation needs on an as-needed basis.

4. Evaluate intersections, bridges, interchanges, and rail grade crossings for needed safety improvements.

5. Develop funding strategies for safety projects in cooperation with Caltrans and member agencies.

Objective: Plan for and implement cost-effective transportation improvements which utilize all types of public funds, including federal, state, and local funds and funds allocated by formula, competitive grants, or other sources.

Policies:

1. Rank and score transportation projects based on regional significance, safety, cost effectiveness, environmental benefits, and project warrant based on specific funding guidelines, and Measure R project identification.

2. Coordinate local funding on regionally significant projects.

3. Develop alternate transportation improvements, such as roundabouts, when feasible.

4. Examine alternative funding sources for streets, roads, state highways, rail systems, transit, bicycle, pedestrian, and other transportation mode improvements.

5. Develop funding strategies based on TCAG's Congestion Management Program (CMP).

Objective: Develop a sustainable regional road and circulation system.

Policies:

1. Develop projects that are valuable to the regional road and circulation system that reduce vehicle miles traveled, improve level of service, contribute to a reduction in air quality pollutants and greenhouse gases, conserve agricultural land, habitat, groundwater recharge areas, and create safe travel corridors within the region.

2. Promote transit and active transportation usage and develop support facilities to accommodate and encourage increases in use of these modes.

3. Support the allocation of available funds for maintenance and deficiencies of the existing regional and local transportation systems.

4. Develop projects that meet required mitigation contained in the 2018 RTP/SCS Environmental Impact Report.

5. Incorporate, to the extent feasible, climate adaptation and

resilience into projects to ensure longevity of projects and prevent any unnecessary damage or adverse impacts resulting from climate change.

Objective: Ensure fiscal responsibility of public transportation funding.

Policies:

1. Complete performance audits that encompass transit, local, state, and federal funds evaluations for project development, delivery, and completion every three to five years for TCAG and its member agencies.
2. Complete a timely fiscal audit of TCAG and its member agencies every year.
3. Complete a Triennial Performance Audit every three years for transit performance and ensure that agencies are meeting the recommendations found in the audit and fulfilling the needs of their agencies.
4. Complete and/or review annual Transportation Development Act (TDA) audits.

Objective: Minimize environmental impacts of transportation projects and encourage the coexistence of nature and human circulation needs.

Policies:

1. Complete and adopt a Programmatic Environmental Impact Report (EIR) for the Regional Transportation Plan.
2. Review environmental documents on regional projects and pertinent development proposals.
3. Evaluate and assist agencies with mitigation possibilities, when feasible, working with measure R environmental funds and other funding opportunities, to assist with mitigation of road projects found in the RTP.
4. Use of natural infrastructure solutions is encouraged when feasible.

Objective: Support circulation projects that maintain and improve safety and security.

Policy:

1. Implement and encourage projects that improve circulation and lower accident rates on the regional road and circulation system.

Objective: Promote fair and equitable transportation improvements throughout the region.

Policy:

1. Develop and implement a project ranking system to be used when evaluating projects that identifies the need, equitability, safety, and project benefits for the region as a whole, taking into consideration funding program requirements, and guidelines and Measure R project identification.

Objective: Perform public outreach to ensure the reasonable satisfaction and meeting of needs of the public.

Policies:

1. Encourage public participation through each of the steps in regional project development and planning. May be performed by local agencies throughout environmental and other processes.
2. Publish public notices and hold hearings to allow the public to comment on regional road and circulation projects. May be performed by local agencies throughout environmental and other processes.
3. Provide a time for public comment at each TCAG Board meeting.
4. Encourage public participation through the public outreach campaign during the development of the RTP.

Transit

GOAL: Provide a safe, secure, coordinated and efficient public transit system that can reasonably meet the needs of residents.

Objective: Encourage and support the development of a safe, efficient, effective, and economical public transit system.

Policies:

1. Encourage development of a transit system that interconnects and coordinates with other modes of transportation (e.g. passenger rail, intercity bus, multi-jurisdictional transit, bicycle facilities, pedestrian walkways, etc.).
2. Encourage the cities of Visalia, Porterville, Lindsay, Exeter, Farmersville, Dinuba, Woodlake and Tulare to plan for and implement transit-oriented land use along the planned Cross Valley Corridor.
3. Require all transit plans to include evaluation and policies on transit safety and security.
4. Encourage transit agencies to annually review transit safety procedures.

5. Ensure transit agencies make use of all available federal, state, and local funding to sustain, expand, and improve local transit services, and ensure the timely and best use of those funds.

6. Encourage the consolidation of duplicate services within the region to make best use of funding and other resources.

7. Develop cohesion and cooperation among transit operators that will result in efficient and accessible transit service between and within communities.

8. Develop a minimum acceptable response time for transit Dial-a-Ride service and maximum delay times for fixed route service.

9. Develop a network of fast, convenient, high quality transit services that are competitive with the cost and time to drive alone during peak periods.

10 Utilize Cap and Trade funds available for transit, if available, for projects in Tulare County.

11. Complete Triennial Performance Audits of all transit agencies and ensure that needed improvements are implemented as necessary as feasible.

12. Encourage employers to offer incentives, such as awards, flexible hours, and financial incentives for employees who use transit for their work commute.

13. Include transit networks and data in the Transportation Demand Model for use in evaluating the transit system.

14. Coordinate Intelligent Transportation Systems (ITS) technologies amongst transit agencies to ensure systems compatibility and to enable the use of uniform regional passes and other fare media.

Objective: Support the increased coordination of all transit services in Tulare County.

Policies:

1. Support transit agencies in the coordination and consolidation of transit operations, which may include but is not limited to: provision of transit service, administration, facilities management, procurement procedures, fare structures, reporting, grant management, etc.

2. Support expansion and improvement of transit service between jurisdictions in Tulare County and connectivity with adjacent counties and services alongside the continued development of jurisdiction-specific transit service.

Objective: Provide information and receive input from residents regarding transit needs within the region and work to implement feasible transit improvements.

Policies:

1. Encourage each transit agency to further their citizen involvement processes, as well as participate in Social Services Transportation Advisory Committee (SSTAC) and Transit Forum meetings.
2. Update and adopt unmet transit needs definitions at least every five years, and seek increasing public participation in the transit unmet needs process.
3. Work with local transit agencies to improve public outreach concerning the use of transit as an alternative to automobile travel.
4. Work with social services agencies on the development of the Coordinated Public Transit – Human Services Transportation Plan.
5. Coordinate the provision of Mobility Management services in the Tulare County region.

Aviation

GOAL: Support development of a regional system of airports that meets the air commerce and general aviation needs of the county.

Objective: Include aviation connectivity in planning for region-wide transportation.

Policies:

1. Encourage efforts to ensure that compatible land uses adjacent to airports are consistent with the Tulare County Comprehensive Airport Land Use Plan or the respective city's certified Airport Master Plan.
3. Coordinate airport planning with other components of the circulation system.

Rail

GOAL: Promote safe, economical, convenient rail systems and schedules that meet the needs of passenger and freight services in the region.

Objective: Support the growth of passenger rail systems that serve residents of Tulare County.

Policies:

1. Support the development, extension, and maintenance of passenger rail service, including, but not limited to, Cross Valley Rail, High Speed Rail, and Amtrak.
2. Ensure that the high-speed rail system supports Tulare County in achieving its economic, environmental, land use, and mobility goals.
3. Determine potential Bus Rapid Transit alignments and undergo

feasibility analysis, as practicable.

4. Participate in and support the activities of the San Joaquin Joint Powers Authority in improving services on the San Joaquins Amtrak route.

Objective Support the maintenance, preservation, and expansion of freight rail systems in Tulare County.

Policies:

1. Support continued improvement of freight rail service and freight transfer points within Tulare County.
2. Coordinate with the Public Utilities Commission to notify Tulare County of any rail line abandonment proposals in order to evaluate possible impacts on the transportation system and consider preservation possibilities or alternative uses for such facilities.
3. Advocate for maintaining freight rail lines in the Tulare County region and prevent rail abandonments when feasible.
4. Utilize Cap and Trade funds for goods movement rail projects, if available, for projects supporting freight rail systems that benefit Tulare County.
5. Partner with owners and operators of all types of rail systems in order to result in safe, efficient, and beneficial rail systems for all users.

Goods Movement

GOAL: Provide a transportation system that efficiently and effectively transports goods to, from, within, and through Tulare County.

Objective: Encourage the interaction of truck, rail, and air freight transportation.

Policies:

1. Work with Caltrans and adjacent regions in the development of intermodal corridors.
2. Include comprehensive goods movement planning in the RTP.
3. Implement the San Joaquin Valley Goods Movement Plan.

GOAL: Improve goods movement within the region to increase economic vitality, meet the growing needs of freight and passenger services, and improve traffic safety, air quality, and overall mobility.

Objective: Increase the use of freight rail transportation.

Policies:

1. Restore and maintain freight rail service in Tulare County as a significant transportation mode, providing service to commerce and industry.

2. Coordinate with other agencies to restore and enhance rail service to existing facilities in order to attract new industries to Tulare County.

3. Coordinate with regional partners to extend track in west Visalia Industrial Park and promote the development of an inter-modal yard to transition from truck to freight rail.

Objective: Support an efficient truck transportation system.

Policies:

1. Give special consideration to transportation projects that improve air quality and the operational efficiency of goods movement.

2. Explore the possibility of a zero emission freight corridor on SR 99 utilizing a catenary hybrid-electric system through a valley-wide feasibility study.

Active Transportation

GOAL: Improve, enhance, and expand the region's bicycle and pedestrian systems and connectivity to those systems, while keeping them safe and convenient.

Objective: Encourage bicycle usage in Tulare County by providing safe and convenient bike routes and facilities.

Policies:

1. Update the Regional Active Transportation Plan at least every five to seven years or as appropriate to support the competiveness of local proposals in the Active Transportation Program application cycle and to identify bicycle routes that are appropriate for commuter, recreational, and student riders.

2. Convene public outreach and implement strategies for Share the Road concepts.

3. Designate and design regional bicycle routes that reduce conflicts with motor vehicles.

4. Encourage local agency review of bicycling needs with all new development.

5. Encourage local agencies to support implementation of bicycle support facilities such as bike racks, showers, and other facilities during the project review process.

6. Coordinate bicycle planning and implementation with other modes of transportation, particularly with transit.

7. Support development of designated regional bicycle paths adjacent to or separate from commute corridors, connecting cities and communities.

8. Support implementation of local bicycle and trail plans.

9. Utilize Cap and Trade funds available for bicycle and pedestrian projects, if available, for projects in Tulare County.

10. Support the closure of gaps in the bicycle and pedestrian systems to improve connectivity and attractiveness of these modes of transportation.

11. Include active transportation modes in the Transportation Demand Model, when feasible.

Objective: Educate, incentivize, and enable residents to utilize active modes of transportation.

Policies:

1. Encourage employers to offer incentives, such as awards, flexible hours, and financial incentives for employees who utilize active modes of transportation for their work commute.

2. Promote the placement of compatible land uses in close proximity to each other and design them to provide for a high quality environment where residents will enjoy walking and/or bicycling to their destinations.

3. Encourage and support maintenance and enhancement of existing bicycle and pedestrian facilities.

4. Encourage utilization of highway, streets, and road shoulders for bicycle use and pedestrian access when safe.

5. Develop collaborative partnerships with irrigation districts, rail companies, and other agencies to utilize canals, waterways, abandoned right of ways, and other land/corridors as multi-use trails.

6. Monitor key corridors for bicycle usage and develop strategies for improvement.

Objective: Support safe pedestrian walkways within the transportation network in Tulare County.

Policies:

1. Encourage removal of barriers (walls, fences, etc.) for safe and convenient movement of pedestrians. Special emphasis should be placed on Americans with Disabilities Act (ADA) compliance.

2. Encourage cities to consider needs of pedestrians and people with disabilities during the project review process and policies in their general plans.

Regional Roads and Corridors

GOAL: Preserve and enhance regional transportation roads and corridors.

Objective: Coordinate local and regional planning of new development that minimizes and/or mitigates impacts along regional corridors.

Policy:

1. Support development that identifies and implements mitigation measures to maintain or improve the existing transportation system condition and efficiency.

Objective: Evaluate and consider current and future congestion conditions on the regional road network when investing in the transportation system.

Policies:

1. Support improvements of critical segments and interchanges along the State Highway System.
2. Encourage frontage roads along state highways, where appropriate.
3. Support improvements on regional roads to include safe accessibility for active modes of transportation.

Objective: Consider safety, efficiency, and connectivity when investing in the regional road network.

Policies:

1. Improve safety and capacity of vital east-west corridors.
2. Encourage restriction of direct access along regionally significant corridors by limiting the spacing of signalized intersections to 1/2-mile intervals and interchanges to one mile.

Air Quality and Greenhouse Gases

GOAL: Promote the improvement of air quality and greenhouse gas reductions through congestion management, coordination of land use, housing, and transportation systems, provision of alternative modes of transportation, and provision of incentives that reduce vehicle miles traveled.

Objective: Encourage coordinated development to achieve an improved jobs-housing balance in the regional.

Policies:

1. Encourage mixed-use developments in urbanized areas.
2. Encourage provision of an adequate supply of housing for the region's workforce and adequate sites to accommodate business expansion to minimize interregional trips and long-distance commuting.

Objective: Plan for and implement coordination of land use and alternative modes of transportation that would reduce vehicle miles traveled by providing residents transportation options in multiple modes.

Policy:

1. Support coordinated alternative modes of transportation including transit, pedestrian, bicycle, and rideshare and vanpool

programs.

Objective: Prioritize projects that contribute to improved air quality and reduced greenhouse gas emissions.

Policies:

1. Implement small, incremental, project-level improvements in air quality that will add to substantial improvements in air quality.
2. Support the implementation of alternative fuel and other power sources for surface transportation, such as Compressed Natural Gas and electricity.
3. Achieve United States Environmental Protection Agency National Ambient Air Quality Standards (NAAQS) by required attainment dates, or earlier if practicable.
4. Promote adoption of clean, renewable energy technologies to ensure a reliable energy supply, enhance the region's economy, and improve air quality.
5. Expand awareness of the need to reduce greenhouse gases and incorporate the latest scientific information into planning efforts.
6. Support and participate in efforts and coalitions promoting use of Cap and Trade funding for projects that help reduce greenhouse gas emissions in Tulare County.
7. Utilize Cap and Trade funds, if available, for various projects in Tulare County that will contribute to the reduction of greenhouse gas emissions.

Public Health

GOAL: Promote public health in the region by providing opportunities for residents to bicycle and walk to destinations such as home, work, school, medical facilities, and commercial and service businesses.

Objective: Consider effects on public health when investing in the transportation system, giving specific attention to bicycle and pedestrian projects.

Policies:

1. Support investment in bicycle and pedestrian systems, giving attention to projects and networks that will allow residents to walk and bicycle to frequented destinations, including transit stops.
2. Provide outreach to employers regarding the benefits of active transportation, and suggest measures employers can use to encourage its use.

TSM Strategies, TDM Measures, TCMS, and ITS Programs

GOAL: Improve transportation mobility and operations by improving and utilizing TSM strategies, TDM measures, TCMS and ITS programs.

Transportation System Management (TSM)

Objective: Improve vehicular flow and efficiency by promoting and programming operational improvement projects.

Policies:

1. Encourage adaptive signal timing and/or coordination programs in urbanized areas.
2. Support implementation of bus pullouts for stops on busy roadways.
3. Encourage removal of on-street parking in heavily congested areas.
4. Recommend that traffic is channeled and access is controlled on arterials and major collectors.
5. Support installation of adequate left and right turn pockets to allow increased vehicle queuing/stacking, as necessary.
6. Encourage improvements in design of signalized intersections to improve turning for large vehicles.
7. Support passing lanes, roundabout construction, and other operational improvements when warranted.
8. Encourage bicycle-friendly loop detectors at intersections.

Transportation Demand Management (TDM)

Objective: Promote employer and personal strategies that will encourage the reduction of vehicle miles traveled.

Policies:

1. Encourage employers to utilize policies such as flex hours and telecommuting.
2. Support outreach programs that encourage carpooling/rideshare, transit use, bicycling, walking, and vanpools as alternatives to the single occupant vehicle.

Transportation Control Measures (TCMs)

Objective: Support the reduction of automotive emissions and fuel consumption associated with urban travel.

Policies:

1. Evaluate the feasibility of implementing Express Bus and/or transit bus preemption/priority.
2. Evaluate future need for ramp metering.
3. Continue to coordinate and implement the College of Sequoias student transit pass program and the Tulare County Regional T-Pass.

4. Continue to participate in the Calvans vanpool program, providing incentives, if feasible.
5. Promote and implement projects using (or composed of) traffic calming devices and strategies.
6. Encourage cities to consider parking policies, including pricing and development parking requirements.
7. Encourage cities to provide signal prioritization for transit vehicles.

Intelligent Transportation Systems (ITS)

Objective: Encourage the use of Intelligent Transportation Systems (ITS) technology by participating in the upkeep and implementation of the San Joaquin Valley Intelligent Transportation System Strategic Deployment Plan and the local Urban Area ITS Plan(s).

Policies:

1. Periodically update Tulare County Region's Urbanized Area ITS Plan(s).
2. Support and update the San Joaquin Valley ITS Strategic Deployment Plan as needed.
3. Support Intelligent Transportation Systems for upgrading state highway interchanges from rural to urban standards.
4. Coordinate ITS improvements and infrastructure with public safety agencies.

Environmental Justice

GOAL: Ensure that transportation investments do not discriminate on the basis of race, color, national origin, sex, age or disability.

Objective: Require regional transportation planning that is consistent with Title VI and Environmental Justice Federal Requirements.

Policy:

1. Assure that transportation project benefits and burdens are not inequitably distributed throughout the region.

Objective: Include targeted outreach to environment justice communities in transportation planning.

Policies:

1. Provide environmental justice communities opportunities for input into transportation plans, programs, and projects in a manner consistent with Title VI of the 1964 Civil Rights Act and Executive Order 12898 on Environmental Justice, including the prohibition of intentional discrimination and adverse disparate impact with regard to race, ethnicity or national origin.

2. Provide outreach to various environmental justice communities within Tulare County, including, but not limited to, the Tule River Tribe and primarily Spanish-speaking communities.
3. Avoid, minimize, or mitigate disproportionately high and adverse human health environmental effects, including social and economic effects, on minority populations and low-income populations.
4. Ensure the full and fair participation by all potentially affected communities in the transportation decision-making process.

Emerging Technologies

GOAL: Support the development and implementation of emerging technologies in the surface transportation system

Objective: Monitor and support, as applicable, developing transportation technologies.

Policies:

1. Support electric vehicle and facilities conversion in public transportation.
2. Monitor the emergence of autonomous vehicles and evaluate potential impacts to the transportation system.
3. Support technologies that enhance the safety of the transportation system.

Objective: Adapt and plan for significant and potentially rapid changes in transportation technology.

Policies:

1. Plan for electric vehicle infrastructure and implementation.
2. Evaluate effects of autonomous vehicles on infrastructure and technology, and assist agencies in planning and developing policies to accommodate this technology, as appropriate.
3. Explore the possibility zero emissions freight corridor on SR 99.

3.5.1 Description of the Transportation Components Contained within the 2018 RTP/SCS

The circulation system in Tulare County plays a significant role in the economy by moving goods and people. A rural region, Tulare County is dependent on local highways, streets, roads, and railways to meet basic transportation needs. Goods movement is specifically dependent on road conditions and capacity. Tulare County and its cities have implemented programs to reduce congestion and improve the

efficiency of our highways, streets, and roads network. Transit and active modes of transportation, such as bicycling and walking, are becoming a larger share of the transportation system. A summary of the major transportation features of the County is described below based on the 2018 RTP/SCS Action Element and a listing of the RTP constrained transportation projects is included in **Table 3.0-8**.

Goods Movement System Improvements

Recognizing that agriculture is the region's economic base, Tulare County strives to maintain and improve the transportation infrastructure that is essential to this industry. For years it has become increasingly difficult to keep pace with necessary maintenance on existing facilities due to financial constraints. In some cases, deferred maintenance has become evident. The movement of farm-to-market and other truck dependent industries results in high maintenance costs that restrict funds that otherwise would be used for much needed network expansion.

Agriculture accounts for a large percentage of commodity movement and truck traffic within and through Tulare County. In 2015, Tulare County farms produced more than $5.6 billion in gross revenue as estimated by the County Agricultural Commissioner's office. Tulare County continues to be the top dairy producing county in the nation. Unlike other forms of agriculture, dairies harvest and transport their product every day of the year. Dairy trucks also have higher weight loads compared to other trucks. This causes significant degradation of roads used by the dairy industry. Other major types of commercial truck travel in the region include: retail distribution, construction, gravel mining, delivery to and from industrial facilities, gasoline and fuel distribution, and household goods movement. Destinations for commodity movement in the region include farms, packing and processing plants, cold storage facilities, grain elevators, manufacturers, and distribution centers. There has also been a trend for warehouses and large distribution centers to locate in this area due to high costs of conducting business in larger metropolitan areas, land availability and reduced cost, and the central location of Tulare County between the Los Angeles and San Francisco metropolitan areas.

Rail lines are also often an integral part of major corridors and a very efficient mode of transportation for moving many types of goods. Other modes of commodity movement in the region include aviation and pipelines.

Travel Patterns

Travel demand in Tulare County is predicted via an assessment of current and future traffic estimates using field surveys and traffic counts, Census, Department of Finance (DOF) and other data sources, local plans, and the Tulare County Regional Transportation Model (TCAG Model). In this region, as in most, commuters and student trips make up the bulk of the peak hour trips in the morning and evening.

However, retail, recreational, agricultural, mining, and industrial land uses are also major generators of traffic. For example, commuters, shoppers, and people in need of services in both Tulare and Visalia impact the corridors between the cities.

Examples of demand generated by agriculture include truck trips from fields to processing plants, milk producers to processors, processed goods en route to markets, and raw material shipments such as packaging materials to be used by processing plants and aggregate for construction. Per Caltrans traffic counts, many of the state highways in Tulare County are experiencing truck traffic that accounts for 8 percent to 26 percent of all vehicle trips (SR-65, SR-99, SR-198). Some county regional roads such as Road 80 and Avenue 416 also experience heavy truck traffic (18 percent to 19 percent of all vehicle trips). Each segment on the regional road system has its own unique mix of traffic and needs and as development continues demands for all types of transportation modes on the network will continue to increase.

Projections indicate that this region can expect population growth, and therefore travel demand, to increase steadily through the horizon year of the 2018 RTP/SCS. Since 1950, Tulare County population has experienced periods of higher and slower growth with a 1.9 percent annualized growth rate. As more housing is constructed, and employers move into Tulare County to accommodate (and stimulate) population growth, travel demand is anticipated to continue to increase. Local jurisdictions have developed land use plans to accommodate growth within their boundaries. The 2018 RTP/SCS addresses plans to accommodate the short and long-term future needs of the transportation system in the region.

Transportation Demand Management

TDM strategies work through changing human behavior, including how people travel to work, school, shopping, and other services. Transit systems, bicycles, pedestrian facilities, and vanpools are a priority with the state and county in reducing congestion. TDM consists of managing behavior regarding how, when and where people travel. TDM strategies are designed to reduce vehicular trips during peak hours by shifting trips to other modes of transportation and reduce trips by providing jobs and housing balance. TDM is specifically targeted at the work force that generates the majority of peak hour traffic. TCAG and its agencies regularly partner with adjacent counties to implement TDM strategies. TCAG is a supporter and member of the California Vanpool Authority (CalVans). CalVans is a service that provides vanpooling vehicles to people who work in various places where public transit may not go, such as to agricultural field working locations. Through outreach and education, TDM strategies can be implemented and used in the circulation system. However, in order to change traveling habits, employers must suggest and enable transportation alternatives that will accommodate the elimination or reduction of single vehicle occupant trips. Some of the TDM strategies TCAG participates in or encourages include the following techniques:

- Rideshare programs
- Transit usage
- Flex hours
- Emergency ride home programs
- Vanpools
- Bicycling & walking, including providing bicycle storage
- Telecommuting
- Economic incentives
- Locker rooms and showers
- Satellite work stations
- Subsidized transit

In Tulare County, the areas with the most severe traffic congestion and have the most potential candidates for TDM strategies include the Cities of Visalia, Tulare and Porterville. The City of Visalia, with a population of 133,151 in January 2017,[9] has the highest peak hour congestion in the County. The City of Tulare has a population of 64,661 in 2017.[10] Trips generated between residences and employment in Visalia and Tulare contribute to the congestion on the SR-63 (Mooney Boulevard) and the Demaree/ Hillman Corridors during peak hours. Both of these corridors have been widened to accommodate congestion and will require further monitoring in the future. The City of Visalia continues to experience traffic congestion with a handful of city streets having a Level of Service (LOS) of F (operating at capacity) during peak hours. The City of Porterville, with a population of 59,908, is also beginning to show signs of congestion on portions of the street network. TCAG currently encourages these cities to study TDM strategies and take advantage of available programs to implement such strategies in their communities. One TDM that TCAG encourages participation in is Rule 9410 Employer Based Trip Reduction, or eTRIP, adopted by the San Joaquin Valley Air Pollution Control District.[11]

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9 Department of Finance Population Estimates for Cities and County January 1, 2016 and 2017 http://www.dof.ca.gov/Forecasting/Demographics/Estimates/E-1/

10 Department of Finance, E-1 Population Estimates for Cities and County January 1, 2016 and 2017 http://www.dof.ca.gov/Forecasting/Demographics/Estimates/E-1/

11 TCAG Draft 2018 RTP/SCS, Chapter B (Action Element)

Transportation Control Measures (TCMs)

Transportation Control Measures (TCMs) are also being used to reduce vehicle trips, improve air quality, and relieve congestion. The SJVAPCD, in compliance with the California Clean Air Act (CCAA) to reduce vehicle trips, is enforcing the TCMs. The Air Quality Conformity document is included as part of the 2018 RTP/SCS as Appendix 32. The document and the accompanying air quality findings contain a description of the implemented TCMs in Tulare County. Under the 2018 RTP/SCS, these TCMs will continue to be implemented. There are many sources of funding that can be used to implement TCMs. Some primary sources for TCM implementation are the Congestion Mitigation and Air Quality (CMAQ) Program, Federal Transit Administration (FTA) funding, Active Transportation Program (ATP) funds, and eligible local sales tax funds.

Transportation System Management (TSM)

Transportation System Management (TSM) is designed to identify short-range, low-cost capital projects that improve the operational efficiency of existing infrastructure. An effective TSM program using appropriate techniques can improve circulation and reduce automobile emissions. TSM is an important tool endorsed by the SJVAPCD and state to meet air quality standards and congestion management levels-of-service. TSMs are used in coordination with TDM and TCMs to improve the local and regional environment. Additional population concentrations and accelerated residential, commercial and industrial development will result in more automobiles within urban areas. Additional industrial and commercial development may result in increased emissions at and near such sites.

The Cities of Visalia, Tulare, Dinuba and Lindsay have the most congested corridors (or segments of corridors) in Tulare County and are candidates for TSM strategies. Based on the 2017 CMP Annual Monitoring Program,[12] the following are presently experiencing traffic congestion with some streets or highways operating at capacity (LOS F):

- A portion of State Route 65 south of the City of Porterville;
- A portion of State Route 65/State Route 137 west of the City of Lindsay;
- A portion of State Route 99 South of Prosperity Ave in the City of Tulare;
- Portions of east bound State Route 198 thru the City of Visalia;
- A portion of Locust/south bound State Route 63 in the City of Visalia; and

12 http://www.tularecog.org/wp-content/uploads/2017/09/2017-Final-Monitoring-Report.pdf See also TCAG Congestion Management Process Document, 2015

- A portion of State Route 63 north of the City of Visalia.

Some of the roadways operating near capacity (LOS E) include:

- A portion of SR 137 west of the City of Lindsay;
- SR 99 between Prosperity in the City of Tulare to the Avenue 200 exit south of Tulare;
- Portions of State Route 198 thru the City of Visalia; and
- A portion of north bound State Route 63 in the City of Visalia.

TCAG encourages these cities and the county to study TSM strategies and take advantage of the programs available and implement them into their communities.

TCAG encourages the following TSM strategies in the 2018 RTP/SCS:

- Traffic signal synchronization;
- Traffic engineering and flow improvements;
- Turning and bus pocket bays;
- Removal of on street parking;
- Limit arterial street access;
- Street widening; and
- Bicycle facilities.

Recently, development of new industrial facilities and distribution centers has occurred throughout Tulare County. The uses associated with industrial and commercial facilities require a delivery system to receive and transport goods. The Cities of Lindsay, Dinuba, and Porterville currently have enterprise zones set up. The City of Porterville has attracted the Walmart Distribution Center and the City of Dinuba has attracted Best Buy.

With increased industrial and commercial land uses in Tulare County, there may be a need to designate truck routes and carefully manage the number and intensity of trucks entering and leaving the road system. Developments that generate more than 100 peak hour trips and that create a significant impact on the regional road system are recommended for further analysis. The decision to conduct a traffic study is up to local agencies.

Intelligent Transportation Systems (ITS)

Intelligent transportation systems improve transportation safety and mobility through the integration of advanced communications technologies into the transportation infrastructure and in vehicles. ITS encompass a broad range of wireless and wire line communications-based information and electronics technologies.

An Urbanized Area ITS Plan was developed in 2001 for the Visalia Urbanized Area. The update of this plan is scheduled for completion in 2018 and may include additional cities in Tulare County.

New Technologies

TCAG has encouraged retrofitting and/or replacing heavy duty diesel engines with either the newest cleaner burning diesel technology or Compressed Natural Gas (CNG) in public vehicles and fleets. Congestion Mitigation & Air Quality (CMAQ) funds are available to offset the cost of these replacement engines that will work to improve air quality. The County, Cities of Porterville, Exeter, Tulare, Dinuba, and Visalia currently run a majority of their active public transit fleet with CNG vehicles and have their own CNG stations, some of which are open to the public. Porterville and Visalia have begun procurement of electric buses that are scheduled to operational in 2018. TCAG has and will continue to obtain grant funding to improve air quality by supporting and funding these types of projects.

Corridor Preservation

The 2018 RTP/SCS contains goals aimed at protecting and enhancing various corridors. The objective provides guidance toward coordination of local planning processes along the corridors. The policy supports limitation of direct access along regionally significant corridors. Major corridors identified by Caltrans and TCAG include:

- SR- 99 (including UP rail line);
- SR-43 (including BNSF rail line);
- City of Visalia to the City of Tulare including Mooney Boulevard, Demaree/Blackstone/Hillman, and Akers Street;
- SR-65 from SR-198 to the City of Lindsay;
- City of Lindsay to City of Porterville, including SR-65 and Orange Belt Dr.;
- SR-65 from the City of Porterville to the Kern County line;
- SR-198/Sequoia National Park/Exeter/Hanford;

- SR-190/Road 152 from the Kings County line to the City of Porterville; and
- SR-137 from the Kings County line to the City of Lindsay.

Interregional Connectivity

Tulare County has interregional connections along the SR 198 corridor with Kings County, SR 99 with Kern and Fresno Counties, SR 65 with Kern County, and Ave 416 with Fresno County. These corridors are currently running at capacity or near capacity. TCAG has coordinated with surrounding counties to improve these significant corridors. By way of Proposition 1B funds, and other local and state funds, the SR-198 corridor has been widened between the cities of Visalia and Hanford. Segments of SR-99 have been widened at the north end of Tulare County and are being widened south through the City of Tulare. TCAG will continue to move forward on these major projects, in close partnership with Caltrans and neighboring jurisdictions.

Public Transit

An environmentally sound alternative to adding additional lanes to highways, streets, and roads is to provide mass transit systems. Mass transportation provides transportation to large numbers of people to designated destinations by bus or train. In Tulare County, buses are the primary mode of public transportation. Fixed Route and Dial-A-Ride services are provided by Visalia Transit, Tulare Intermodal Express (TIME), Porterville Transit, Dinuba Transit, and Tulare County Area Transit (TCaT). The City of Woodlake also operates a Dial-a-Ride only service.

In 2016, Visalia Transit began the V-LINE- bus service between Visalia (from the transit center and Visalia Municipal Airport) to various locations in Fresno County (the Fresno Yosemite International Airport, California State University, Fresno, and Courthouse Park). Intercounty connections are also provided by Dinuba Transit (to Reedley) and TCaT (to Delano and Kingsburg).

Amtrak, California's only operating interregional passenger rail service, does not directly serve Tulare County. The closest Amtrak stations are in the Cities of Hanford and Corcoran in Kings County. However, Amtrak does coordinate with Visalia Transit to provide a feeder bus linking Visalia from the city's transit center with the Hanford Station in Kings County. Greyhound and Orange Belt Stages also operate in Tulare County.

Public transportation in Tulare County also takes the form of shared-ride companies, carpools, and vanpools. Fixed route transit is generally used in the more populated urban areas while demand responsive transit and blended paratransit are often used in rural areas and communities.

Several regional programs and services exist in Tulare County. All transit providers participate in the T-Pass, which provides unlimited monthly fixed route rides, College of Sequoias Student Pass, which provided unlimited fixed route rides for students with their paid student fees, and the Greenline call center.

Mass transportation has the capability to reduce a large number of single vehicle occupancy trips and reduce emissions. All fixed-route providing public transit agencies in Tulare County have fleets of Compressed Natural Gas (CNG) vehicles and CNG fueling stations. Porterville and Visalia have begun procurement of electric buses that are scheduled to operational in 2018.

Goals for all transit agencies are to integrate transit into the growth and development of their cities and communities. As developments and road designs occur, transit would be integrated when possible. High and medium density neighborhoods, commercial, medical, educational, and employment areas can all benefit from transit. TCAG recommends that arterials and transit friendly corridors be identified in cities and communities to serve the anticipated population growth to become transit users or transit dependent. Transit Plans and General Plans determine the feasibility and steps to implement express bus service and bus rapid transit, where demands exist or will exist in the future.

Tulare County Regional Long Range Transit Plan (LRTP)

In September 2017, TCAG approved the first-ever Tulare County Regional Long Range Transit Plan. Public outreach, evaluation of the existing system, and technical analysis resulted in comprehensive Action and Financial Plans.

Social Service Transportation

Social service transportation in Tulare County is being guided in a direction consistent with the Social Service Improvement Act of 1979 (AB 120). The law was enacted to promote the consolidation of such transportation services. The Act was established to improve efficient social service transportation by:

- combining purchasing of necessary equipment;
- ensuring adequate training of vehicle drivers for reduced insurance rates;
- centralizing dispatching of vehicles;
- centralizing maintenance of vehicles;
- centralized administration; and
- identifying and consolidating all existing sources of funding.

In Tulare County, social service transportation is provided by the following: local transit agencies, demand responsive operators and city/county special programs, Veterans' programs, mental health organizations, programs for senior, and more. TCAG reaches out to transportation providers identified in the Coordinated Public Transit – Human Services Transportation Plan and ensures that calls for projects are communicated with social service providers. Many of these programs are funded and subsidized through state and federal grants.

Active Transportation

Non-vehicle modes of transportation in Tulare County are also called active transportation. Active transportation includes pedestrian walkways and bikeways. In Tulare County's populated centers, bicycle commuting is a viable transportation alternative. This is due to the generally flat topography and the moderate year round climate. Many of the roadways throughout the County can accommodate bicyclists. However, there is a need for striping improvements and adequate separation from vehicles on the circulation system. In addition to conventional bicycle and pedestrian projects, agencies in the County continue to actively pursue funding for Safe Routes to School (SRTS) projects. SRTS projects aim to create safe, convenient, and fun opportunities for students to bicycle and walk to and from school. There is a significant need for these types of projects in the County. In 2016, TCAG adopted its first Regional Active Transportation Plan (RATP),[13] which identifies the highest-priority pedestrian and bicycle improvements and safe routes to school projects for the County's cities and unincorporated areas.

The main source of funding for active transportation projects is the State of California's Active Transportation Program. Over the past four years, agencies in the County have been awarded more than $11 million in ATP funds for projects totaling over $14 million.[14]

Tulare County cities have become more aggressive in developing their bicycle facilities by pursing various funding sources. The City of Visalia has a Trails and Waterways committee and the city aggressively pursues air quality grant funds for bike project implementation. Other cities aggressively pursue bike funds as well and numerous projects are underway and scheduled for the near future.

In addition to the RATP, the County of Tulare has prepared Complete Streets Plans (see 2018 RTP/SCS Appendices 23 through 27) for several of its unincorporated communities. The aim of Complete Streets

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13. Regional Active Transportation Plan for the Tulare County Region. http://www.tularecog.org/wp-content/uploads/2017/11/TCAG-Regional-Active-Transportation-Plan-Walk-and-Bike-Tulare-County-with-amendments.pdf

14 G. Gutierrez, personal communication, April 25, 2018.

Plans is to create a comprehensive and uniform vision for the County with respect to development of a transportation network that supports all modes of travel.

Passenger Rail

In 2014, the California High-Speed Rail Authority (Authority) examined and environmentally cleared a high-speed rail (HSR) station for future construction in the Kings and Tulare Counties (Kings/Tulare) region.[15]

The planned HSR station would be located near the intersection of State Routes (SR) 198 and 43. The location is just east of the City of Hanford and about 20 miles west of the City of Visalia. Bus transit systems, centers, and the existing Cross Valley Corridor would potentially serve as multimodal connectors to the Kings/Tulare regional high-speed rail station and other HSR destinations throughout the state. The communities along the Cross Valley Corridor would serve as transit hubs to the statewide HSR services for the surrounding communities and their residents, which include Lemoore, Visalia, Tulare, Dinuba, Porterville and Hanford.

Currently the Authority is working with TCAG to develop the Cross Valley Corridor Plan,[16] a regional vision identifying how the Kings/Tulare Regional HSR Station will serve as a transit hub for the two counties and how the Cross Valley Corridor may act as a connector to surrounding communities and their residents.

As mentioned above, the HSR station and Cross Valley Corridor are conceptual and do not have funding at this time, and as such are not reasonably foreseeable, and are therefore not included within the RTP/SCS or the cumulative impact analysis contained within this PEIR.

3.5.3 Description of the Sustainable Communities Strategy

Overview of the SCS

At the foundation of the SCS[17] is a land use pattern identifying the general location of uses, residential densities, and building intensities within the region (**Figure 3.0-5** and **Table 3.0-3**). The general distribution of land uses, that is, residential, commercial, industrial, etc., is based on the existing, adopted

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15 California High-Speed Rail Authority. Kings/Tulare Station. Accessed online April 27, 2018. http://www.hsr.ca.gov/programs/station_communities/kings_tulare_station.html

16 Tulare County Association of Governments. Cross Valley Corridor Draft Plan, March 2018. Online at http://www.tularecog.org/wp-content/uploads/2018/01/CVCP-Final-Report-Public-Draft-03192018_Optimized.pdf

17 TCAG, Draft 2018 RTP/SCS, Chapter D (Sustainable Communities Strategy)

general plans of Tulare County and the eight cities. The horizon year of the RTP/SCS, 2042, is beyond the horizon year of all the currently adopted general plans. The current general plans have horizon years of 2030 or sooner. The principles of the preferred (Blueprint) land use scenario guided the allocation of future development sufficient to accommodate the forecasted growth in population, households and employment through 2042. (See **Table 3.0-2, Forecast 2042**) Most notable of these principles is an increase in densities county-wide by 25% over the status quo densities.

Table 3.0-2
Forecast 2042

Jurisdiction	Population	Housing Units	Employment
Dinuba	26,392	6,929	8,883
Exeter	14,500	4,848	3,463
Farmersville	14,931	3,690	2,350
Lindsay	17,281	4,500	4,607
Porterville	82,354	24,420	23,241
Tulare	92,433	28,231	27,023
Visalia	174,346	59,643	73,567
Woodlake	10,585	2,885	1,147
Unincorporated Tulare County	172,147	51,186	75,930
Tulare County (Total)	604,969	186,332	220,210

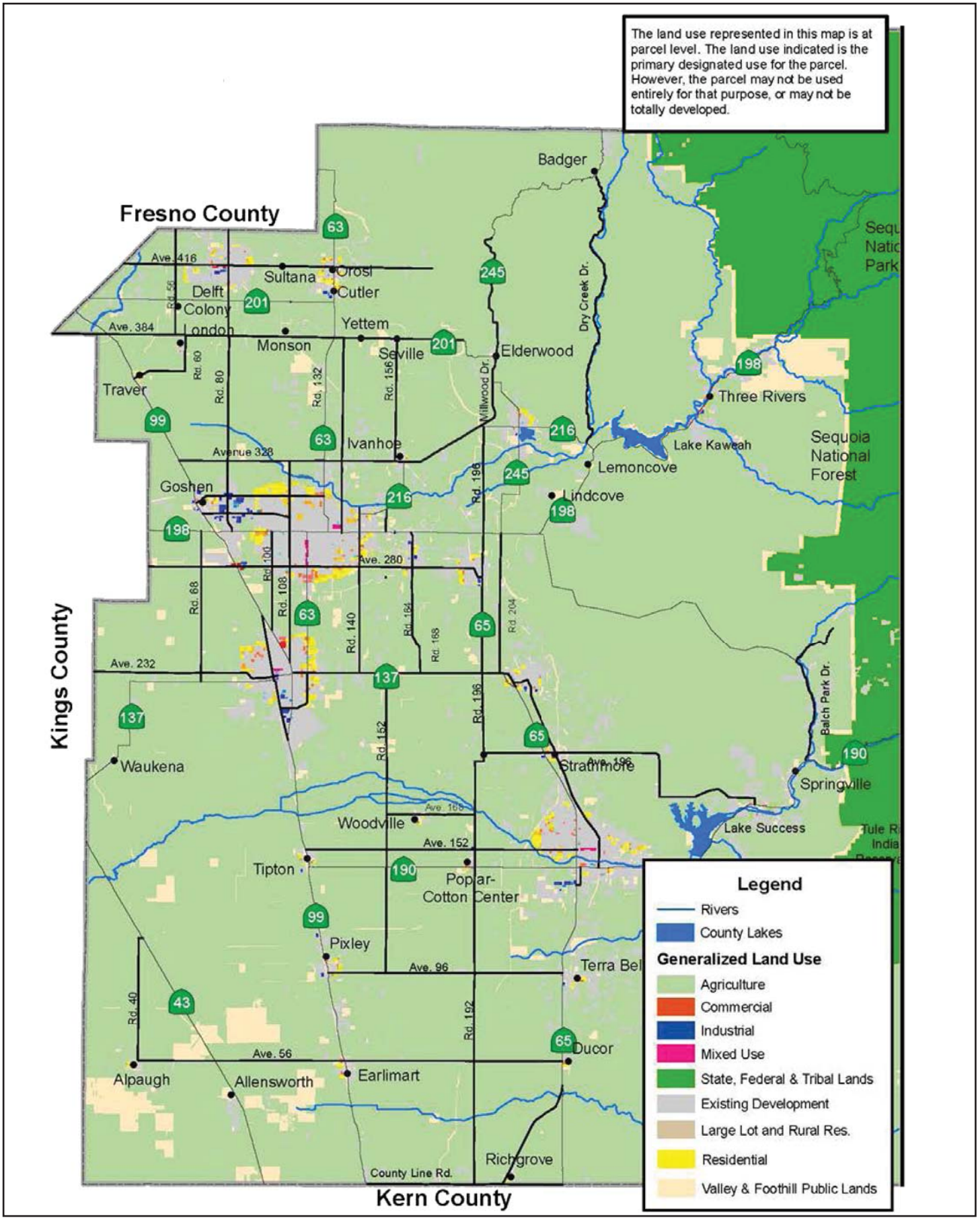
Source: TCAG 2018

The theme of the preferred scenario continues to be that moderately higher density, applied thoughtfully as an element of urban design and development, will improve regional jobs-housing fit. This, in turn, will leverage the ability of local agencies to implement projects that achieve better air quality and improved mobility options.

Table 3.0-3
Land Use – Tulare County, 2042

2042 Land Use	Acres	Percentage
Agriculture	1,347,384	43.45
Commercial	11,900	0.38
Industrial	8,480	0.27
State, Federal & Tribal Lands	1,543,684	49.78
Other Urban Uses	3,727	0.12
Large Lot and Rural Res.	70,759	2.28
Residential	30,723	0.99
Valley & Foothill Public Lands	84,415	2.72
Total	3,101,073	

Source: TCAG 2018



SOURCE: Tulare County Association of Governments, 2018

FIGURE **3.0-5**

Tulare County Land Use (2042)

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The SCS consists of the preferred land use and transportation scenario selected by TCAG as best capable of meeting RTP goals. The 2018 RTP/SCS simultaneously addresses the region's transportation needs and encourages infill development near transit investments to reduce per capita vehicle miles traveled (VMT) and per capita GHG emissions. This strategy selectively invests in transportation systems that complement compact growth within transit corridors in existing urban areas.

The transportation projects, programs, and strategies contained in the RTP are major components of the SCS. However, the SCS also focuses on the general land use growth pattern for the region, because the geographic relationships between land uses—including density and intensity— help determine travel demand. Specifically, the SCS does the following:

- Identifies the general location of uses, residential densities, and building intensities within the region;
- Identifies areas within the region sufficient to house all the population over the course of the planning period of the regional transportation plan;
- Identifies areas within the region sufficient to house an eight-year projection of the regional housing need for the region;
- Identifies a transportation network to service the transportation needs of the region;
- Gathers and considers information on resource areas and farmland in the region;
- Sets forth a forecasted development pattern for the region, which, when integrated with the transportation network, will reduce GHG emissions from automobiles and light trucks to achieve the GHG emissions reductions target approved by CARB; and

These requirements, as outlined in California Code Section 65080(b)(2)(B), do not mean that the SCS creates a mandate for certain land use policies at the local level. In fact, SB 375 specifically provides that the SCS cannot dictate local General Plan policies (see California Code Section 65080(b)(2)(J)). Rather, the SCS is intended to provide a regional policy foundation that local governments may build upon as they choose and generally includes quantitative growth projections.

Land Use Scenarios

Development of the SCS involved the study of distinct land use scenarios, each analyzing different combinations of land use and transportation variables. The preferred scenario was selected from these scenario options on the basis of stakeholder input and scenario performance measures tied to the overall 2018 RTP/SCS goals. All scenarios applied the same region-wide population, employment and housing projections. Sub-regional allocation of forecast population growth varies by scenario consistent with allowable land uses, residential land use capacity and policy assumptions as follows:

- **Blueprint**. The Blueprint scenario is based on the application of the development principles adopted as part of the 2009 Tulare County Regional Blueprint. Primary among these principles is an objective of 25 percent higher overall density for new development compared to the Old Plan scenario and an increased emphasis on transit. This is the preferred scenario included in the 2018 RTP/SCS and analyzed throughout this PEIR.

- **Trend.** The Trend scenario shows a land use forecast based on designations from existing local agency general plans and linear trends in growth on a sub-regional basis. This means that the projected pattern of development will be generally consistent with the development pattern seen currently. It should be noted however that local general plans include policies that will move the Trend scenario to some extent away from a pure extrapolation of current development types and densities. This is especially true of the most recently updated plans (Porterville, 2007; Tulare County, 2012; Tulare, Visalia, 2014).

- **Blueprint Plus**. The Blueprint Plus scenario was requested by the RTP Roundtable[18] in 2013 to explore the ramifications of a change in future development patterns more pronounced than that envisioned by the Regional Blueprint. Blueprint Plus has an objective of overall density of new development 5 percent higher than Blueprint (30 percent higher than Trend) and a maximum feasible emphasis on transit and active transportation modes.

The principles of the preferred (Blueprint) scenario guided the allocation of future development sufficient to accommodate the forecasted growth in population, households and employment through 2042. Most notable of these principles is an increase in densities county-wide by 25% over the existing densities.

The theme of the preferred scenario continues to be that moderately higher density, applied thoughtfully as an element of urban design and development, will improve regional jobs-housing fit. This, in turn, will leverage the ability of local agencies to implement projects that achieve better air quality and improved mobility options.

Existing Land Use

Existing land uses and resource areas were integrated into the 2018 RTP/SCS in various forms and then compiled in layers with TCAG's Geographic Information System (GIS) that acted as constraints to future growth during SCS scenario development; the SCS scenario development used existing land use designations as the basis for assigning growth in all scenarios. The SCS preferred scenario focuses new

18 The RTP Roundtable Committee includes a range of important stakeholders that guide the RTP process and made recommendations to the TCAG Governing Board with respect to RTP/CS policies and ultimately the preferred Blueprint Scenario.

development in existing urbanized infill locations avoiding resource areas identified in the San Joaquin Valley (SJV) Greenprint Project.[19] The 2018 RTP/SCS accounts for existing land uses, including the significant proportion of land area that is in government-owned or in agricultural uses (**Table 3.0-4, Existing Land Use Tulare County**). The 2018 RTP/SCS accounts for the land uses of the eight incorporated cities, the many thriving communities in the unincorporated areas, and the diverse rural regions (see **Figure 3.0-6 Tulare County 2017 Land Use**).

Table 3.0-4
Existing Land Use Tulare County

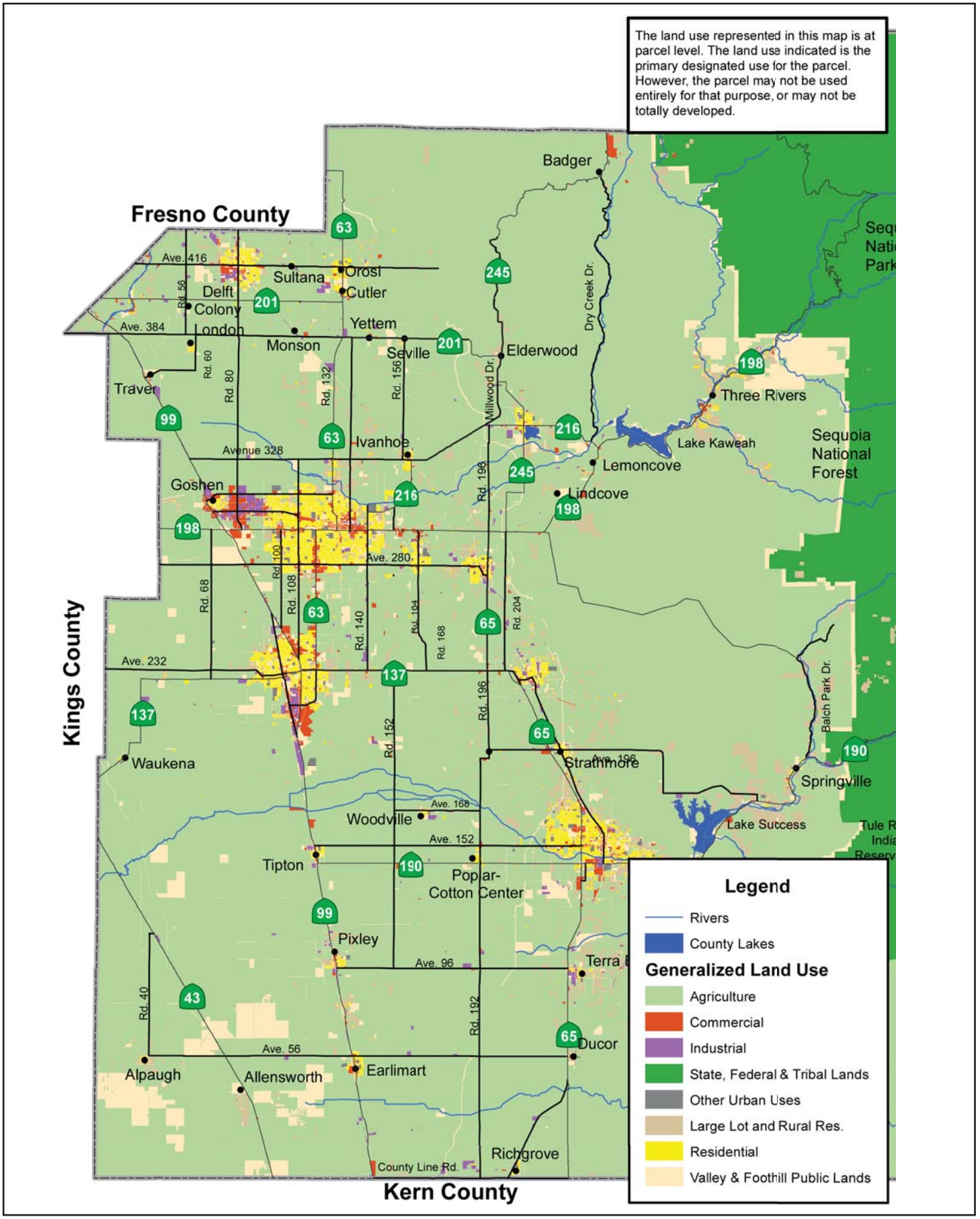
Land Use- Tulare County, 2017	Parcels	Acres	Percentage
Agriculture	81,110	1,351,700	43.64
Commercial	7,556	10,813	0.35
Industrial	1,997	7,760	0.25
State, Federal & Tribal Lands	45,061	1,543,684	49.84
Other Urban Uses	671	3,727	0.12
Large Lot and Rural Res.	29,817	70,278	2.27
Residential	102,131	24,136	0.78
Valley & Foothill Public Lands	13,068	85,394	2.76
Total	**281,411**	**3,097,492**	

Source: TCAG 2018 RTP/SCS

Resource Areas

Development of the 2018 RTP/SCS involved compilation and consideration of information regarding open space, habitat, farmland and other resource areas. Resource maps produced in March 2013 as part of the SJV Greenprint provide location information on important farmland, critical habitats and other resources on the regional scale. These resource areas were compiled as GIS layers that acted as constraints to development of land in the SCS preferred scenario.

19 The SJV Greenprint is primarily a collection of maps, assembled as a comprehensive, interactive database that catalogs current conditions and trends related to the region's resources. The maps and data collected for the SJV Greenprint are publicly available through the San Joaquin Valley Data Basin Gateway http://sjvp.databasin.org



SOURCE: Tulare County Association of Governments, 2018

FIGURE **3.0-6**

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Tulare County 2017 Land Use

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Farmland

The Department of Conservation's Farmland Mapping and Monitoring Program (FMMP) provides a comprehensive survey of important farmlands for the region. The latest year for which the survey is available is 2016.

The farmland categories are defined as follows:

- Prime Farmland: Farmland with the best combination of physical and chemical features able to sustain long term agricultural production. This land has the soil quality, growing season, and moisture supply needed to produce sustained high yields.
- Farmland of Statewide Importance: Farmland similar to Prime Farmland but with minor shortcomings, such as greater slopes or less ability to store soil moisture.
- Unique Farmland: Farmland of lesser quality soils used for the production of the state's leading agricultural crops. This land is usually irrigated, but may include non-irrigated orchards or vineyards as found in some climatic zones in California.
- Farmland of Local Importance: Land of importance to the local agricultural economy as determined by each county's board of supervisors and a local advisory committee.
- Grazing Land: Land on which the existing vegetation is suited to the grazing of livestock. This category was developed in cooperation with the California Cattlemen's Association, University of California Cooperative Extension, and other groups interested in the extent of grazing activities.

Open Space & Protected Areas

The open space and conservation areas represent the Protected Areas Database developed by the U.S. Geological Service (PAD-US) includes lands held in ownership for permanent or long-term open space use. These include national parks and forests, public lands, State and local parks and reserves, lands held by non-profit organizations, conservation easements and many other areas. The Protected Areas Database was developed with aggregated datasets from the Bureau of Land Management, the GreenInfo Network and The Nature Conservancy. Other federal, state, local, non-governmental organizations and land trusts provided data that was more limited in scope.

Growth Forecast

A vital input to the SCS development process was a credible forecast of population, housing and jobs. TCAG developed a new forecast for this RTP/SCS based on the most comprehensive and up-to-date regional forecasts and projections available. The growth forecast for the 2018 RTP/SCS incorporates substantial new data available from the 2010 Census and new projections published by the California

Department of Finance, Demographic Research Office (DOF) in 2017. The growth forecast, based on the DOF projection, is much more restrained than in the previous 2014 RTP/SCS (see RTP Appendix F). The new demographic forecast is summarized in **Table 3.0-5, Tulare County Demographic Forecast,** below:

Table 3.0-5
Tulare County Demographic Forecast

Year	Population	Housing Units	Jobs
2017	472,271	148,898	176,289
2020	488,293	153,390	181,560
2025	514,101	160,877	190,344
2030	541,140	168,364	199,128
2035	568,186	175,851	207,912
2042	604,969	186,332	220,210

Source: 2018 TCAG RTP/SCS

The new 2017 DOF population projection for the year 2040 (594,348) is significantly lower than that of the 2013 DOF projection for the year 2040 (722,838) used for the 2014 RTP/SCS, a difference of 128,490 persons. This is due to lower birthrates consistent with the state as a whole and the fact that Tulare County is still experiencing negative net migration (-150 persons in 2015) as opposed to the peak (+4,473 persons in 2004), as a result of the Great Recession. Significantly lower population projections for the year 2040 make it more difficult to achieve GHG reduction targets and harder to implement higher density and mass transportation solutions. Notwithstanding, the 2018 RTP/SCS represents an equivalent effort in GHG per capita reductions as the 2014 RTP/SCS, with updated demographics assumptions and updated modeling tools.

Land Uses

At the foundation of the SCS is a land use plan identifying the general location of uses, residential densities, and building intensities within the region. The general distribution of land uses, that is, residential, commercial, industrial, etc. is based on the existing, adopted general plans of Tulare County and the eight cities. The horizon year of the 2018 RTP/SCS, 2042, is beyond the horizon year of all the currently adopted general plans. The current general plans have horizon years of 2030 or sooner.

Housing Need

In the modeling of the 2018 RTP/SCS sufficient land use capacity was allocated to accommodate all growth in population, household and employment that has been forecasted for the county. SB 375 requires the SCS to "identify areas within the region sufficient to house an eight-year projection of the regional housing need for the region." The regional housing need projection is determined by the California Department of Housing and Community Development (HCD).

Available housing capacity in each TCAG member jurisdiction in the SCS preferred scenario is adequate to accommodate each jurisdiction's respective share of housing need as allocated by TCAG's adopted RHNA methodology. Available residential capacity in each jurisdiction is thus sufficient to accommodate at minimum that jurisdiction's share of the regional housing need and TCAG's Regional Housing Needs Allocation (RHNA) that was last adopted in 2014. The development pattern of the SCS is consistent with the current RHNA. The RHNA will be updated during the 2022 RTP/SCS process.

Table 3.0-6, Housing Need (RHNA) vs. Land Use Capacity – Preferred Scenario, shows the correspondence between modeled land use capacity for the preferred scenario and identified housing need by jurisdiction, including very low and low-income categories. Because the SCS is consistent with the allocation of housing units under the adopted RHNA, the SCS also meets the State housing goals articulated in State housing law.

Table 3.0-6
Housing Need (RHNA) vs. Land Use Capacity – Preferred Scenario

	Land Use Capacity		RHNA Housing Need		Land Use Capacity minus RHNA Housing Need	
Jurisdiction	Low + Very Low	Total	Low + Very Low	Total	Low + Very Low	Total
Dinuba	794	1,181	374	965	420	216
Exeter	634	1,118	268	625	366	493
Farmersville	210	508	139	466	71	42
Lindsay	473	950	160	590	313	360
Porterville	2,732	5,280	1,199	3,196	1,533	2,084
Tulare	2,688	6,849	1,529	3,594	1,159	3,255
Visalia	5,958	12,686	4,547	10,021	1,411	2,665
Woodlake	268	585	112	372	156	213
Unincorporated	3,222	8,668	2,542	7,081	680	1,587
County Total	16,980	37,827	10,870	26,910	6,110	10,917

Source: 2018 TCAG RTP/SCS

Transportation Network and Strategies

The SCS is required to "identify a transportation network to service the transportation needs of the region." The preferred scenario includes the regional transportation network, including all of the fiscally constrained programmed and planned projects listed and addressed in detail in the Action Element. The RTP/SCS takes a performance-based approach to modeling and understanding diverse types of transportation investments. A broad range of components comprise the transportation system and investments in the 2018 RTP/SCS:

- Maintenance and rehabilitation of existing and future facilities;
- Continued support of Regional Ride Share and Vanpool program;
- Operation and strategic expansion of public transit including;
- Bus Rapid Transit Corridor determination & funding for ROW preservation;
- Expansion of Community College Transit Program;

- Continued transit expansion of over $1.7 million a year with Measure R;
- Strategic road and highway expansion and operational improvements that focus on alleviating major bottlenecks and congestion points;
- Requirements to prepare Corridor plans to prioritize and rank projects within key congestion related corridors;
- Bicycle and pedestrian retrofits and new facilities;
- Implementation of Visalia waterways bike plan;
- Investment of over $70 million for bike/pedestrian projects over 20 years; and
- Programs and planning (e.g. programs and transportation system management strategies, including technology and demand management programs), which allow for greater optimization of existing transportation infrastructure.

Regional policies exist that were put in place prior to SB 375 requirements taking effect which set the Tulare County region on a course to reduce emissions from car and light truck travel and better coordinate transportation, land use and housing planning. Most notable of these regional policies is Measure R. Since 2006, the increase of transit service and construction of pedestrian/bike paths has significantly increased due to Measure R.

Performance Results

To evaluate alternative scenarios and guide selection of the preferred scenario, TCAG applied performance measures related to goal areas proposed in the Policy Element. These performance measures allowed quantification, comparison and evaluation of the effectiveness of the scenarios in achieving the plan goals.

The preferred scenario ultimately selected by the TCAG Governing Board based on this information and public input best achieves the plan goals, performing well against every performance measure. The preferred scenario also did better across virtually all performance measures and goal areas than the No Project scenario, which represents the forecast conditions that would apply if no RTP/SCS were adopted.

Table 3.0-7, RTP/SCS Performance Results, lists performance results for the 2018 RTP/SCS alternative scenarios. This table demonstrates that the proposed 2018 RTP/SCS exceeds the regional GHG reduction targets set by CARB.

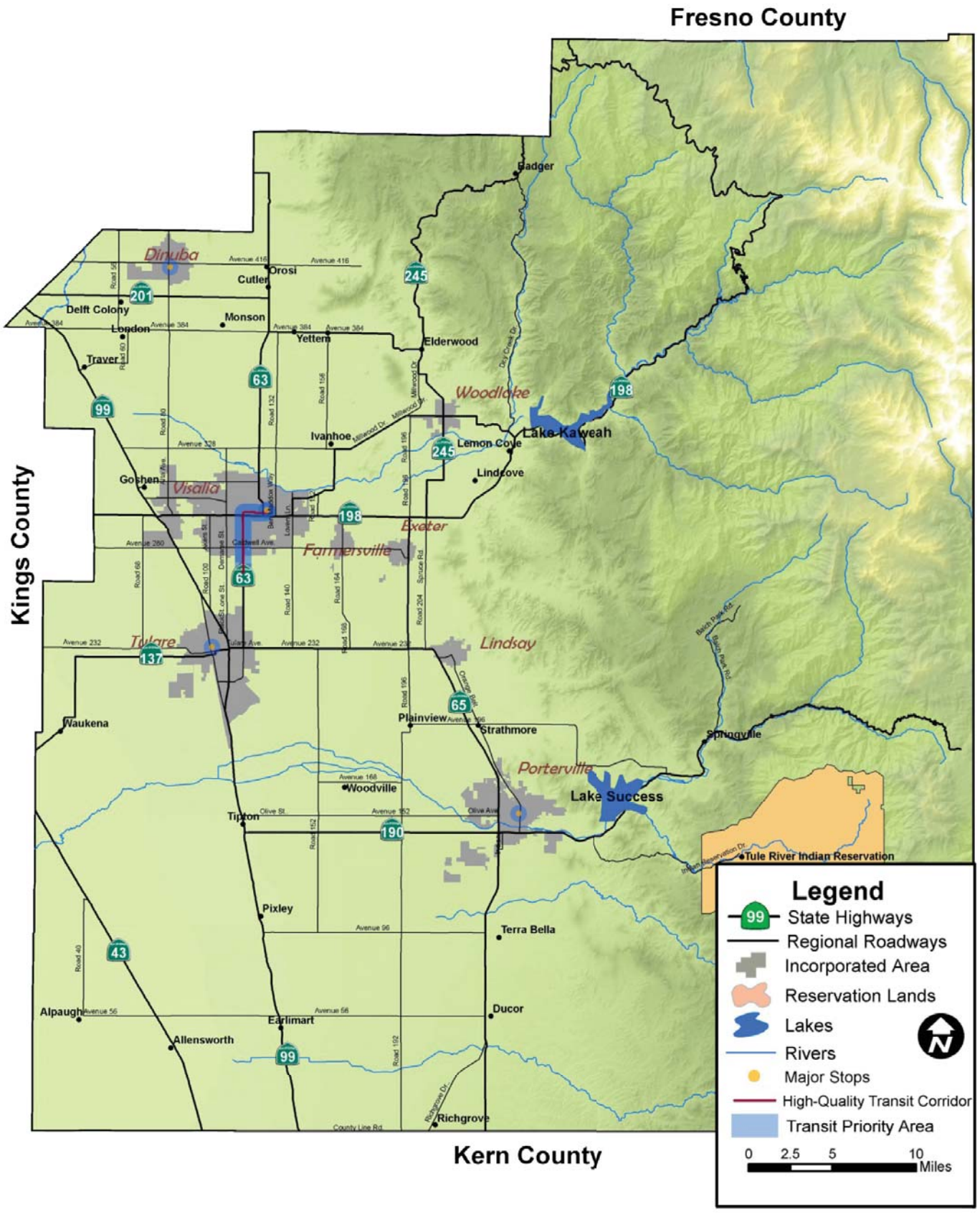
Transit Priority Area (TPA)

The SCS identifies Transit Priority Areas (TPAs) to facilitate CEQA streamlining opportunities. A TPA is an area that is located within one-half mile of an existing or planned major transit stop. A "major transit stop" refers to a site containing an existing rail transit station or the intersection of two or more major bus routes with a frequency of service interval of 15 minutes or less during the morning and afternoon peak commute periods. To qualify as a TPA, a planned major transit stop needs to be scheduled for completion within the planning horizon included in the adopted FTIP or RTP. Locations of Existing and Future TPAs are provided in **Figures 3.0-7** to **3.0-10**.

Table 3.0-7
2018 RTP/SCS Performance Results

Performance Measure	Units	Blueprint/Plan	Trend	Blueprint Plus	No Project
Per Capita GHG Reduction* * All scenarios meet -5% (2020) and -10% (2035) ARB Targets	Percentage Change CO2 Emissions (Auto & Light Truck) from 2005	2020: -13.1% 2035: -17.9% 2042: -18.6%	2020: -12.3% 2035: -16.0% 2042: -16.5%	2020: -13.3% 2035: -18.2% 2042: -18.9%	2020: -12.1% 2035: -16.1% 2042: -17.0%
Increased Urban Residential Density (25%)	2042 Gross Housing Units per Acre of New Development	6.1	4.9	6.4	4.9
Reduced Vehicle Miles Travelled (VMT)	2042 VMT per Weekday, All Vehicles and Purposes (x1000)	12,699	12,848	12,657	12,758
Reduced Criteria Air Emissions**	2042 NOx Tons/Weekday	2.8917	2.9256	2.8821	2.9051
** All Scenarios Pass Conformity	2042 ROG Tons/Weekday	0.9866	0.9982	0.9834	0.9911
	2042 PM10 Tons/Weekday	0.7457	0.7544	0.7432	0.7492
	2042 PM2.5 Tons/Weekday	0.3030	0.3066	0.3020	0.3045
Reduced Commute Times	2042 Average Trip Time (Minutes)	16.31	16.26	16.32	16.45
Proximity of Housing to Jobs	2042 Average Trip Length (Miles)	11.06	11.00	11.05	10.91
Improved Reliability of the Road System	2042 Weekday Congested VMT (All Vehicle Classes, x1000)	2,001	2,043	1,971	3,796
Increased Use of Active Transportation Modes	2042 Mode Share Bike/Ped. (Percentage of All Trips)	1.15/6.10	1.13/5.68	1.15/6.20	1.12/5.57
Expanded Use of Transit	2042 Transit Ridership	25,345	21,384	25,410	16,042
Decreased Consumption of Land	Acres Consumed 2015-2042	8,884	10,525	8,487	10,525
Decreased Consumption of Important Farmland	Acres of Important Farmland Consumed Outside SOI 2015-2042	1,518	2,311	1,353	2,311
Reduced Impact on Environmental Resources (SJ Valley Green Print)	Acres of Critical Habitat Area Consumed for New Urban Growth 2015-2042	144	176	144	176
Improved Reliability of the Road System	2042 Weekday Congested VMT (All Vehicle Classes, x1000)	2,001	2,043	1,971	3,796

Source: TCAG 2018 RTP/SCS



SOURCE: Tulare County Association of Governments, 2018

FIGURE **3.0-7**

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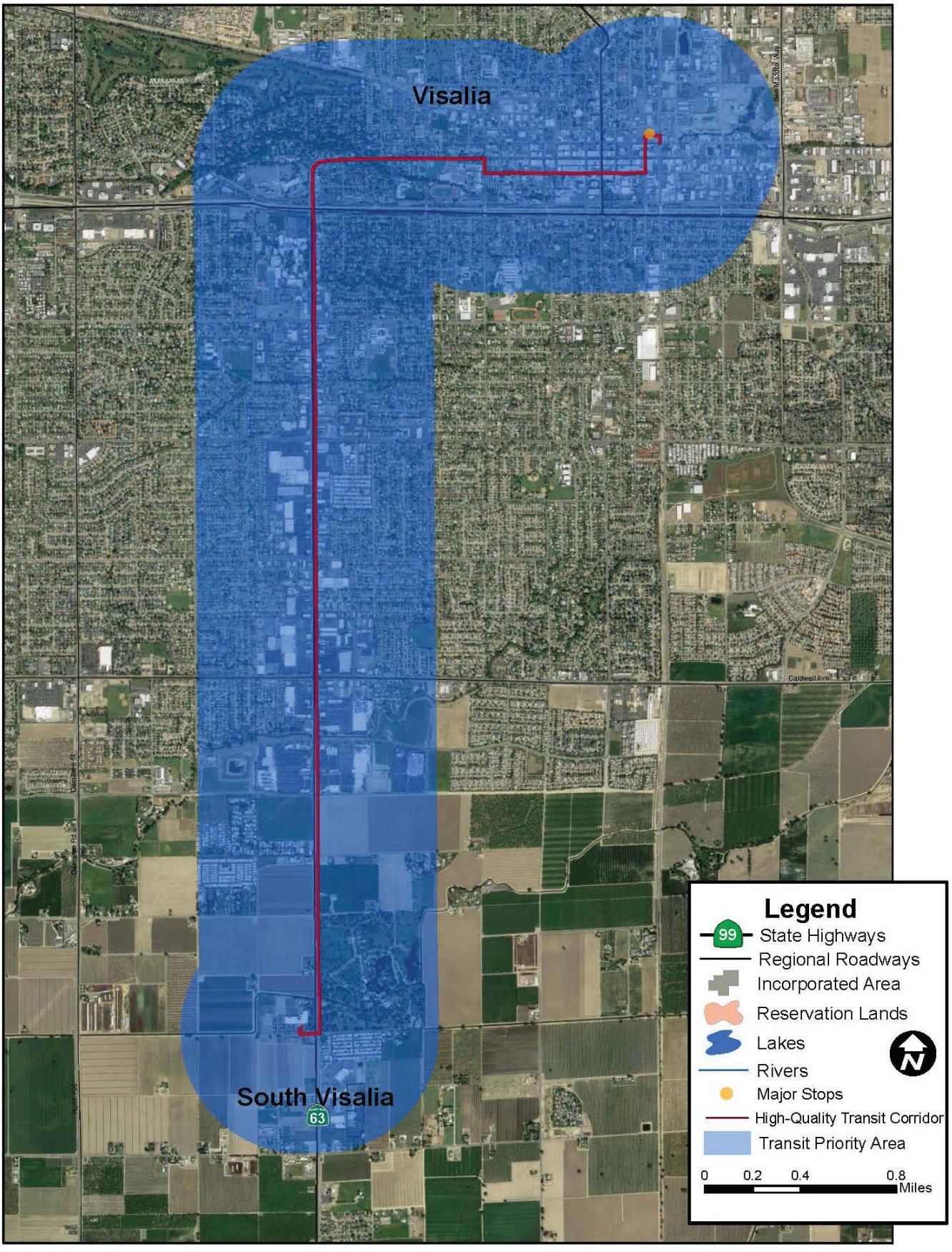
Tulare County Existing TPAs



SOURCE: Tulare County Association of Governments, 2018

FIGURE **3.0-8**

Visalia Area Existing TPAs

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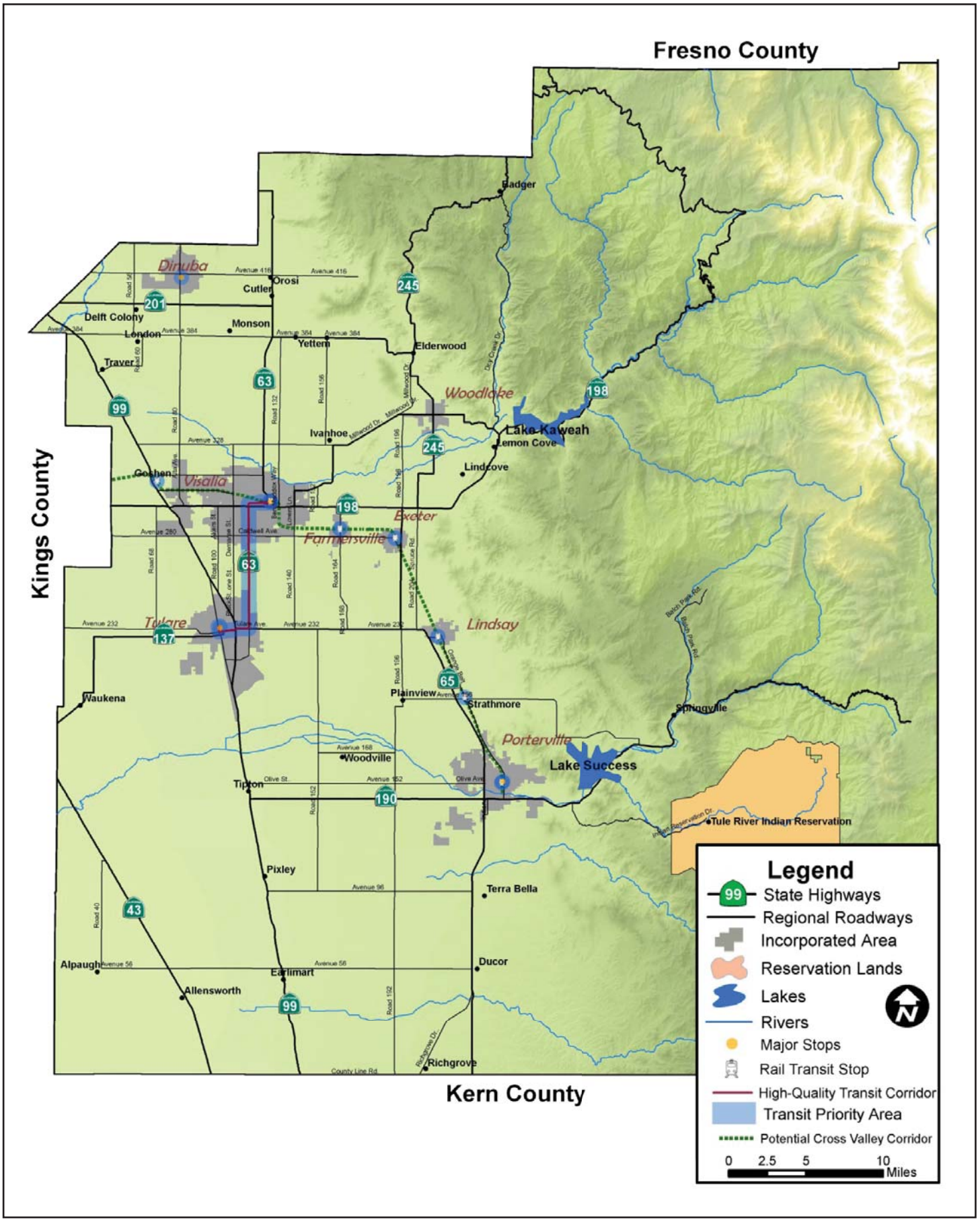

SOURCE: Tulare County Association of Governments, 2018

FIGURE **3.0-9**

Tulare County TPAs (2042)

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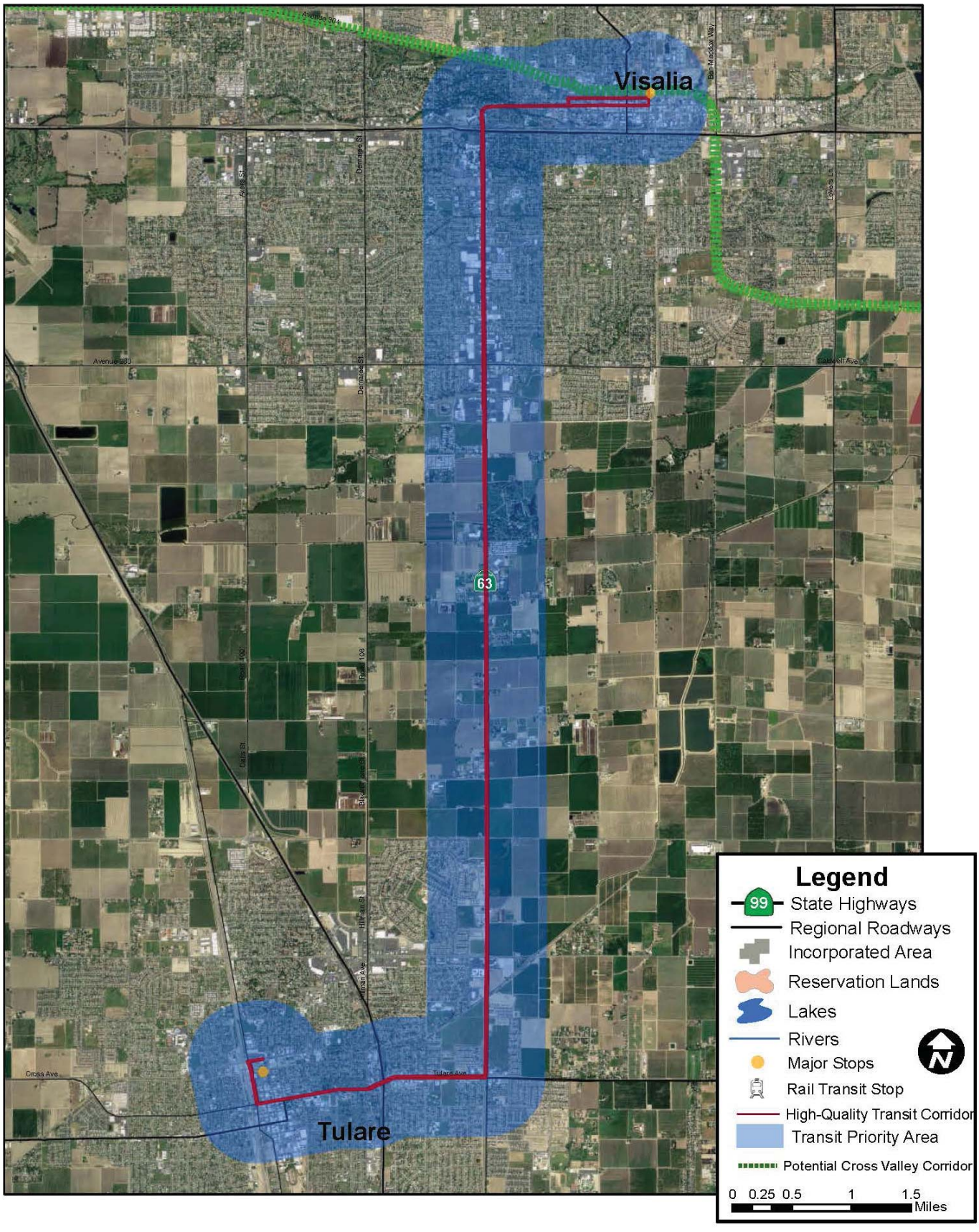

SOURCE: Tulare County Association of Governments, 2018

FIGURE **3.0-10**

Visalia and Tulare Area TPAs (2042)

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3.6 INTENDED USES OF THIS PROGRAM EIR

3.6.1 Agencies Expected to Use this Program EIR

TCAG will use this PEIR as part of its review and approval of the 2018 RTP/SCS. The lead agencies for individual transportation and land use projects may use this PEIR as the basis of their regional and cumulative impacts analysis. This Program EIR may also be used as part of CEQA streamlining for projects that meet specified criteria under SB 375, SB 226, or SB 743, See **Section 1.0, Introduction**, for a discussion of CEQA streamlining.

It is the intent of TCAG that member agencies and others can use the information contained within the PEIR in order to "tier" subsequent environmental documentation of projects in the region.

3.6.2 List of Permits or Other Approvals Required to Implement the Plan

Pursuant to 176(c) of the federal Clean Air Act, TCAG and the U.S. Department of Transportation must make a determination that the RTP/SCS conforms to the State Implementation Plan (SIP) for air quality.

3.6.3 Environmental Review and Consultation Requirements

Preparation of the 2018 RTP/SCS met both federal and SB 375 consultation requirements. See Public Outreach Chapter of 2018 RTP/SCS.

Table 3.0-8
Detailed 2018 RTP/SCS Transportation Projects List

Agency	Facility	Scope	Limits	Improvement	Purpose	Need
Dinuba	Ventura St.	Construct new roadway	M St. to Uruapan Dr.; .1 mi.	New 2-lane/signal/RR xing	Improve Circulation	Relieve Congestion
Dinuba	Saginaw St.	Construct new roadway	Lyndsay to Viscaya; .1 mi.	New 2-lane/signal/RR xing	Improve Circulation	Relieve Congestion
Dinuba	Rd. 72	Construct new roadway	Sierra to Kamm Ave; .6 mi.	New 2-lane	Improve Circulation	Relieve Congestion
Dinuba	Kamm/Rd 72	Kamm at Rd 72	Kamm at Rd 72	Traffic Signal	Improve Circulation	Safety
Dinuba	Kamm/Crawford	Kamm at Crawford	Kamm at Crawford	Traffic Signal	Improve Circulation	Safety
Dinuba	Crawford/Nebraska	Crawford at Nebraska	Crawford at Nebraska	Traffic Signal	Improve Circulation	Safety
Dinuba	Nebraska/Rd. 72	Nebraska at Rd. 72	Nebraska at Rd. 72	Traffic Signal	Improve Circulation	Safety
Dinuba	M St./Tulare	M St. at Tulare	M St. at Tulare	Traffic Signal	Improve Circulation	Safety
Dinuba	Lincoln/H St. at El Monte	Lincoln/H St. at El Monte Way	El Monte Way	Traffic Signal	Improve Circulation	Safety
Farmersville	Walnut Ave. & Freedom Dr.	Walnut Ave. & Freedom Dr.	Walnut Ave. & Freedom Dr.	Traffic Signal	Improve Circulation	Safety
Farmersville	Visalia Road & Steven	Visalia Road & Steven	Visalia Road & Steven	Traffic Signal	Improve Circulation	Safety
Farmersville	Walnut Ave. & Ventura	Walnut Ave. & Ventura	Walnut Ave. & Ventura	Traffic Signal	Improve Circulation	Safety
Lindsay	Sierra View St	Construct New Roadway	Foothill Ave to Strathmore Ave, 0.5mi	New 2-ln collector	Improve Circulation	Relieve Congestion
Lindsay	Fir St	Construct New Roadway	Sequoia Ave to Bellah Ave	New 2-ln collector	Improve Circulation	Relieve Congestion
Porterville	Westwood St.	Widen existing roadway	Henderson Ave. to Friant-Kern Canal	Widen from 2 to 4 lanes	Increase Capacity	Relieve Congestion

Agency	Facility	Scope	Limits	Improvement	Purpose	Need
Porterville	Gibbons Ave.	Widen existing roadway	Jaye St. to Indiana St.; 0.5 mi	Widen from 2 to 4 lanes	Increase Capacity	Relieve Congestion
Porterville	Hillcrest St.	Construct new roadway	Worth to SR190; 0.5mi	New Construction	Improve Circulation	Relieve Congestion
Porterville	Hillcrest St.	Construct new roadway	SR190 to Roby; 0.75mi	New Construction	Improve Circulation	Relieve Congestion
Porterville	Hillcrest St.	Widen existing roadway	Roby Ave to Olive Ave 0.25mi	Widen to 4-lane Arterial	Increase Capacity	Relieve Congestion
Porterville	Hillcrest St.	Construct new roadway	Olive Ave to Putnam Ave 0.25mi	New Construction	Improve Circulation	Relieve Congestion
Porterville	Hillcrest St.	Widen existing roadway	Putnam Ave to Morton Ave 0.25mi	Complete 4-lane Arterial	Increase Capacity	Relieve Congestion
Porterville	Worth Ave	Construct new roadway	Crystal to Scranton Ave	New Construction	Improve Circulation	Relieve Congestion
Porterville	Main St.	Widen existing roadway	Henderson Ave. to Linda Vista	Widen to 4-lane Arteriral	Increase Capacity	Relieve Congestion
Porterville	Olive Ave.	Widen existing roadway	Friant-Kern Canal to Tule River	Widen to 4-lane Arteriral	Increase Capacity	Relieve Congestion
Porterville	Plano St.	Widen existing roadway	Scranton Ave. to SR 190	Widen to 4-lane Arteriral	Increase Capacity	Relieve Congestion
Porterville	Westwood St.	Widen existing roadway	SR 190 to Tule River	Widen to 4-lane Arterial	Increase Capacity	Relieve Congestion
Porterville	Westwood St.	Widen existing roadway	Tule River to Roby Ave.	Widen to 4-lane Arterial	Increase Capacity	Relieve Congestion
Porterville	Westwood St	Widen existing roadway	Westwood St Bridge at Porter Slough	Bridge Widening	Increase Capacity	Relieve Congestion
Porterville	Morton Ave.	Morton at Mathew St	Morton at Mathew St	Traffic Signal	Improve Circulation	Safety
Porterville	Henderson Ave.	Henderson at Mathew St	Henderson at Mathew St	Traffic Signal	Improve Circulation	Safety
Porterville	Henderson Ave.	Henderson At Plano St	Henderson At Plano St	Traffic Signal	Improve Circulation	Safety
Porterville	Mulberry Ave	Mulberry at Newcomb St	Mulberry at Newcomb St	Traffic Signal	Improve Circulation	Safety
Porterville	Westfield Ave	Westfield at Westwood St	Westfield at Westwood St	Traffic Signal	Improve Circulation	Safety
Porterville	Westfield Ave	Westfield at Mathew St	Westfield at Mathew St	Traffic Signal	Improve Circulation	Safety
Porterville	Westfield Ave	Westfield at Indiana St	Westfield at Indiana St	Traffic Signal	Improve Circulation	Safety
Porterville	Westfield Ave	Westfield at Main St	Westfield at Main St	Traffic Signal	Improve Circulation	Safety
Porterville	North Grand Ave	North Grand at Newcomb	North Grand at Newcomb St	Traffic Signal	Improve	Safety

Agency	Facility	Scope	Limits	Improvement	Purpose	Need
		St			Circulation	
Porterville	North Grand Ave	North Grand at Prospect	North Grand at Prospect	Traffic Signal	Improve Circulation	Safety
Porterville	North Grand Ave	North Grand at Main St	North Grand at Main St	Traffic Signal	Improve Circulation	Safety
Porterville	Newcomb St.	Newcbomb St at Pioneer Ave	Newcomb St at Pioneer Ave	Traffic Signal	Improve Circulation	Safety
Porterville	Prospect St.	Prospect St at Pioneer Ave	Prospect St at Pioneer Ave	Traffic Signal	Improve Circulation	Safety
Porterville	Westfield Ave	Westfield Ave at Plano St	Westfield Ave at Plano St	Traffic Signal	Improve Circulation	Safety
Porterville	Morton Ave.	Morton Ave at Hillcrest St	Morton Ave at Hillcrest St	Traffic Signal	Improve Circulation	Safety
Porterville	Olive Ave.	Olive Ave at Hillcrest St	Olive Ave at Hillcrest St	Traffic Signal	Improve Circulation	Safety
Porterville	Indiana St	Indiana St at Springville Dr	Indiana St at Springville Dr	Traffic Signal	Improve Circulation	Safety
Porterville	Hillcrest St.	Hillcrest St at Springville Dr	Hillcrest St at Springville Dr	Traffic Signal	Improve Circulation	Safety
Tulare	Blackstone Drive	Construct new roadway	south of Industrial Ave. to "K" St.; .4 mi.	New Construction	Improve Circulation	Relieve Congestion
Tulare	Bardsley Ave.	Widen existing roadway	West St. to Pratt St.; .5 mi.	Widen from 2 to 4 lanes	Increase Capacity	Relieve Congestion
Tulare	Bardsley Ave.	Widen existing roadway	Irwin St. to Mooney Blvd.; .3 mi.	Widen from 2 to 4 lanes	Increase Capacity	Relieve Congestion
Tulare	Bardsley Ave.	Widen existing roadway	Mooney Blvd. to Oakmore St.; 1.0 mi.	Widen from 2 to 4 lanes	Increase Capacity	Relieve Congestion
Tulare	Cross Ave.	Widen existing roadway	"O" St. to Blackstone St.; .7 mi.	Widen from 2 to 4 lanes	Increase Capacity	Relieve Congestion
Tulare	Cross Ave.	Widen existing roadway	Tulare Drive to West St.; .5 mi.	Widen from 2 to 4 lanes	Increase Capacity	Relieve Congestion
Tulare	Prosperity Ave.	Widen existing roadway	Oaks St. to West William St.; .2 mi.	Widen from 2 to 4 lanes	Increase Capacity	Relieve Congestion
Tulare	Prosperity Ave.	Widen existing roadway	Solaria St. to Mooney Blvd.; .1 mi	Widen from 4 to 6 lanes	Increase Capacity	Relieve Congestion
Tulare	Prosperity Ave.	Widen existing roadway	Mooney Blvd. to Oakmore St.; 1.0 mi.	Widen from 2 to 4 lanes	Increase Capacity	Relieve Congestion
Tulare	Cartmill Ave.	Widen existing roadway	Akers St. to Mooney Blvd.; 1.5mi	Widen from 2 to 4 lanes	Increase Capacity	Relieve Congestion
Tulare	Paige Ave.	Widen existing roadway	K St. to Laspina St.; .75 mi.	Widen from 2 to 4 lanes	Increase Capacity	Relieve Congestion
Tulare	Foster Drive	Widen existing roadway	Laspina St. to Mooney Blvd.; .6 mi.	Widen from 2 to 4 lanes	Increase Capacity	Relieve Congestion

Agency	Facility	Scope	Limits	Improvement	Purpose	Need
Tulare	West St.	Widen existing roadway	Bardsley Ave. to Sonora Ave.; .3 mi.	Widen from 2 to 4 lanes	Increase Capacity	Relieve Congestion
Tulare	West St.	Widen existing roadway	Inyo Ave. to Prosperity Ave.; 1 mi.	Widen from 2 to 4 lanes	Increase Capacity	Relieve Congestion
Tulare	"E" St.	Widen existing roadway	Pleasant Ave. to Elster Ave.; 1.25 mi	Widen from 2 to 4 lanes	Increase Capacity	Relieve Congestion
Tulare	"J" St.	Widen existing roadway	Lynn Ave. to Cartmill Ave.; .8 mi.	Widen from 2 to 4 lanes	Increase Capacity	Relieve Congestion
Tulare	Blackstone St.	Widen existing roadway	Paige Ave. to Bardsley Ave.; 1 mi. (partial)	Widen from 2 to 4 lanes	Increase Capacity	Relieve Congestion
Tulare	Laspina St.	Widen existing roadway	Paige Ave. to Aspen Ave.; .2 mi.	Widen from 2 to 4 lanes	Increase Capacity	Relieve Congestion
Tulare	Mooney Blvd.	Widen existing roadway	Foster Drive to Bardsley Ave.; .7 mi. (partial)	Widen from 2 to 4 lanes	Increase Capacity	Relieve Congestion
Tulare	Tulare Dr	Widen existing roadway	Cross Ave. to West St.; .7 mi. (partial)	Widen from 2 to 4 lanes	Increase Capacity	Relieve Congestion
Tulare	Levin Ave.	Construct new roadway	Mooney Blvd. to Oakmore St; 1.0 mi.	New Construction	Improve Circulation	Relieve Congestion
Tulare	Blackstone St.	Widen existing roadway	Tulare Ave. to Merritt Ave.; .8 mi	Widen from 2 to 4 lanes	Increase Capacity	Relieve Congestion
Tulare	Pleasant Ave.	Construct new roadway	SPRR at Grade Crossing	New Construction	Improve Circulation	Relieve Congestion
Tulare	Kern Ave. / TID Canal	Construct new roadway	Bridge over TID Canal	New Construction	Improve Circulation	Relieve Congestion
Tulare	Akers St.	Construct new roadway	Corvina Ave. to Cartmill Ave.; .5 mi	New Construction	Improve Circulation	Relieve Congestion
Tulare	Commercial Ave.	Widen existing roadway	"K" St. to Hwy 99; .4 mi	Widen from 2 to 4 lanes	Increase Capacity	Relieve Congestion
Tulare	Commercial Ave.	Construct new roadway	Laspina St. to Turner Dr.; .75 mi	New 4-lane roadway	Improve Circulation	Relieve Congestion
Tulare	Commercial Ave.	Construct new roadway	Turner Dr. to Oakmore St.; .75 mi	New 4-lane roadway	Improve Circulation	Relieve Congestion
Tulare	Corvina Ave.	Construct new roadway	Akers St. to Hillman St. .125 mi	New 2-lane roadway	Improve Circulation	Relieve Congestion
Tulare	"E" St.	Construct new roadway	Elster Ave. to Cartmill Ave.; .5 mi	New Construction	Improve Circulation	Relieve Congestion
Tulare	"H" St.	Construct new roadway	Paige Ave. to Bardsley Ave.; 1.0 mi	New 2-lane roadway	Improve Circulation	Relieve Congestion
Tulare	"J" St.	Widen existing roadway	Cartmill Ave. to Pacific Ave.; .5 mi	Widen from 2 to 4 lanes	Increase Capacity	Relieve Congestion

Agency	Facility	Scope	Limits	Improvement	Purpose	Need
Tulare	"J" St.	Widen existing roadway	Pacific Ave. to Hwy 99; .5 mi	Widen from 2 to 4 lanes	Increase Capacity	Relieve Congestion
Tulare	Laspina St.	Widen existing roadway	Ave. 200 to Tulare Golf Course; .5 mi	Widen from 2 to 4 lanes	Increase Capacity	Relieve Congestion
Tulare	Oakmore St.	Construct new roadway	Commercial Ave. to Bardsley Ave.; .5 mi	New 2-lane roadway	Improve Circulation	Relieve Congestion
Tulare	Tulare Ave.	Widen existing roadway	Enterprise St. to Tulare Dr.; .5 mi	Reconstruct to 4 lanes	Increase Capacity	Relieve Congestion
Tulare	Corvina Ave./Retherford St.	Corvina Ave. at Retherford St.	Corvina Ave. @ Retherford St.	Roundabout	Improve Circulation	Safety
Tulare	E St. / Maple Ave.	E St. at Maple Ave.	"E" St. at Maple Ave.	Traffic Signal	Improve Circulation	Safety
Tulare	Laspina St. / Paige Ave.	Laspina St. / Paige Ave.	Laspina St. at Paige Ave.	Traffic Signal	Improve Circulation	Safety
Tulare	Inyo Ave. / West St.	Inyo Ave. at West St.	Inyo Ave. @ West St.	Traffic Signal	Improve Circulation	Safety
Tulare	Cross Ave. / Mooney Blvd	Cross Ave. at Mooney Blvd	Cross Ave. @ Mooney Blvd (SR 63)	Traffic Signal	Improve Circulation	Safety
Tulare	Prosperity Ave. / West St.	Prosperity Ave. at West St.	Prosperity Ave. @ West St.	Traffic Signal	Improve Circulation	Safety
Tulare	Cartmill Ave. / De La Vina St.	Cartmill Ave. at De La Vina St.	Cartmill Ave. @ De La Vina	Traffic Signal	Improve Circulation	Safety
Tulare	Pleasant Ave. / "E" St.	Pleasant Ave. at "E" St.	Pleasant Ave. @ "E" St.	Traffic Signal	Improve Circulation	Safety
Tulare	Bardsley Ave. / West St.	Bardsley Ave. at West St.	Bardsley Ave. @ West St.	Traffic Signal	Improve Circulation	Safety
Tulare	Tulare Ave. / Oakmore St.	Tulare Ave. at Oakmore St.	Tulare Ave. @ Oakmore St.	Traffic Signal	Improve Circulation	Safety
Tulare	Paige Ave. / Blackstone St.	Paige Ave. at Blackstone St.	Paige Ave. @ Blackstone St.	Traffic Signal	Improve Circulation	Safety
Tulare	Prosperity Ave. / Oaks St.	Prosperity Ave. at Oaks St.	Prosperity Ave. @ Oaks St.	Traffic Signal	Improve Circulation	Safety
Tulare	Merritt Ave. / Cherry St.	Merritt Ave. at Cherry St.	Merritt Ave. @ Cherry St.	Traffic Signal	Improve Circulation	Safety
Tulare	Merritt Ave. / M St.	Merritt Ave. at M St.	Merritt Ave. @ "M" St.	Traffic Signal	Improve Circulation	Safety
Tulare	Alpine Ave. / Mooney Blvd.	Alpine Ave. at Mooney Blvd,	Alpine Ave. @ Mooney Blvd.	Traffic Signal	Improve Circulation	Safety
Tulare	Bardsley Ave./"H" St.	Bardsley Ave. at "H" St.	Bardsley Ave. @ "H" St.	Traffic Signal	Improve	Safety

Agency	Facility	Scope	Limits	Improvement	Purpose	Need
					Circulation	
Tulare	Bardsley Ave. / Oakmore St.	Bardsley Ave. at Oakmore St.	Bardsley Ave. @ Oakmore St.	Traffic Signal	Improve Circulation	Safety
Tulare	Bardsley Ave./Pratt St.	Bardsley Ave. at Pratt St.	Bardsley Ave. @ Pratt St.	Traffic Signal	Improve Circulation	Safety
Tulare	Bella Oaks Ave. / Hwy 63	Bella Oaks Ave. at Hwy 63	Bella Oaks Ave. @ Hwy 63	Traffic Signal	Improve Circulation	Safety
Tulare	Cartmill Ave./West St.	Cartmill Ave. at West St.	Cartmill Ave. @ West St.	Traffic Signal	Improve Circulation	Safety
Tulare	Cartmill Ave./Retherford St.	Cartmill Ave. at Retherford St.	Cartmill Ave. @ Retherford St.	Traffic Signal	Improve Circulation	Safety
Tulare	Commercial Ave./"K" St.	Commercial Ave. at "K" St.	Commercial Ave. @ "K" St.	Traffic Signal	Improve Circulation	Safety
Tulare	Commercial Ave./Laspina St.	Commercial Ave. at Laspina St.	Commercial Ave. @ Laspina St.	Traffic Signal	Improve Circulation	Safety
Tulare	Commercial Ave./Turner Dr.	Commercial Ave. at Turner Dr.	Commercial Ave. @ Turner Dr.	Traffic Signal	Improve Circulation	Safety
Tulare	Cross Ave. / "H" St.	Cross Ave. at "H" St.	Cross Ave. @ "H" St.	Traffic Signal	Improve Circulation	Safety
Tulare	Foster Dr. / Turner Dr.	Foster Dr. at Turner Dr.	Foster Dr. @ Turner Dr.	Traffic Signal	Improve Circulation	Safety
Tulare	Levin Ave./Mooney Blvd.	Levin Ave. at Mooney Blvd.	Levin Ave. @ Mooney Blvd.	Traffic Signal	Improve Circulation	Safety
Tulare	Paige Ave. / "H" St.	Paige Ave. at "H" St.	Paige Ave. @ "H" St.	Traffic Signal	Improve Circulation	Safety
Tulare	Paige Ave. / Laspina St.	Paige Ave. at Laspina St.	Paige Ave. @ Laspina St.	Traffic Signal	Improve Circulation	Safety
Tulare	Paige Ave. / Pratt St.	Paige Ave. at Pratt St.	Paige Ave. @ Pratt St.	Traffic Signal	Improve Circulation	Safety
Tulare	Paige Ave. / West St.	Paige Ave. at West St.	Paige Ave. @ West St.	Traffic Signal	Improve Circulation	Safety
Tulare	Pleasant Ave. / West St.	Pleasant Ave. at West St.	Pleasant Ave. @ West St.	Traffic Signal	Improve Circulation	Safety
Tulare	Hwy 137 / Morrison St.	Hwy 137 at Morrison St.	Hwy 137 @ Morrison St.	Traffic Signal	Improve Circulation	Safety
Tulare	Seminole Ave. / Hwy 63	Seminole Ave. at Hwy 63	Seminole Ave. @ Hwy 63	Traffic Signal	Improve Circulation	Safety

Agency	Facility	Scope	Limits	Improvement	Purpose	Need
Visalia	Houston Ave.	Widen existing roadway	Ben Maddox to Lovers Lane; 1 mi.	Widen from 2 to 4 lanes	Increase Capacity	Relieve Congestion
Visalia	Houston Ave.	Widen existing roadway	Mooney to Santa Fe; 1.5mi	Widen from 2 to 4 lanes	Increase Capacity	Relieve Congestion
Visalia	Murray Ave.	Widen existing roadway	Giddings to Santa Fe; 1 mi.	Widen from 2 to 4 lanes	Increase Capacity	Relieve Congestion
Visalia	Santa Fe St.	Construct new roadway	Riggin to Shannon Parkway; 0.25 mi.	New 4-lane; arterial	Improve Circulation	Relieve Congestion
Visalia	Santa Fe St.	Construct new roadway	Houston to Riggin; 1 mi.	New 4-lane; collector	Improve Circulation	Relieve Congestion
Visalia	Santa Fe St.	Widen existing roadway	Tulare to Houston; 1.5 mi.	Widen from 2 to 4 lanes	Increase Capacity	Relieve Congestion
Visalia	Santa Fe St.	Widen existing roadway	K St to Tulare; .8 mi.	Widen from 2 to 4 lanes	Increase Capacity	Relieve Congestion
Visalia	Santa Fe St.	Widen existing roadway	Caldwell to "K"; 0.7 mi.	Widen from 2 to 4 lanes	Increase Capacity	Relieve Congestion
Visalia	Akers Street	Widen existing roadway	Riggin to Avenue 320; 1 mi.	Widen from 2 to 4 lanes	Increase Capacity	Relieve Congestion
Visalia	Akers Street	Widen existing roadway	Ferguson to Riggin; 0.5 mi.	Widen from 3 to 4 lanes	Increase Capacity	Relieve Congestion
Visalia	Akers Street	Widen existing roadway	Caldwell to Visalia Pkwy (Ave. 276); 0.5 mi.	Widen from 2 to 4 lanes	Increase Capacity	Relieve Congestion
Visalia	Akers Street	Widen existing roadway	Tulare to Hillsdale; 0.7mi	Widen from 4 to 6 lanes	Increase Capacity	Relieve Congestion
Visalia	Cain Street	Construct new roadway	Goshen to Douglas; 0.2 mi.	New 2-lane; collector	Improve Circulation	Relieve Congestion
Visalia	Court St.	Widen existing roadway	Walnut to Tulare; .5 mi.	Widen from 2 to 4 lanes	Increase Capacity	Relieve Congestion
Visalia	Ferguson Ave.	Construct new roadway	east of Plaza to Kelsey; .2 mi.	New 2-lane; collector	Improve Circulation	Relieve Congestion
Visalia	Ferguson Ave.	Construct new roadway	American (Rd 76) to west of Plaza; 0.1 mi.	New 2-lane; collector	Improve Circulation	Relieve Congestion
Visalia	Goshen Avenue	Widen existing roadway	Santa Fe to Lovers Lane; 1.6 mi.	Widen from 2 to 4 lanes	Increase Capacity	Relieve Congestion
Visalia	Kelsey Street	Construct new roadway	Doe to Riggin; 0.7 mi.	New 2-lane; collector	Improve Circulation	Relieve Congestion
Visalia	Mooney Blvd (SR 63)	Widen existing roadway	Avenue 272 to Avenue 276; 0.5 mi.	Widen from 4 to 6 lanes	Increase Capacity	Relieve Congestion
Visalia	Mooney Blvd.	Widen existing roadway	Goshen to Houston; .4mi	Widen from 2 to 4 lanes	Increase Capacity	Relieve Congestion
Visalia	Mooney Blvd.	Widen existing roadway	Ferguston to Riggin; 0.5mi	Widen from 2 to 4 lanes	Increase Capacity	Relieve Congestion
Visalia	Mooney Blvd.	Construct new roadway	Riggin to Avenue 320; 1 mi.	New 4-lane; arterial	Improve Circulation	Relieve Congestion
Visalia	Sunnyview Avenue	Construct new roadway	Kelsey to Clancy; 0.5 mi.	New 2-lane; collector	Improve Circulation	Relieve Congestion
Visalia	Virmargo Street	Construct new roadway	Goshen to Houston; 0.5 mi.	New 2-lane; collector	Improve	Relieve Congestion

Agency	Facility	Scope	Limits	Improvement	Purpose	Need
					Circulation	
Visalia	Chinowth Street	Construct new roadway	Goshen to Houston; 0.2 mi.	New 2-lane; collector	Improve Circulation	Relieve Congestion
Visalia	Chinowth Street	Construct new roadway	Ave 272 to Ave 276; 0.5 mi.	New 2-lane; collector	Improve Circulation	Relieve Congestion
Visalia	Court Street	Construct new roadway	Ave 272 to Ave 276; 0.5 mi.	New 4-lane; collector	Improve Circulation	Relieve Congestion
Visalia	Linwood Street	Construct new roadway	Ave 272 to Ave 276; 0.5 mi.	New 2-lane; collector	Improve Circulation	Relieve Congestion
Visalia	Linwood Street	Construct new roadway	Riggin to Avenue 320 ; 1 mi.	New 2-lane; collector	Improve Circulation	Relieve Congestion
Visalia	Pinkham Street	Construct new roadway	Avenue 272 to Caldwell; 0.9 mi.	New 2-lane; collector	Improve Circulation	Relieve Congestion
Visalia	Roeben Street	Construct new roadway	Caldwell to Whitendale ; 0.5 mi.	New 2-lane; collector	Improve Circulation	Relieve Congestion
Visalia	Shirk Road	Widen existing roadway	SR198 to Goshen Ave; 1 mi.	Widen from 2 to 4 lanes	Increase Capacity	Relieve Congestion
Visalia	Shirk Street	Widen existing roadway	Goshen to Riggin; 1 mi.	Widen from 2 to 4 lanes	Increase Capacity	Relieve Congestion
Visalia	Stonebrook Street	Construct new roadway	Caldwell to Cameron; .25 mi.	New 2-lane; collector	Improve Circulation	Relieve Congestion
Visalia	Stonebrook Street	Construct new roadway	Avenue 272 to Avenue 276; .5 mi.	New 2-lane; collector	Improve Circulation	Relieve Congestion
Visalia	Tulare Avenue	Construct new roadway	Shirk to Roeben; 0.5 mi.	New 2-lane; collector	Improve Circulation	Relieve Congestion
Visalia	Walnut Avenue	Widen existing roadway	Cedar to McAuliff; 0.7 mi.	Widen from 2 to 4 lanes	Increase Capacity	Relieve Congestion
Visalia	Walnut Avenue	Widen existing roadway	McAuliff to Rd 148; 0.5 mi.	Widen from 2 to 4 lanes	Increase Capacity	Relieve Congestion
Visalia	Walnut Avenue	Widen existing roadway	Shirk to Roeben; .5 mi.	Widen from 2 to 4 lanes	Increase Capacity	Relieve Congestion
Visalia	Avenue 320	Construct new roadway	Demaree to Mooney; 1 mi.	New 2-lane; 1/2 arterial	Improve Circulation	Relieve Congestion
Visalia	Ben Maddox Way	Construct new roadway	Avenue 272 to Caldwell; 0.9 mi.	New 4-lane; arterial	Improve Circulation	Relieve Congestion
Visalia	County Center Drive	Construct new roadway	Avenue 272 to Visalia Pkwy; 0.5 mi.	New 2-lane; collector	Improve Circulation	Relieve Congestion
Visalia	County Center Drive	Construct new roadway	Pratt to Avenue 320; 0.4 mi.	New 2-lane; collector	Improve Circulation	Relieve Congestion
Visalia	Demaree St.	Widen existing roadway	Pratt to Avenue 320; 0.4 mi.	Widen from 2 to 4 lanes	Increase Capacity	Relieve Congestion
Visalia	Hurley Avenue	Construct new roadway	Kelsey to Shirk; 1 mi.	New 2-lane; collector	Improve	Relieve Congestion

Agency	Facility	Scope	Limits	Improvement	Purpose	Need
					Circulation	
Visalia	Hurley Avenue	Construct new roadway	Road 76 to Plaza; 0.5 mi.	New 2-lane; collector	Improve Circulation	Relieve Congestion
Visalia	Kelsey Street	Construct new roadway	Riggin to Avenue 320; 1 mi.	New 2-lane; collector	Improve Circulation	Relieve Congestion
Visalia	McAuliff Street	Construct new roadway	Avenue 272 to Caldwell; 1 mi.	New 2-lane; collector	Improve Circulation	Relieve Congestion
Visalia	McAuliff Street	Construct new roadway	Walnut to Caldwell; 1 mi.	New 2-lane; collector	Improve Circulation	Relieve Congestion
Visalia	Road 76 (American)	Construct new roadway	Ferguson (Ave 308) to Riggin; 0.5 mi.	New 2-lane; collector	Improve Circulation	Relieve Congestion
Visalia	Road 76 (American)	Construct new roadway	Hurley to Legacy; 0.2 mi.	New 2-lane; collector	Improve Circulation	Relieve Congestion
Visalia	Road 88	Construct new roadway	Riggin to Avenue 320; 1 mi.	New 2-lane; collector	Improve Circulation	Relieve Congestion
Visalia	Road 96 (Roeben St)	Construct new roadway	Riggin to Avenue 320; 1 mi.	New 2-lane; collector	Improve Circulation	Relieve Congestion
Visalia	Road 148 (Tower St.)	Construct new roadway	Houston (SR 216) to St. John Pkwy; 0.2 mi.	New 4-lane; Arterial	Improve Circulation	Relieve Congestion
Visalia	Road 148 (Tower St.)	Construct new roadway	Mineral King to Houston; .9 mi.	New 4-lane; Arterial	Improve Circulation	Relieve Congestion
Visalia	Road 148 (Tower St.)	Construct new roadway	Walnut to Noble; 0.9 mi.	New 4-lane; Arterial	Improve Circulation	Relieve Congestion
Visalia	Shannon Parkway	Construct new roadway	Dinuba Blvd. (SR 63) to Santa Fe; 0.5 mi.	New 2-lane; collector	Improve Circulation	Relieve Congestion
Visalia	St Johns Parkway	Construct new roadway	McAuliff to Rd 148; 0.5 mi.	New 2-lane; collector	Improve Circulation	Relieve Congestion
Visalia	Whitendale Avenue	Construct new roadway	Shirk to Roeben; 0.5 mi.	New 2-lane; collector	Improve Circulation	Relieve Congestion
Visalia	Burke Street	Construct new roadway	Roosevelt to Houston; 0.1 mi.	New 2-lane; collector	Improve Circulation	Relieve Congestion
Visalia	Avenue 316	Construct new roadway	Linwood to Roeben; 1.0 mi.	New 2-lane; local	Improve Circulation	Relieve Congestion
Visalia	Avenue 316	Construct new roadway	Roeben to Road 88; 1.0 mi.	New 2-lane; local	Improve Circulation	Relieve Congestion
Visalia	Avenue 316	Construct new roadway	Road 88 to Road 80; 1.0 mi.	New 2-lane; local	Improve Circulation	Relieve Congestion

Agency	Facility	Scope	Limits	Improvement	Purpose	Need
Visalia	Court St at Whitendale Ave	Court St at Whitendale Ave	Court St at Whitendale Ave	Traffic Signal	Improve Circulation	Safety
Visalia	Ben Maddox Way at K Ave	Ben Maddox Way at K Ave	Ben Maddox Way at K Ave	Traffic Signal	Improve Circulation	Safety
Visalia	Burke St at Main St	Burke St at Main St	Burke St at Main St	Traffic Signal	Improve Circulation	Safety
Visalia	College Ave at Lovers Lane	College Ave at Lovers Lane	College Ave at Lovers Lane	Traffic Signal	Improve Circulation	Safety
Visalia	Bridge St at Main St	Bridge St at Main St	Bridge St at Main St	Traffic Signal	Improve Circulation	Safety
Visalia	Cain St at Main St	Cain St at Main St	Cain St at Main St	Traffic Signal	Improve Circulation	Safety
Visalia	Bridge St at Center Ave	Bridge St at Center Ave	Bridge St at Center Ave	Traffic Signal	Improve Circulation	Safety
Visalia	Burke St at Tulare Ave	Burke St at Tulare Ave	Burke St at Tulare Ave	Traffic Signal	Improve Circulation	Safety
Visalia	Court St at Paradise Ave	Court St at Paradise Ave	Court St at Paradise Ave	Traffic Signal	Improve Circulation	Safety
Visalia	Divisadero St at Walnut Ave	Divisadero St at Walnut Ave	Divisadero St at Walnut Ave	Traffic Signal	Improve Circulation	Safety
Visalia	Bridge St at Murray Ave	Bridge St at Murray Ave	Bridge St at Murray Ave	Traffic Signal	Improve Circulation	Safety
Visalia	Chinowth St at Goshen Ave	Chinowth St at Goshen Ave	Chinowth St at Goshen Ave	Traffic Signal	Improve Circulation	Safety
Visalia	Center Ave at Conyer St	Center Ave at Conyer St	Center Ave at Conyer St	Traffic Signal	Improve Circulation	Safety
Visalia	Cypress Ave at Linwood St	Cypress Ave at Linwood St	Cypress Ave at Linwood St	Traffic Signal	Improve Circulation	Safety
Visalia	County Center at Houston Ave	County Center at Houston Ave	County Center at Houston Ave	Traffic Signal	Improve Circulation	Safety
Visalia	Grape St at NE 3rd	Grape St at NE 3rd	Grape St at NE 3rd	Traffic Signal	Improve Circulation	Safety
Visalia	Houston Ave at Rinaldi St	Houston Ave at Rinaldi St	Houston Ave at Rinaldi St	Traffic Signal	Improve Circulation	Safety
Visalia	Bridge St at Tulare Ave	Bridge St at Tulare Ave	Bridge St at Tulare Ave	Traffic Signal	Improve Circulation	Safety
Visalia	Acequia Ave at Bridge	Acequia Ave at Bridge St	Acequia Ave at Bridge St	Traffic Signal	Improve	Safety

Agency	Facility	Scope	Limits	Improvement	Purpose	Need
	St				Circulation	
Visalia	Visalia Mall entrance at Walnut	Visalia Mall entrance at Walnut Ave	Visalia Mall entrance at Walnut Ave	Traffic Signal	Improve Circulation	Safety
Visalia	Jacob St at Main St.	Jacob St at Main St.	Jacob St at Main St.	Traffic Signal	Improve Circulation	Safety
Visalia	Shirk St at Walnut Ave	Shirk St at Walnut Ave	Shirk St at Walnut Ave	Traffic Signal	Improve Circulation	Safety
Visalia	West St at Whitendale Ave	West St at Whitendale Ave	West St at Whitendale Ave	Traffic Signal	Improve Circulation	Safety
Visalia	County Center at Ferguson Ave	County Center at Ferguson Ave	County Center at Ferguson Ave	Traffic Signal	Improve Circulation	Safety
Visalia	Main St at Mineral King Ave	Main St at Mineral King Ave	Main St at Mineral King Ave	Traffic Signal	Improve Circulation	Safety
Visalia	Giddings St at Riggin Ave	Giddings St at Riggin Ave	Giddings St at Riggin Ave	Traffic Signal	Improve Circulation	Safety
Visalia	Central St at Tulare Ave	Central St at Tulare Ave	Central St at Tulare Ave	Traffic Signal	Improve Circulation	Safety
Visalia	McAuliff St at Walnut Ave	McAuliff St at Walnut Ave	McAuliff St at Walnut Ave	Traffic Signal	Improve Circulation	Safety
Visalia	Doe Ave at Shirk St	Doe Ave at Shirk St	Doe Ave at Shirk St	Traffic Signal	Improve Circulation	Safety
Visalia	Beech Ave at Court St	Beech Ave at Court St	Beech Ave at Court St	Traffic Signal	Improve Circulation	Safety
Visalia	Roeben St at Walnut Ave	Roeben St at Walnut Ave	Roeben St at Walnut Ave	Traffic Signal	Improve Circulation	Safety
Visalia	Ferguson Ave at Mooney Blvd	Ferguson Ave at Mooney Blvd	Ferguson Ave at Mooney Blvd	Traffic Signal	Improve Circulation	Safety
Visalia	Cain St at Mineral King Ave	Cain St at Mineral King Ave	Cain St at Mineral King Ave	Traffic Signal	Improve Circulation	Safety
Visalia	Damsen Ave at Demaree St	Damsen Ave at Demaree St	Damsen Ave at Demaree St	Traffic Signal	Improve Circulation	Safety
Visalia	University St at Whitnedale Ave	University St at Whitnedale Ave	University St at Whitnedale Ave	Traffic Signal	Improve Circulation	Safety
Visalia	Crenshaw St at Whitendale Ave	Crenshaw St at Whitendale Ave	Crenshaw St at Whitendale Ave	Traffic Signal	Improve Circulation	Safety
Visalia	Ferguson Ave at Linwood St	Ferguson Ave at Linwood St	Ferguson Ave at Linwood St	Traffic Signal	Improve Circulation	Safety

Agency	Facility	Scope	Limits	Improvement	Purpose	Need
Visalia	K Ave at Pinkham St	K Ave at Pinkham St	K Ave at Pinkham St	Traffic Signal	Improve Circulation	Safety
Visalia	Burke St at Center Ave	Burke St at Center Ave	Burke St at Center Ave	Traffic Signal	Improve Circulation	Safety
Visalia	Court St at Ferguson Ave	Court St at Ferguson Ave	Court St at Ferguson Ave	Traffic Signal	Improve Circulation	Safety
Visalia	County Center at Packwood Ave	County Center at Packwood Ave	County Center at Packwood Ave	Traffic Signal	Improve Circulation	Safety
Visalia	Burke St at Goshen Ave	Burke St at Goshen Ave	Burke St at Goshen Ave	Traffic Signal	Improve Circulation	Safety
Visalia	Burke St at St Johns Pkwy	Burke St at St Johns Pkwy	Burke St at St Johns Pkwy	Traffic Signal	Improve Circulation	Safety
Visalia	County Center at Riggin Ave	County Center at Riggin Ave	County Center at Riggin Ave	Traffic Signal	Improve Circulation	Safety
Visalia	Cameron Ave at County Center	Cameron Ave at County Center	Cameron Ave at County Center	Traffic Signal	Improve Circulation	Safety
Caltrans	SR 99	Widen existing roadway	30.6/35.2 Tulare/Tagus - Prosperity Ave to 1.2m S of Ave 280	Widen from 4 to 6 lanes	Increase Capacity	Relieve Congestion
Caltrans	SR 99	Widen existing roadway	25.5/30.6 Tulare - Avenue 200 to Prosperity Ave	Widen from 4 to 6 lanes	Increase Capacity	Relieve Congestion
Caltrans	SR 99	Widen existing roadway	16.0/25.5 South of Tipton to Avenue 200	Widen from 4 to 6 lanes	Increase Capacity	Relieve Congestion
Caltrans	SR 65	Widen existing roadway	10.9/15.6 Terra Bella - Ave 88 to Ave 124	Widen from 2 to 4 lanes	Increase Capacity	Relieve Congestion
Caltrans	SR 65	Widen existing roadway	6.1/11.4 Ducor - Orris UP to Ave 92	Widen from 2 to 4 lanes	Increase Capacity	Relieve Congestion
Caltrans	SR 65	Widen existing roadway	0.0/.6.6 County Line to Ave 56	Widen from 2 to 4 lanes	Increase Capacity	Relieve Congestion
Caltrans	SR 65	Widen existing roadway	29.5/32.3 Near Lindsay-from Hermosa Rd to Ave 244	Realignment and widen from 2 to 4 lanes	Increase Capacity	Relieve Congestion
Caltrans	SR 190	Widen existing roadway	8.5/15.0 Poplar/Porterville - Rte 65 to Road 184	Widen from 2 to 4 lanes	Increase Capacity	Relieve Congestion
Caltrans	SR198	Widen existing roadway	Exeter - Spruce to Yokohl Valley Rd	Widen from 2 to 4 lanes	Increase Capacity	Relieve Congestion
Caltrans	SR 216 (Houston)	Widen existing roadway	Rd 144 to Rd 148; 0.5 mi.	Widen from 2 to 4 lanes	Increase Capacity	Relieve Congestion
Caltrans	SR 216 (Houston)	Widen existing roadway	Rd 148 to Rd 152; 0.5 mi.	Widen from 2 to 4 lanes	Increase Capacity	Relieve Congestion
Caltrans	SR 99	Major I/C improvements	SR-99 at Caldwell Avenue	Widen on/off ramps and	Improve	Relieve Congestion

Agency	Facility	Scope	Limits	Improvement	Purpose	Need
				bridge structure	Circulation	
Caltrans	SR 99	Construct new I/C	SR-99 at AgriCenter (Commercial)	Construct new Interchange	Improve Circulation	Relieve Congestion
Caltrans	SR 99	Major I/C improvements	SR-99 at Paige Ave.	Widen on/off ramps and bridge structure	Improve Circulation	Relieve Congestion
Caltrans	SR 198	Construct new I/C	SR-198 at Road 148	Construct new interchange	Improve Circulation	Relieve Congestion
Caltrans	SR 190	Major I/C improvements	SR-190 at Main Street	Widen bridge structure, new ramps	Improve Circulation	Relieve Congestion
Dinuba	Alta Avenue	Widen existing roadway	Sequoia to Avenue 432	Widen from 2 to 4 lanes	Increase Capacity	Relieve Congestion
Dinuba	Ave 416 (El Monte)	Widen existing roadway	Road 80 to Road 92*	Widen from 2 to 4 lanes	Increase Capacity	Relieve Congestion
Farmersville	Farmersville Blvd.	Farmersville Blvd.	Walnut Ave to Noble Ave. - 1 mi	Widen from 2 to 4 lanes	Increase Capacity	Relieve Congestion
Porterville	Westwood St	Widen existing road/bridge	South of Orange Ave to South of Tule River	Widen from 2 to 4 lanes	Increase Capacity	Relieve Congestion
Porterville	Newcomb St	New crossing over SR190	North of Tule River to south of Poplar Ditch	New 4 lane overcrossing	Improve Circulation	Relieve Congestion
Visalia	Riggin Avenue	Widen existing roadway	Road 80 to SR-63 (various sections)	Widen from 2 to 4 lanes	Increase Capacity	Relieve Congestion
Tulare Co.	Avenue 280	Widen existing roadway	Santa Fe (Visalia) to Lovers Ln (Visalia)	Widen from 2 to 4 lanes	Increase Capacity	Relieve Congestion
Tulare Co.	Avenue 280	Widen existing roadway	Lovers Ln (Visalia) to Virginia (Farmsersville)	Widen from 2 to 4 lanes	Increase Capacity	Relieve Congestion
Tulare Co.	Avenue 280	Widen existing roadway	Brundage (Farmersville) to Elberta (Exeter)	Widen from 2 to 4 lanes	Increase Capacity	Relieve Congestion
Tulare Co.	SR 99	Operational I/C improve.	SR-99 south county interchanges	Turn lane, intersection, ramp improvements	Improve Circulation	Safety
Tulare Co.	SR 99	Operational I/C improve.	SR-99 at Caldwell Ave (Ave 280)	Ramp signalization and intersection improv.	Improve Circulation	Safety
Porterville	SR 190	Operational I/C improve.	SR-190 at Main St and SR-65	WB Aux lane and ramp improvements	Improve Circulation	Safety
Visalia	SR 198	Operational I/C improve.	SR-198 at Shirk Street	Turn lane, intersection, ramp improvements	Improve Circulation	Safety
Visalia	SR 198	Operational I/C improve.	SR-198 at Akers Street	minor widening & safety improvements	Improve Circulation	Safety
Visalia	SR 198	Operational I/C improve.	SR-198 downtown corridor interchanges	Turn lane, intersection, ramp improvements	Improve Circulation	Safety
Visalia	SR 198	Operational I/C improve.	SR-198 at Lovers Lane	Turn lane, intersection,	Improve	Safety

Agency	Facility	Scope	Limits	Improvement	Purpose	Need
				ramp improvements	Circulation	
Farmersville	SR 198	Operational I/C improve.	SR-198 at Road 164 (Farmersville Blvd.)	Add roundabouts at westbound on/off ramps	Improve Circulation	Safety
Tulare Co.	SR 198/SR 65	Intersection Improvements	SR-198 at SR-65	Turn lanes, intersection improvements	Improve Circulation	Safety
Tulare Co.	SR 198	Intersection Improvements	SR-198 at Spruce Rd	Turn lanes, intersection improvements	Improve Circulation	Safety
Lindsay	SR 65	Intersection Improvements	SR-65 at Tulare Ave	Roundabout and local street improvements	Improve Circulation	Safety
Porterville	SR 190	Intersection Improvements	SR-190 at Westwood	Roundabout and intersection improvements	Improve Circulation	Safety
Porterville	SR 190	Intersection Improvements	SR-190 at Plano	Roundabout and intersection improvements	Improve Circulation	Safety
Dinuba	Nebraska/Alta	Intersection Improvements	Nebraska at Alta	Roundabout at intersection	Improve Circulation	Safety
Visalia	Santa Fe/Tulare	Intersection Improvements	Santa Fe at Tulare Ave	Roundabout at intersection	Improve Circulation	Safety
Porterville	Plano/College	Intersection Improvements	Plano at College	Roundabout at intersection	Improve Circulation	Safety

Source: Tulare County Regional Transportation Plan, 2018

4.0 ENVIRONMENTAL ANALYSIS

This section generally describes the regulatory framework and reviews the environmental setting for each issue area. Based on the regulatory context and existing setting, significant environmental impacts that could result from implementation of the Plan are analyzed and identified. These potential impacts are analyzed for the following environmental issues: aesthetics; agriculture and forestry resources; air quality; biological resources; cultural resources; greenhouse gas emissions; land use; noise; population and housing; public services; transportation; and utilities and service systems; and water supply and hydrology. Discussion of potential impacts is focused on the identification of changes that may be considered to be environmentally significant (a substantial, potentially substantial, or adverse change in the environment) relative to the existing environmental conditions.

Analysis of each environmental issue is organized into the following subsections:

Existing Setting: A description of existing conditions that precede implementation of the proposed project.

Regulatory Framework: An identification of applicable federal, state, and local regulations.

Thresholds Of Significance: The criteria by which the project components are measured to determine if the proposed project would cause a substantial or potentially substantial adverse change in the existing environmental conditions. This section also includes a discussion of the methodology used to determine impacts, where appropriate.

Impacts: An analysis of the beneficial and adverse effects of the proposed project, including, where appropriate, assessments of the significance of adverse impacts, including cumulative impacts, relative to established thresholds (relative to existing conditions per the California Environmental Quality Act [CEQA]).

Mitigation Measures: Whenever significant impacts relative to existing conditions are identified, mitigation measures are recommended to avoid or minimize impacts to the extent feasible.

Significance of Impacts After Mitigation: A discussion of whether a significant impact would be reduced to a less than significant level after mitigation under CEQA, or remain significant and unavoidable.

Cumulative Effects: A discussion of the project's contribution to any cumulative impacts.

4.1 AESTHETICS

This section describes the existing visual characteristics within the region, identifies the regulatory framework with respect to regulations that address aesthetic resources, and evaluates the significance of the changes in the visual character that could result from development of the 2018 RTP/SCS. In addition, mitigation measures are identified as appropriate and feasible to reduce significant adverse impacts.

4.1.1 ENVIRONMENTAL SETTING

To provide context for the analysis presented below, a discussion of general definitions is necessary. Terms such as "viewsheds" and "visual quality" are both key factors in addressing impacts to aesthetics and views. The environmental setting also generally describes those resources are regionally significant and lists the designated scenic highways, byways, and vista points.

The aesthetic value of an area is a measure of its visual character and quality, combined with the viewer response to the area. The scenic quality component can be best described as the overall impression that an individual viewer retains after driving through, walking through, or flying over an area. Viewer response is a combination of viewer exposure and viewer sensitivity. Viewer exposure is a function of the number of viewers, the number of views seen, the distance of the viewers, and the viewing duration. Viewer sensitivity relates to the extent of the public's concern for particular viewsheds. These terms and criteria are described in detail below.

Viewshed. A viewshed is a geographic area composed of land, water, biotic and/or cultural elements that may be seen from one or more viewpoints and has inherent scenic qualities and/or aesthetic value as determined by those who view it. The extent of a viewshed can be limited by a number of intervening elements, including trees and other vegetation, built structures, or topography such as hills and mountains.

Visual Quality. Visual quality refers to the character of the landscape which generally gives visual value to a setting.[1, 2] Various jurisdictions, within the County such as cities, the county, and federal or regional agencies, provide guidelines regarding the preservation and enhancement of visual quality in their plans or regulations.[3] An example of such guidance is the Caltrans Scenic Highway Guidelines, Examples of

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1 Federal Highways, "Visual Impact Assessments for Highway Projects," accessed April 2013 http://www.dot.ca.gov/ser/downloads/visual/FHWAVisualImpactAssmt.pdf

2 The term "visual quality" is used synonymously with "scenic quality" in this PEIR.

3 California cities and counties are not required to include visual quality elements in their General Plans, although many do. However, the General Plans are required to include a Conservation Element, which includes resources such as waterways and forests that frequently are also scenic resources.

Visual Intrusions along Scenic Corridors, which are presented in **Table 4.1-1, Caltrans Scenic Highways Guidelines: Examples of Visual Intrusions along Scenic Corridors**. As that table illustrates, a given visual element may be considered desirable or undesirable, depending on design, location, use, and other considerations. Because of the size and diversity of Tulare County, it is not possible or appropriate to apply uniform standards to all areas within the region.

Scenic resources can include natural open spaces, topographic formations, landscapes, and manmade features. Many people associate natural landforms and landscapes with scenic resources, such as woodlands, lakes, rivers, streams, mountains, habitat, and agricultural lands. Scenic resources can also include urban open spaces and the built environment. Examples of these would include urban parks, trails, and nature centers, archaeological and historical resources, and man-made structures like buildings and bridges with unique architectural features. Tall buildings may also provide excellent views of scenic resources beyond the urban core. Typically, jurisdictions identify designated scenic resources, or some similar classification system, to identify priority scenic resources. These designated scenic resources are the focus of this chapter.

In urban areas, roadway rights-of-way comprise 20 to 30 percent of the total land area. As a result, transportation systems have a major influence on human perception of the visual environment. As most vehicular movement occurs along transportation corridors, their placement largely determines what parts of the area will be seen. Even for people not using the transportation system at a particular time, or who never use certain modes of travel, transportation systems are usually a dominant element of the visual environment. Air quality and visibility affect view sheds and visual quality. In Tulare County, high pollutant emissions combined with poor natural ventilation in the air basin result in degraded visibility. Of particular note is photochemical smog and airborne particulates, finely divided solids or liquids, such as soot, dust, aerosols, and mists that absorb sunlight, producing haze and reducing visibility.

It is useful to think of scenic resources in terms of "typical views" seen throughout the County because scenic resources are rarely encountered in isolation. A typical view may include several types of scenic resources, including both natural and man-made elements. The typical views seen in Tulare County are outlined in the following paragraphs. It is important to distinguish between public and private views. Private views are views seen from privately owned land and are typically viewed by individual viewers, including views from private residences.

Table 4.1-1
Caltrans Scenic Highways Guidelines: Examples of Visual Intrusions along Scenic Corridors

Land Use Type	Minor Intrusion	Moderate Intrusion	Major Intrusion
Buildings: Residential, Commercial, Industrial Development	Widely dispersed buildings. Natural landscape dominates. Wide setbacks and buildings screened from roadway. Forms, exterior colors and materials are compatible with landscape. Buildings have cultural or historical significance.	Increased number of buildings, not well integrated into the landscape. Smaller setbacks and lack of roadway screening. Buildings do not dominate the landscape or obstruct scenic view.	Dense and continuous development. Highly reflective surfaces. Buildings poorly maintained. Visible blight. Development along ridgelines. Buildings dominate the landscape or obstruct scenic view.
Unsightly Land Uses: Dumps, Quarries, Concrete Plants, Tank Farms, Auto Dismantling	Screened from view so that most facility is not visible from the highway.	Not screened and visible but programmed/funded for removal and site restoration. Land use is visible but does not dominate the landscape or obstruct scenic view.	Not screened and visible by motorists. Will not be removed or modified. Land use dominates the landscape or obstructs scenic view.
Commercial Retail Development	-	Neat and well landscaped. Single story. Generally blends with surroundings. Development is visible but does not dominate the landscape or obstruct scenic view.	Not harmonious with surroundings. Poorly maintained or vacant. Blighted. Development dominates the landscape or obstructs scenic view.
Parking Lots	Screened from view so that most of the vehicles and pavement are not visible from the highway	Neat and well landscaped. Generally blend with surroundings. Pavement and/or vehicles visible but do not dominate the landscape or degrade scenic view.	Not screened or landscaped. Pavement and/or vehicles dominate the landscape or degrade scenic view.
Off-Site Advertising Structures	-	-	Billboards degrade or obstruct scenic view.
Noise Barriers	-	Noise barriers are well landscaped and complement the natural landscape. Noise barriers do not degrade or obstruct scenic views.	Noise barriers degrade or obstruct scenic view.
Power Lines and Communication Facilities	Not easily visible from road.	Visible, but do not dominate scenic view.	Towers, poles or lines dominate view. Scenic view is degraded.
Agriculture: Structures, Equipment, Crops	Generally blends in with scenic view. Is indicative of regional culture.	Not compatible with the natural landscape. Scale and appearance of structures and equipment visually competes with natural landscape.	Scale and appearance of structures and equipment are incompatible with and dominates natural landscape. Structures, equipment or crops degrade or obstruct scenic view.
Exotic Vegetation	Used as screening and landscaping. Generally is compatible with scenic view.	Competes with native vegetation for visual dominance.	Incompatible with and dominates natural landscape. Scenic view is degraded.
Clearcutting	-	Clearcutting or deforestation is evident, but is in the distant background.	Clearcutting or deforestation is evident. Scenic view is degraded.
Erosion	Minor soil erosion (i.e., rill erosion)	Rill erosion starting to form gullies.	Large slip outs and/or gullies with little or no vegetation. Scenic view is degraded.
Grading	Grading generally blends with adjacent landforms and topography.	Some changes, less engineered appearance and restoration is taking place.	Extensive cut and fill. Unnatural appearance, scarred hillsides or steep slopes with little or no vegetation. Canyons filled in. Scenic view is degraded.
Road Design	Blends in and complements scenic view. Roadway structures are suitable for location and compatible with landscape.	Large cut and fill slops are visible. Scale and appearance of roadways, structures, and appurtenances are incompatible with landscape.	-

Source: Caltrans. Appendix E of Scenic Highways Guidelines, October 2008.

Public views are experienced by the collective public. These include views of significant landscape features such as the Sierra Nevada Mountains, the foothills, and the valley floor, as seen from public viewing spaces, not privately owned properties. California Environmental Quality Act (CEQA) (Pub. Resources Code, § 21000 *et seq*.) case law has established that in general protection of public views is emphasized. For example, in *Association for Protection etc. Values v. City of Ukiah* (1991) 2 Cal. App. 4th 720 [3 Cal. Rptr.2d 488] the court determined that:

> *we must differentiate between adverse impacts upon particular persons and adverse impacts upon the environment of persons in general. As recognized by the court in Topanga Beach Renters Assn. v. Department of General Services (1976) 58 Cal.App.3d 188 [129 Cal.Rptr. 739]: '[A]ll government activity has some direct or indirect adverse effect on some persons. The issue is not whether [the project] will adversely affect particular persons but whether [the project] will adversely affect the environment of persons in general.*

Therefore, for this analysis, only public views are considered in analyzing the visual impacts of implementing the proposed RTP.

4.1.1.1 Typical Views and Visual Resources

The extraordinary range of visual features in the region is afforded by the mixture of climate, topography, and flora and fauna found in the natural environment, and the diversity of style, composition, and distribution of the built environment. Aesthetically significant features occur in a diverse array of environments within the region, ranging in character from urban centers to rural agricultural lands to natural woodlands.

The loss of natural aesthetic features, reduction of vistas, or the introduction of contrasting urban features may diminish the value of natural resources in the region. Natural features include land and open spaces such as park and open space areas, mountain areas, and natural water sources. Elements of the visual environment which have been constructed to resemble natural features, such as man-made lakes, are included as natural features.

Views of the various mountain ranges from locations in the region are considered valuable visual resources. Other natural features that may contain visual significance include the numerous rivers, streams, creeks, lakes, and reservoirs located within the region. Features of the built environment that may have visual significance include individual or groups of structures that are distinctive due to their aesthetic, historical, social, or cultural significance or characteristics. Examples of the visually significant built environment may include bridges or overpasses, architecturally appealing buildings or groups of buildings, landscaped freeways, or a location where an historic event occurred.

Tulare County is located in a predominately agricultural region of central California. The terrain in the County varies, with flat agricultural areas in the western portion of the County that gradually transform into the foothills and the Sierra Nevada mountain range to the east. Many communities are small and rural, surrounded by agricultural uses such as row crops, orchards, and dairies. From several locations on major roads and highways throughout the County, electric towers and telephone poles are noticeable. Mature trees, development, utility structures, and other vertical forms are highly visible in the Valley-portion of the region because of the flat terrain; however, where such vertical elements are absent, views are expansive. The prevailing colors in the County are greens and browns; in the Valley, this is primarily associated with agricultural land use, but greens and browns also predominate in the shrub lands and forests in the higher elevations. Most new structures are small, usually one story in height, through occasionally two-story structures can be seen. Exceptions can be found in the downtown commercial areas of urban locations and in industrial agricultural complexes. The aesthetic quality of the County has been affected by various forms of transportation for some time.

Agricultural Land and Pasture

Agricultural lands are a dominant visual landscape in the region, with 1,745,516 acres of harvestable land in 2016.[4] Agriculture is an important industry for the region, but unlike most industrial uses, agricultural lands contribute to the scenic value of the region and contrast with urban landscapes. Agriculture provides an open space visual resource, characterized by no form, limited line (e.g., row crops), color, or textural features. The main agricultural uses in the region include row crops, field crops, orchards, and nursery crops. Adding additional character to the visual landscape are agricultural buildings, including barns, processing facilities, storage areas, and farm housing.

Mountain Views

The mountains of the Sierra Nevada are prominent in the views within the eastern portions of the County. These ranges reach elevations up to approximately 14,505 feet at the highest point, Mt. Whitney, located on the eastern edge of Tulare County. Due to the County's extensive open space and development patterns, some areas of the County's eastern valley offer panoramic views of the surrounding mountain ranges. On days of very good air quality, areas of the western valley also offer panoramic scenic views of the mountain ranges.

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4 Tulare County. Tulare County Crop and Livestock Report 2016. September 2017.

Open Space, Habitat, and Protected Lands

Tulare County is home to substantial open space areas, including national and state parks, and habitat conservation areas. National parks in the County include Sequoia National Park and portions of Sequoia National Forest, Sequoia National Monument, Inyo National Forest, and Kings Canyon National Park. State parks include Colonel Allensworth State Historic Park and Mountain Home Demonstration State Forest. In addition, the Golden Trout Wilderness area, and portions of the Domeland Wilderness and South Sierra Wilderness areas, are public lands within the County's boundaries. Public views of and within these areas vary according to the type of open space, and may include open grasslands, rolling hills, forested areas, and cultural sites.

Residential and Commercial Development

Most residential and commercial development within the County is concentrated within the cities of Visalia, Tulare, and Porterville. Other population centers include Dinuba, Lindsay, Farmersville, Exeter and smaller cities such as Woodlake. Residential and commercial development in these cities is a mix of older and newer construction and is generally not more than two or three stories tall.

Transportation Network

Many public views of Tulare County are from the State freeway routes, and the freeways themselves are also a visual component of the landscape. SR-43, SR-99, and SR-65 are three main north/south routes. SR-99 is a major transportation corridor within California, including substantial use by freight trucks. Other north-south highways include SR-63 and SR-245. East/west regional corridors include SR-198, SR-137, and SR-190. Other east/west routes include SR-201 and SR-216.

Streets in the plan area range from multi-lane, signalized roads to narrow tree-lined streets in residential neighborhoods. Roadways include minor arterials, collector streets that connect residential uses to major street systems, local streets that serve the interior of a neighborhood, and alleys that provide delivery access to businesses located along the transportation system. Many streets have sidewalks and bicycle facilities included in the transportation right of way.

Rural areas tend to have narrower roads that cater to agricultural and goods movement traffic. Some roads in town centers or residential areas have sidewalks and bicycle facilities, though widened shoulders are the more common pedestrian and bicyclist treatments. In more remote areas, the transportation system contains gravel and dirt roads.

As discussed in more detail below, California's Scenic Highway Program was created by the Legislature in 1963. Its purpose is to preserve and protect scenic highway corridors from change that would diminish the aesthetic value of lands adjacent to highways. The program is administered by Caltrans and regulated at the local level. The program consists of laws, incentives, and guidelines intended to protect the scenic, historic, and recreational resources within designated scenic highway corridors. Caltrans defines a scenic highway corridor as the area of land generally adjacent to and visible from the highway. It is usually limited by topography and/or jurisdictional boundaries.

While there are no designated State Scenic Highways in Tulare County, according to the Caltrans California Scenic Highway Mapping System[5], two highways are designated as eligible scenic highways, including SR 198 (from SR 99 to the Sequoia National Park Entrance) and SR 190 (from SR 65 to Ponderosa). SR 190 follows the Tule River and passes by Lake Success, while SR 198 circumvents Lake Kaweah and the Kaweah River. Both eligible scenic highways travel through agricultural areas of the valley floor to the foothills and the Sierra Nevada Range.

Figure 4.1-1, Tulare County Highways Eligible for Caltrans California Scenic Highway Designation depicts the location of these eligible highways. These designations represent recognition of the high scenic and visual qualities of these corridors. Specific design guidelines are required by local regulation for all designated highways, and the state-designated corridors must be reviewed when improvements are proposed to determine if the highway will remain eligible for designation as a scenic corridor.

In addition to State designation, there are 16 County-designated scenic routes[6]:

- Road 80 from Dinuba to Visalia
- El Monte Way to the west and east of Dinuba
- Road 168 from El Monte Way to State Route 245
- State Route 201 to the east of Road 80
- State Route 63 from State Route 201 to Visalia
- State Route 245 from Woodlake to State Route 180
- State Route 216 from near Ivanhoe to State Route 198
- Avenue 280 from the Kings County line to Visalia
- Avenue 256 from south of Visalia to Road 216

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5 California Department of Transportation (Caltrans). *California Scenic Highway Mapping System*. http://www.dot.ca.gov/hq/LandArch/16_livability/scenic_highways/. 2011.

6 Tulare County. Tulare County General Plan 2030 Update. August 2010.

SOURCE: California Department of Transportation, 2017

FIGURE **4.1-1**

IMPACT SCIENCES

Tulare County Highways Eligible for Caltrans California Scenic Highway Designation

- Dry Creek Road from State Route 245 to State Route 198;
- Rocky Hill Drive east of Exeter;
- Avenue 196 north of Porterville;
- Avenue 128 south of Porterville;
- Old Stage Road from Porterville to the south;
- Road 192 from State Route 190 to Avenue 56; and
- Avenue 56 from State Route 99 to Old Stage Road.

Rail lines also contribute to the region's urban form and transportation network. The region has two heavy rail systems, the Union Pacific (PC) and Burlington Northern and Santa Fe (BNSF) railroad. The primary function of the heavy gauge rail system is to transport freight cargo, but there is also some regional passenger rail via Amtrak. Given the focus on cargo transport, the heavy rail lines tend to be located adjacent to industrial and warehouse type uses, whose design character is utilitarian and scaled for train and truck traffic and large-scale storage and manufacturing operations; but heavy rail lines are also found in urbanized core areas in the region. There is currently no light rail system in Tulare County.

Although at a much smaller scale, air traffic also contributes to aesthetic character. Small planes, metal airplane hangars, and surface parking lots are visible from roadways surrounding airports in Tulare County. A majority of airport buildings, including the hangers, are warehouse-like buildings with metal siding. The airstrips are paved and there is artificial lighting throughout the night providing sky glow over the airports.

Waterways

Tulare County contains four principal rivers: Kings River, Kaweah River, Tule River, and White River/Deer Creek. The local streams in the county flow from the Sierra Nevada Mountains westwards towards the San Joaquin Valley. The rivers provide recreational uses and scenic views.

Light and Glare

General sources of light can be categorized as follows:

- Man-made interior lighting that can be seen from the exterior of a building
- Man-made exterior lighting such as lampposts, signs, or headlights

- Naturally occurring light such as sunlight or moonlight
- Indirect light that is reflected from a direct source of light

Existing sources of light and glare within the County are primarily focused in the cities, communities, hamlets, and other urban development boundary areas. Most sources of light and glare occur within and around these urbanized areas. A majority of the County is used for agricultural purposes (with some scattered rural residential uses) and therefore currently contains limited sources of light and glare outside of more urbanized community areas.[7]

Examples of direct light associated with transportation systems can include highway signs, car headlights, and street/highway lights, as well as illumination from the interior of transit facilities. An example of indirect light can include the reflection of sunlight from a new lightly colored road surface or highly reflective noise wall. Development generally has lighting associated with residential and commercial development including security lighting, landscape and building lighting as well as signage and other forms of lighting typical of urban areas.

4.1.2 REGULATORY FRAMEWORK

4.1.2.1 Federal Regulations

Federal Highway Administration National Scenic Byways Program.

The Federal Highway Administration (FHWA) National Scenic Byways Program designates selected highways as "All American Road" (a roadway that is a destination unto itself) or "National Scenic Byway" (a roadway that possesses outstanding qualities that exemplify regional characteristics). There are no designated All American Roads or National Scenic Highways in Tulare County.[8]

United States Forest Service National Scenic Byways Program.

The United States Forest Service (USFS) also has a National Scenic Byways Program, independent from the BLM program, to indicate roadways of scenic importance that pass through national forests. There are no National Scenic Byways in Tulare County.[9]

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7 Tulare County. Tulare County General Plan Recirculated Draft EIR (p 3.1-16). Februar,y 2010.

8 US Department of Transportation, Federal Highway Administration, America's Byways, http://www.fhwa.dot.gov/byways/states/CA, March 2018.

9 United States Forest Service, National Forest Scenic Byways, https://www.fs.fed.us/recreation/programs/tourism/TourUS.pdf.

National Environmental Policy Act

The National Environmental Policy Act (NEPA) is implemented by regulations included in the Code of Federal Regulations (40 CFR § 1500 *et seq*.), which require careful consideration of the harmful effects of federal actions or plans, including projects that receive federal funds, if they may have a significant adverse effect on the environment. NEPA mandates that all federal agencies carry out their regulations, policies, and programs in accordance with NEPA's policies of environmental protection. NEPA encourages the protection of all aspects of the environment and requires federal agencies to utilize a systematic, interdisciplinary approach to agency decision-making that will ensure the integrated use of natural sciences such as geology. NEPA addresses a wide range of environmental issues including the documentation of, and evaluation of impacts to aesthetic resources as well as impacts to scenic resources and conflicts with state, regional, or local plans and policies. While NEPA compliance is not required for the 2018 RTP/SCS, NEPA compliance will be required for transportation improvement projects that will be financed using federal funds. Some development projects (such as low-income housing) also use federal funds and are subject to NEPA.

4.1.2.2 State

California Department of Transportation (Caltrans) Scenic Highway Program

The California Scenic Highway Program was created by the state legislature in 1963 to preserve and protect scenic highway corridors from change that would reduce the aesthetic value of lands adjacent to highways. The State Scenic Highway System includes a list of highways that are either eligible for designation as scenic highways or have been so designated. A highway may be designated scenic depending upon how much of the natural landscape can be seen by travelers, the scenic quality of the landscape, and the extent to which development intrudes upon the traveler's enjoyment of the view.

State goals for scenic highways include the following:

1. Preserve and enhance the unique visual, biological, and ecological resources of the Scenic Highway Corridor;

2. Prevent and eliminate (when reasonably possible) conditions that detract from or compromise the quality of the aesthetic resources of the Scenic Highway Corridor;

3. Encourage the development and maintenance of park and recreational facilities that contribute to the aesthetic quality of the Scenic Highway Corridor;

4. Encourage preservation of historical landmarks adjacent to the Scenic Highway Corridor; and

5. Encourage community civic groups to create programs that increase community interest in the visual assets of the Scenic Highway Corridor and facilitate the implementation of such programs

To be included in the program, the highways proposed for designation must meet Caltrans' eligibility requirements and have visual merit. After it is determined that a proposed highway satisfies the qualifications for Scenic Highway designation, the local jurisdiction, with support of its citizens, must adopt a program to protect the scenic corridor. The five legislatively required standards for scenic highways are:

1. Regulation of land use and density (i.e., density classifications and types of allowable land uses);
2. Detailed land and site planning (i.e., permit or design review authority and regulations for the review of proposed developments);
3. Prohibition of off-site outdoor advertising and control of on-site outdoor advertising;
4. Careful attention to and control of earthmoving and landscaping (i.e., grading ordinances, grading permit requirements, design review authority, landscaping and vegetation requirement); and
5. The design and appearance of structures and equipment (i.e., placement of utility structures, microwave receptors, etc.).

The status of a state scenic highway changes from eligible to officially-designated when the local jurisdiction adopts a scenic corridor protection program, applies to Caltrans for scenic highway approval, and receives notification that the highway has been designated as a scenic highway. Portions of State Route (SR)-190 and 198 are eligible state scenic highways in the County but have not officially been designated as of April 2018.

California Environmental Quality Act

Similar to NEPA, CEQA affords protection for the environment, including aesthetic resources. The *State CEQA Guidelines* provide four criteria that may be used to evaluate the significance of visual quality impacts: negative effects on a scenic vista, damage to scenic resources within a state scenic highway, degradation of the visual character or quality of a site and its surroundings, and creation of a new source of substantial light or glare affecting views.

4.1.2.3 Local

Most local planning guidelines to preserve and enhance visual quality and aesthetic resources of urban and natural areas are established in a jurisdiction's General Plan. The value attributed to a visual resource generally is based on the characteristics and distinctiveness of the resource and the number of persons who view it. Vistas of undisturbed natural areas, unique or unusual features forming an important or

dominant portion of a view shed, and distant vistas offering relief from less attractive nearby features are often considered to be scenic resources. In some instances, a case-by-case determination of scenic value may be needed, but often there is agreement within the relevant community about which features are valued as scenic resources.

In addition to federal and state designations, counties and cities have their own scenic highway designations, which are intended to preserve and enhance existing scenic resources. Criteria for designation are commonly included in the conservation/open space element of the city or County General Plan.

Tulare County General Plan

As noted above, the Tulare County General Plan designates 16 County scenic roads.

The Tulare County General Plan includes visual goals in an effort to preserve the visual characteristics of the County. They are as follows:[10]

- SL-1: To protect and feature the beauty of Tulare County's views of working and natural landscapes;
- SL-2: To protect the scenic views for travelers along the County's roads and highways;
- SL-3: To provide distinctive communities, rural development patterns and character that is compatible with the best features of Tulare County's traditional community centers and agricultural landscapes; and
- SL-4: To design infrastructure to visually enhance the built environment while minimizing visual impact on rural and natural places.

The Scenic Landscapes Element of the General Plan also includes policies addressing community design, to ensure that communities and natural landscapes are enhanced, preserved, and protected. Relevant goals and policies to the proposed 2018 RTP/SCS EIR include the following:

- **SL-3.1 Community Centers and Neighborhoods:** The County shall support investments in unincorporated communities and hamlets to improve the image, quality of urban infrastructure, amenities, and visual character by:

    1. Encouraging restoration of existing historic buildings and developing new buildings that reflect the local culture and climate;

    2. Creating or enhancing overall community design frameworks with a hierarchy of connected block and street patterns, open spaces, town centers, neighborhoods, and civic facilities;

10 Tulare County. *Chapter 7: Scenic Landscapes, Tulare County General Plan 2030 Update*. August 2012.

3. Reducing the need for sound-walls and gated neighborhoods by having residential and non-residential uses interface along streets and open spaces (not adjoining property lines) and locating residential uses on local-serving streets;

4. Planning residential development as interconnected neighborhoods with definable social and physical centers that incorporate parks, schools, and commercial services;

5. Enhancing the comfort and scenic experience of transit riders, cyclists, and pedestrians; and

6. Developing open spaces, streets, and pedestrian facilities that include landscaping and streetscaping that improve the image of the community and make it a more comfortable pedestrian environment.

- **SL-3.2 Urban Expansion Edges**: The County shall design and plan the edges and interface of communities with working and natural landscapes to protect their scenic qualities by:

    1. Maintaining urban separators between cities and communities;

    2. Encouraging cities to master plan mixed-density neighborhoods at their edges, locating compatible lower density uses adjacent to working and natural landscapes; and

    3. Protecting important natural, cultural, and scenic resources located within areas that may be urbanized in the future.

- **SL-3.4 Planned Communities:** If planned communities are allowed, the County shall require that they are designed to minimize visual impact on scenic working and natural landscapes by:

    1. Avoiding development along ridgelines and other highly visible locations;

    2. Siting development in a manner that reduces the visibility of new development;

    3. Mitigating light pollution on night sky conditions;

    4. Utilizing architectural and site planning concepts that appropriately reflect local climate and site conditions; and

    5. Integrating cultural, architectural, and historic resources into their plans.

- **ERM-5.8 Watercourse Development:** The County, in approving recreational facilities along major watercourses, shall require a buffer of at least 100 feet from the high-water line edge/bank and screening vegetation as necessary to address land use compatibility issues. The establishment of a buffer may not be required when mitigated or may not apply to industrial uses that do not impact adjoining uses identified herein.

4.1.3 ENVIRONMENTAL IMPACTS

4.1.3.1 Thresholds of Significance

For the purposes of this PEIR, TCAG has determined that implementation of the proposed 2018 RTP/SCS would result in significant adverse impacts to visual resources, if any of the following could occur (these thresholds are based on Appendix G and clarified for how they apply to the RTP/SCS):

- Have a substantial adverse effect on a scenic vista for example by impairing views of scenic resources (i.e., mountains, ocean, rivers, or significant man-made structures) as seen from existing transportation facilities and other key public vantage points in Tulare County;
- Substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within a state-designated or eligible scenic highway (for example, by altering the appearance of designated scenic resources along or near a state-designated or eligible, scenic highway);
- Substantially degrade the existing visual character or quality of the site and its surroundings (for example, by creating significant contrasts, with the scale, form, line, color, and/or overall visual character of the existing landscape setting); and
- Create a new source of substantial light or glare, which would adversely affect day or nighttime views and/or causes a public hazard.

4.1.3.2 Methodology

The analysis assesses the impacts to visual resources that could result from implementation of the proposed RTP. For each impact, implementation of the proposed RTP is analyzed at the regional level.

Impacts to visual resources are assessed in terms of both land use and transportation changes that could occur under the 2018 RTP/SCS. By 2042, implementation of the proposed 2018 RTP/SCS would result in a land use pattern and transportation network that is different from existing conditions. Unless otherwise stated, "existing conditions" refers to conditions in the year 2017 (the year the Notice of Preparation was published).

The RTP/SCS plan area consists of transportation routes, including highways, rail alignments, bicycle trails, state routes, roads, and Caltrans right-of-way in Tulare County. The aesthetic appearance of Tulare County is a function of both the natural landscape and man-made elements that create an urban and rural character and design. Because transportation facilities can have a major influence on human perception of the visual environment, this section addresses the general aesthetic features of the region and assesses the impacts from region-wide construction of at- and above-grade transportation facilities. Because the SCS component of the RTP/SCS would influence development in Tulare County, aesthetics impacts of land

use changes associated with the SCS are also evaluated. Patterns of development are assessed with respect to aesthetics.

Determination of Significance

The methodology for determining the significance of visual impacts compares the existing (2017) conditions to the conditions projected to occur in 2042 with the adoption of the RTP/SCS, consistent with *CEQA Guidelines* Section 15126.2(a). Conditions projected to occur in 2042 are generally assessed based on the conceptual level of detail available for transportation projects and development patterns. Because details of individual transportation projects and development projects are not known, the assessment is necessarily programmatic in detail. As project level details (including for planning projects, individual transportation projects and individual development projects) become available, they would be assessed in project-specific environmental documents.

The known visual resources located within the region were evaluated using the criteria set forth by the California Department of Transportation, the BLM, FHWA, USFS, and the *State CEQA Guidelines*. The analysis addresses visual resources of local significance.

Generally, with regard to aesthetic impacts, the greater the change from existing conditions, the more noticeable the change to the aesthetic environment. The construction of a new roadway generally has a greater impact on scenic resources than the widening of an existing one. Road widening, however, can have significant local impacts especially when requiring the removal of trees and other important landscape buffers, or when construction of noise barriers or other visual impediments is necessary.

The development of new transportation facilities may affect visual resources, either through direct effects to buildings or through indirect effects to the area surrounding a resource if it creates a visually incompatible structure or blocks the visual resource completely. The region contains visual and scenic corridors; therefore, visual resources impacts could be significant. Improvements within existing rights-of-way are less likely to affect existing visual resources; however, new highway segments near visual resources could result in a significant impact. Also, reducing buffer zones between transportation corridors and visual resources through lane widenings and/or construction of noise walls or other features could cause significant impacts.

The following factors were considered in assessing the significance of impacts from the proposed Plan on scenic resources:

- **Scale**: The size, proportion, and "fit" of transportation improvements and development as compared to the surrounding area.

- **Degree of Visibility**: The extent to which transportation improvements and/or future development can be seen. This depends to a large extent on route alignment and configuration (i.e., elevated, at grade, depressed, or underground) of the transportation improvement and location, height/bulk, construction materials (reflectivity, color) of development. Generally, elevated grade transportation investments have a more substantial impact on aesthetics and views, while the taller a development generally the greater the potential for impact.

Implementation of the RTP/SCS would affect aesthetics and views. Significant impacts could include the obstruction of scenic views and resources, altering areas along routes eligible as state designated scenic highways and vista points, creating significant contrasts with the scale, form, line, color and overall visual character of the existing landscape, and adding visual urban elements to rural areas.

Both short-term construction related impacts and long-term or permanent impacts would occur as a result of implementation of the RTP/SCS. Below are descriptions of the types of direct impacts foreseeable from new transportation projects proposed in the RTP/SCS as well as impacts from increased population and development patterns under the 2018 RTP/SCS.

Generally, proposed RTP/SCS transportation projects are of the following two types:

- **New Systems:** new facilities, goods movement roadway facilities, rail corridors, connectors, interchanges, and high speed train.
- **Modifications to Existing Systems:** widening bridges, high-occupancy vehicle (HOV), grade crossings, interchange improvements, and maintenance operations.

Proposed highway and arterial projects proposed in the RTP/SCS primarily consist of:

- Maintenance and rehabilitation of existing and future facilities;
- Continued support of Regional Ride Share and Vanpool program;
- Operation and strategic expansion of public transit including: Bus Rapid Transit Corridor determination and funding for ROW preservation, Expansion of Community College Transit Program, Continued transit expansion with Measure R;
- Strategic road and highway expansion and operational improvements that focus on alleviating major bottlenecks and congestion points;
- Bicycle and pedestrian retrofits and new facilities; and
- Programs and planning (e.g. programs and transportation system management strategies, including technology and demand management programs), which allow for greater optimization of existing transportation infrastructure.

Many projects and/or programs proposed in the 2018 RTP/SCS would not involve construction activities. However, critical gaps remain in the region's transportation system and the Plan includes capacity increasing projects that would close these gaps. Refer to **Section 3.0, Project Description**, for highlights some of these projects.

Impacts to scenic resources resulting from these proposed projects would depend on several factors such as the type of project proposed for the given area, scenic resources in the given area, and duration of the proposed construction activities.

In general, scenic resources would be impacted by RTP/SCS projects proposing new systems (i.e., new facilities, goods movement roadway facilities, rail corridors, interchanges, and overcrossings,). Construction and operation of projects proposed within the RTP/SCS could affect scenic resources located in the vicinities of these new system projects. Modification projects generally would result in short-term construction impacts to scenic resources.

The following discussion presents a regional evaluation of impacts of the RTP/SCS on aesthetic resources. However, it should be noted that the potential for project-specific significant impacts and appropriate mitigation measures would be identified and assessed at the project level as appropriate.

4.1.3.3 Impacts and Mitigation Measures

Impact AES-1 **Have a substantial adverse effect on a scenic vista for example by impairing views of scenic resources (i.e., mountains, ocean, rivers, or significant man-made structures) as seen from existing transportation facilities and other key public vantage points in Tulare County.**

Impact AES-2 **Substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within a state scenic or eligible highway for example by altering the appearance of designated scenic resources along or near a state-designated or eligible scenic highway or vista point.**

The visual character of the County is influenced by the quality of its roadways, boulevards, multi-use paths/trails, view corridors, and the land uses adjoining them (i.e., open space, neighborhoods, etc.). Visual quality is often affected by a variety of factors including General Plan land use designations and policies, specific plan requirements, zoning regulations and enforcement, and private property maintenance. Specific development and transportation projects resulting from implementation of the 2018 RTP/SCS would result in temporary changes in local visual conditions during construction of specific projects in the County. However, given the relatively short-term nature of these construction-

related activities, construction-related visual impacts are considered less-than significant. Evaluation of construction impacts focuses on the short-term visual impacts resulting from project construction, the presence of equipment and material storage, as well as the excavation of the site and earthmoving in the existing landscape. In a visual sense, construction impacts can be obtrusive and out of character in particular in rural landscapes. The visual impact is created by the unsightliness of mobile construction equipment and unfinished structures without the mitigation of final designs, colors, and landscaping.

During construction, motorists may have largely unobstructed views of construction activity. Views could include exposed dirt, construction equipment, and materials laydown areas. These activities would detract from scenic areas. While this impact could be adverse, it would be short-term, and is thus determined to be less than significant.

A diversity of landscapes comprise Tulare County, scenic resources in the County include existing open space areas (including views of the Sierra Nevada Mountains), watercourses, and historic settlement areas.

Improvements to existing transportation infrastructure, resulting from the implementation of the proposed 2018 RTP/SCS, such as roadway widening, signal installation, and road rehabilitation, could result in modification of the foreground of the various scenic viewsheds throughout the County. There is also potential for the RTP/SCS transportation projects to affect scenic resources or degrade the visual character of the area. This would include RTP transportation projects that are located adjacent to a broad viewshed such as the mountain ranges, valleys, ridgelines, or water bodies along roadways, or adjacent to the focal point of the forefront of the broad viewshed, such as visually important trees, rocks, or historic buildings.

While the projected regional increase in the developed area would be small relative to the overall size of the region, and would occur through the RTP/SCS horizon year of 2042, both changes to land use patterns, and individual transportation improvements resulting from implementation of the proposed 2018 RTP/SCS could cause significant impacts to scenic vistas. Both changes to land use patterns and transportation improvements could change the view of the middle ground or background elements of broad viewsheds through the conversion of open space uses to transportation use and/or urban use, or through the removal of visually important resources (such as trees, rocks, or historic buildings). RTP/SCS transportation projects could include features, such as sound walls, substantial grading, or structures (for example bridges) that could disrupt views.

Changes in land use patterns would both (1) introduce a variety of urban uses in to existing open space land and (2) increase density in existing urban areas. Changes in land use patterns and individual

RTP/SCS transportation projects could cause intermittent interruption in views of scenic vistas to users of the highways, roadways, and rail system. Such changes to views could result in significant impacts. In some cases, impacts to visual resources can be reduced to less than significant levels by avoiding certain high-profile improvements and/or by minimizing alterations, and/or designing new structures so that they do not impede the scenic landscape and/or view.

A review of the California Department of Transportations (Caltrans) Map of Designated Scenic Routes indicates that there are two highways designated as eligible scenic highways including SR 198 (from SR 99 to the Sequoia National Park Entrance,) and SR 190 (from SR 65 to Ponderosa). Portions of SR-198 and SR-190 are eligible state scenic highways in the County but have not officially been designated as state scenic highways as of April 2018. Eligible state-designated corridors are not protected under the Corridor Protection Programs that safeguard scenic corridors from encroaching development. Development near eligible state-designated scenic highway corridors could affect panoramic views or views of significant landscape features or landforms.

Transportation improvements from implementation of the 2018 RTP/SCS would be located near eligible state scenic highways and County scenic routes, including SR 99 and SR 198. Transportation improvements would primarily result in modification to existing transportation facilities within existing roadway rights-of-way. Many of the proposed projects are at-grade with the surrounding environment and are not likely to result in significant obstructions of views of surrounding agricultural areas. Proposed transportation improvements on scenic roadways would result in moderate intrusions on the aesthetics of these roadways such as removal of existing vegetation, lining scenic roadways and altering the foreground of scenic views. Furthermore, projects on or near scenic roadways also could result in the introduction of street lighting out of scale with the area. Therefore, the impact on scenic resources along or near a state-designated or eligible, or County-designated scenic highway would be significant.

The Tulare County General Plan as well as General Plans of other jurisdictions in Tulare County includes numerous policies designed to enhance the visual quality of the County and its surroundings. These policies have the common goal of improving the visual quality of the County by maintaining or enhancing existing scenic resource, developing guidelines to improve future development projects, or creating capital improvements which improve community aesthetics. The preservation of urban landscapes can also contribute to the scenic quality of a specific location. Preservation of the existing built environment is also a key goal of the Tulare County General Plan, with both the Land Use and Scenic Landscapes Elements containing a variety of policies designed to preserve the existing historic character of the County's communities, hamlets, and rural areas. Policies are included that encourage the development of new structures and infrastructure that build on the natural landscapes and features of the existing setting.

The Scenic Landscapes Element also includes a number of policies designed to protect scenic views for travelers along County roadways and provide guidance on the development of infrastructure that minimizes impacts to existing scenic landscapes. However, new development resulting from population growth as part of the 2018 RTP/SCS would still result in some permanent changes to existing scenic views, in particular those areas along roadways associated with development in RTP. While, some new development (i.e., new residential, commercial, or infrastructure-related, etc.) resulting from population growth associated with the 2018 RTP/SCS would result in changes to existing views within all portions of the County's planning areas (i.e., communities, hamlets, or rural areas), a majority of these changes would be focused in the unincorporated communities of the Rural Valley Lands Plan geographical area where most existing unincorporated communities are located and where growth has traditionally occurred in the County. As a portion of this new development could be proposed on land currently used for a variety of rural residential, agricultural, and open space uses, new development would alter the existing open space views of surrounding visible areas and contrast with the surrounding open space/agricultural environment at the edge of these new development areas.

The above-mentioned policies would reduce the 2018 RTP/SCS visual impacts. However, based on the above analysis, impacts of the Plan's transportation projects and land use pattern would still be significant because they would have substantial adverse effects on scenic vistas, and substantially damage scenic resources along or near state-designated or eligible, scenic highways or vista points.

Mitigation measures at the project level would reduce both impacts; see **Mitigation Measure MM-AES-1(a)** that would reduce but not necessarily eliminate significant adverse impacts.

Level of Significance Before Mitigation

Significant for both **Impact AES-1** and **Impact AES-2**.

Mitigation Measures

MM-AES-1(a): Consistent with the provisions of Section 15091 of the *State CEQA Guidelines*, TCAG has identified mitigation measures capable of avoiding or reducing the significant effects on scenic vistas, or state-designated or eligible, and County-designated, scenic highways or vista points, that are in the jurisdiction and responsibility of local agencies (land use projects) and implementing agencies (transportation projects). Where the Lead Agency has identified that a project has the potential for significant effects, the Lead Agency can and should consider mitigation measures to minimize impacts on scenic vistas, scenic highways, and vista points, including ensuring compliance with visual resource goals

and policies within county and city general plans, as applicable and feasible. Such measures include, but are not limited to, the following:

- Use a palette of colors, textures, building materials that are graffiti-resistant, and/or plant materials that complement the surrounding landscape and development;
- Use contour grading to better match surrounding terrain. Contour edges of major cut-and-fill to provide a more natural looking finished profile;
- Use alternating facades to "break up" large facades and provide visual interest;
- Design new corridor landscaping to respect existing natural and man-made features and to complement the dominant landscaping of the surrounding areas;
- Replace and renew landscaping along corridors with road widenings, interchange projects, and related improvements;
- Retain or replace trees bordering highways, so that clear-cutting is not evident;
- Provide new corridor landscaping that respects and provides appropriate transition to existing natural and man-made features, and is complementary to the dominant landscaping or native habitats of surrounding areas; and
- Implement design guidelines, local policies, and programs aimed at protecting views of scenic corridors and avoiding visual intrusions in design of projects to minimize contrasts in scale and massing between the project and surrounding natural forms and developments. Avoid, if possible, large cuts and fills when the visual environment (natural or urban) would be substantially disrupted. Site or design of projects should minimize their intrusion into important viewsheds and use contour grading to better match surrounding terrain.

Level of Significance After Mitigation

Because this PEIR evaluates impacts at the programmatic level, all project circumstances are not foreseeable and these mitigation measures may not be feasible or effective for some projects. Therefore, **Impact AES-1** and **Impact AES-2** remain significant and unavoidable after mitigation. No additional feasible mitigation measures are available to reduce significant and unavoidable impacts beyond those identified in this PEIR.

Impact AES-3 **Substantially degrade the existing visual character or quality of the site and its surroundings for example by creating significant contrasts, with the scale, form, line, color, and/or overall visual character of the existing landscape setting.**

The implementation of the proposed 2018 RTP/SCS would result in (1) new and improved transportation infrastructure and (2) land use changes, including more compact development patterns in urban areas. Both the new transportation infrastructure and the densification of urban uses could result in changes to the visual character of the region.

The 2018 RTP/SCS promotes infill development and increased density, especially close to transit corridors. Infill development is beneficial at the regional scale, as it occurs in areas already designated for and receiving growth and discourages growth in undeveloped and/or agricultural and rural areas. Infill development, in general does not significantly change the existing visual character or quality at the regional level, but rather adds to it while preserving the undeveloped character and quality in the agricultural and rural areas.

Development in more rural areas in the region could introduce new views to areas that are currently undeveloped. Depending on the design and siting of new transportation infrastructure and new development, these new views could be seen as a degradation of the visual character or quality of the region.

In terms of visual character and quality infill development in TPAs would not substantially change the visual character or quality in urban areas. The TPAs already contain mostly urban uses and are relatively compact. The regional addition of 37,435 housing units and 43,921 jobs through 2042 would increase the density within urban areas as a result of infill development and densification.

Most of the road and highway investment would occur in areas where transportation infrastructure is already a dominant feature of the landscape. In less developed areas of the region, adding new transportation infrastructure could add an element of urban character to previously undeveloped lands. Depending on the design and siting of transportation projects, this could be considered a degradation of the visual character or quality of an area. As described above, both the County of Tulare and the major cities in the County have policies in place to protect and enhance the visual character of the region. However, even with implementation of the policies and measures listed above, new development along the periphery of the County's existing communities would substantially degrade the existing visual character or quality of the site and its surroundings through the introduction of developed uses within areas currently used for open space/agricultural activities. As a result, the impact to visual character from implementation of the 2018 RTP/SCS are considered significant for **Impact AES-3**. Mitigation measures at the project level would reduce this impact (see **Mitigation Measure MM-AES-1(a)** above).

Level of Significance Before Mitigation

Significant.

Mitigation Measures

Mitigation measure **MM AES-1(a)**.

Level of Significance After Mitigation

Because this PEIR evaluates impacts at the programmatic level, all project circumstances are not foreseeable and these mitigation measures may not be feasible or effective for some projects. Therefore, even with implementation of **Mitigation Measure MM-AES-1(a)**, impacts would remain significant and unavoidable. No additional feasible mitigation measures are available to reduce significant and unavoidable impacts beyond those identified in this PEIR.

Impact AES-4 **Create a new source of substantial light or glare, which could affect day or nighttime views and/or cause a public hazard.**

Existing sources of light and glare within the County are primarily focused in the cities, hamlets, and other urban development boundary areas. Most new sources of light and glare (resulting from build-out of the proposed project) would occur within and around urbanized areas. A majority of the County is used for agricultural purposes (with some scattered rural residential uses) and therefore currently contains limited sources of light and glare.

In general, new and improved transportation projects result in increased lighting as a result of security lighting, landscape and structure lighting and lights on vehicles.

Implementation of the proposed 2018 RTP/SCS would result in higher and more intense levels of development resulting in additional sources of glare and light to the region, potentially resulting in a significant impact. In areas of the region that are already built out, such increases would not cause a public hazard or substantially affect views because existing sources of glare and light are already a dominant feature of the urban landscape. Within these areas, the marginal increases in glare, light or shadow, from new infill development would be less than significant.

Because the proposed 2018 RTP/SCS would result in development of approximately 8,884 acres of currently undeveloped areas, implementation of the proposed 2018 RTP/SCS would result in development beyond the County's existing urban footprint. In less developed areas of the region, where existing sources of glare, light, and shadow are not as prevalent, new development could create new sources of glare, light, and shadow and significantly impact visual character by increasing urban glow and interfering with star gazing. However, new sources of light and glare would not likely create a public

hazard because people are generally accustomed to light sources from transportation projects and urban uses, and although such lights can startle drivers, it is unlikely that they would create a hazard.

Improvements to existing roadways and highways would not significantly increase the amount of glare and light in an area, as these improvements would take place on existing facilities that have existing sources of glare and light. The marginal increases in glare and light from additional vehicle headlights, new reflective signage, new streetlights, new intersection control devices, and other improvements would be less than significant when considered at the regional level.

New transportation facilities could increase the amount of light and glare, as a result of additional vehicles and additional streetlights, intersection control devices, reflective signage, and reflective roadway materials. During the daytime, additional vehicles could increase the amount of glare in an area, and at night, additional vehicle headlights could increase the amount of light in an area where no sources of transportation glare and light previously existed, resulting in increased urban glow and less dark skies that could impair star gazing.

Based on the above analysis, this impact is significant because implementation of the 2018 RTP/SCS would create a new source of substantial light or glare that would significantly change day or nighttime views. Mitigation is required for **Impact AES-3**; mitigation measures at the project level would reduce this impact (see **Mitigation Measure MM-AES-4(a)** below).

Level of Significance Before Mitigation

Significant.

Mitigation Measure

MM-AES-4(a): Consistent with the provisions of Section 15091 of the *State CEQA Guidelines*, TCAG has identified mitigation measures capable of avoiding or minimizing the effects of light and glare on routes of travel for motorists, cyclists, and pedestrians, or on adjacent properties, that are in the jurisdiction and responsibility of local agencies (land use projects) and implementing agencies (transportation projects).. Where the Lead Agency has identified that a project has the potential for significant effects, the Lead Agency can and should consider mitigation measures to minimize light and glare, including ensuring compliance with the goals and policies within county and city general plans, as applicable and feasible. Such measures may include but are not limited to the following:

- Use lighting fixtures that are adequately shielded to a point below the light bulb and reflector and that prevent unnecessary glare onto adjacent properties;

- Restrict the operation of outdoor lighting for construction and operation activities to the hours of 7:00 a.m. to 10:00 p.m.;
- Lighting will be directed away from habitat and open space areas adjacent to the project site;
- Use low level light sources with good color rendering and natural light qualities and/or cut-off fixtures for outdoor lighting;
- Use unidirectional lighting to avoid light trespass onto adjacent properties;
- Design exterior lighting to confine illumination to the project site, and/or to areas which do not include light-sensitive uses;
- Provide structural and/or vegetative screening from light-sensitive uses;
- Shield and direct all new street and pedestrian lighting away from light-sensitive off-site uses;
- Use non-reflective glass or glass treated with a non-reflective coating for all exterior windows and glass used on building surfaces; and
- Architectural lighting shall be directed onto the building surfaces and have low reflectivity to minimize glare and limit light onto adjacent properties.

Level of Significance After Mitigation

Because this PEIR evaluates impacts at the programmatic level, all project circumstances are not foreseeable and these mitigation measures may not be feasible or effective for some projects. Therefore, at the regional level, even with implementation of **Mitigation Measure MM-AES-4(a)**, impacts could remain significant and unavoidable. No additional feasible mitigation measures are available to reduce significant and unavoidable impacts beyond those identified in this PEIR.

4.1.4 CUMULATIVE EFFECTS

The 2018 RTP/SCS includes transportation projects and land use strategies that would shape the region over the next 25 years. These changes include the extension of transportation and related infrastructure that could impact scenic resources. Many of these transportation projects could facilitate access not only within the County but also to areas outside the region. In addition, Plan transportation projects would connect with transportation projects outside the region, facilitating construction of transportation infrastructure outside the region. This additional infrastructure outside the County could lead to development outside the region.

The combination of urban infrastructure and development would cumulatively change the character of the County. Urbanization or loss of these visual resources could also affect areas outside the region as many of these scenic areas extend beyond Tulare County. As a result, the 2018 RTP/SCS could indirectly cause changes to the visual character or to scenic areas outside Tulare County. The 2018 RTP/SCS impacts would add to visual impacts of cumulative development (transportation projects and growth as a result of RTP/SCS plans of adjacent jurisdictions). Therefore, impacts to aesthetic resources that could result from the 2018 RTP/SCS (identified as significant) could contribute to significant cumulative impacts outside the County. Implementation of **Mitigation Measures MM-AES-1(a)** and **MM-AES-4(a)** would reduce the 2018 RTP/SCS impacts to aesthetics but they would remain cumulatively considerable, and the 2018 RTP/SCS contribution to these impacts would be cumulatively considerable.

4.2 AGRICULTURE AND FORESTRY RESOURCES

This section describes the existing agricultural resources within the region and evaluates the significance of the changes in agricultural resources that could result from implementation of the 2018 RTP/SCS. In addition, this Program EIR provides mitigation measures for subsequent, site-specific environmental review documents prepared by lead agencies to reduce identified impacts as appropriate and feasible.

4.2.1 ENVIRONMENTAL SETTING

4.2.1.1 Existing Conditions

Agricultural Lands

Tulare County is located in California's San Joaquin Valley, one of the richest agricultural areas in the world. The County is home to 1.7 million acres of some of the world's most productive farmland, contributing $6.3 billion a year to the California economy.[1] A number of crops are not grown commercially anywhere else in the nation. Tulare County has the following:[2]

- Number of farms – 4,931
- Harvested cropland – 609,270 acres
- Irrigated land – 557,361 acres

Despite the low precipitation in the area and the County's dependence upon the availability of irrigation water, agriculture remains one of the primary industries in the County, with much of the level and moderately sloping land used for the production of agricultural crops. The foothills and mountain areas are used for livestock grazing. Tulare County is among California's leaders in the production of milk, citrus, and nuts.[3]

Urban development pressures and water availability affect agricultural lands throughout the region due to high population and employment growth. Agriculture conversion pressure is greatest at the edge of existing urban development.

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1 Tulare County. 2017. Tulare County Crop and Livestock Report 2016, http://agcomm.co.tulare.ca.us/default/index.cfm/standards-and-quarantine/crop-reports1/crop-reports-2011-2020/2016-crop-report/, September 2017.

2 US Department of Agriculture, Census of Agriculture, 2012 Census, https://www.agcensus.usda.gov/Publications/2012/Full_Report/Volume_1,_Chapter_2_County_Level/California/st06_2_001_001.pdf, May 2014.

3 Tulare County. 2017. *Tulare County Crop and Livestock Report 2016*.

Agriculture has deep roots in the region's history and future. The 2016 gross value of all agricultural commodities produced in Tulare County was $6,370,121,600. This represented a decrease (8.75 percent) from the 2015 crop value ($6,980,977,800). Tulare County's agricultural areas also provide benefits such as wildlife habitat, flood control, groundwater recharge, and energy production.

The California Department of Conservation, Division of Land Resources Protection, maps farmland throughout California under the Farmland Mapping and Monitoring Program (FMMP). The FMMP has divided the County's farmland into two separate maps, north and south. **Figure 4.2-1, Tulare County Farmland,** illustrates the location of farmlands in and outside Spheres of Influence (SOI).[4]

The FMMP has kept records of land use changes every two years since 1988. From 1998 to 2016, irrigated farmland has shown a steady decrease with an average annual decrease of 648 acres, but an average increase of 160 acres for non-irrigated farmland. Agricultural land, which includes irrigated farmland, non-irrigated farmland, and grazing land, had an average annual decrease of approximately 605 acres within the same period of time. **Table 4.2-1, Tulare County 1998-2016 Land Use Summary,** shows the changes in agricultural land within the County.

The Countywide decline of agricultural lands is also represented in **Table 4.2-2, County Summary and Change by Land Use Category**. **Table 4.2-2** compares the County's acreage in agricultural lands, urban and built up land, other land, and water area from 2014 to 2016, and identifies the acreage lost and gained in each land use designation. As the table shows, from 2014 to 2016 there was a net loss of 278 acres of prime farmland, but a net gain of 1,468 and 270 acres of farmland of statewide importance and unique farmland, respectively.[5] During the same period, urban and built-up land had a net total increase of 1,671 acres, farmland of local importance had a net total decrease of 1,052 acres, and grazing land had a net total decrease of 27 acres.

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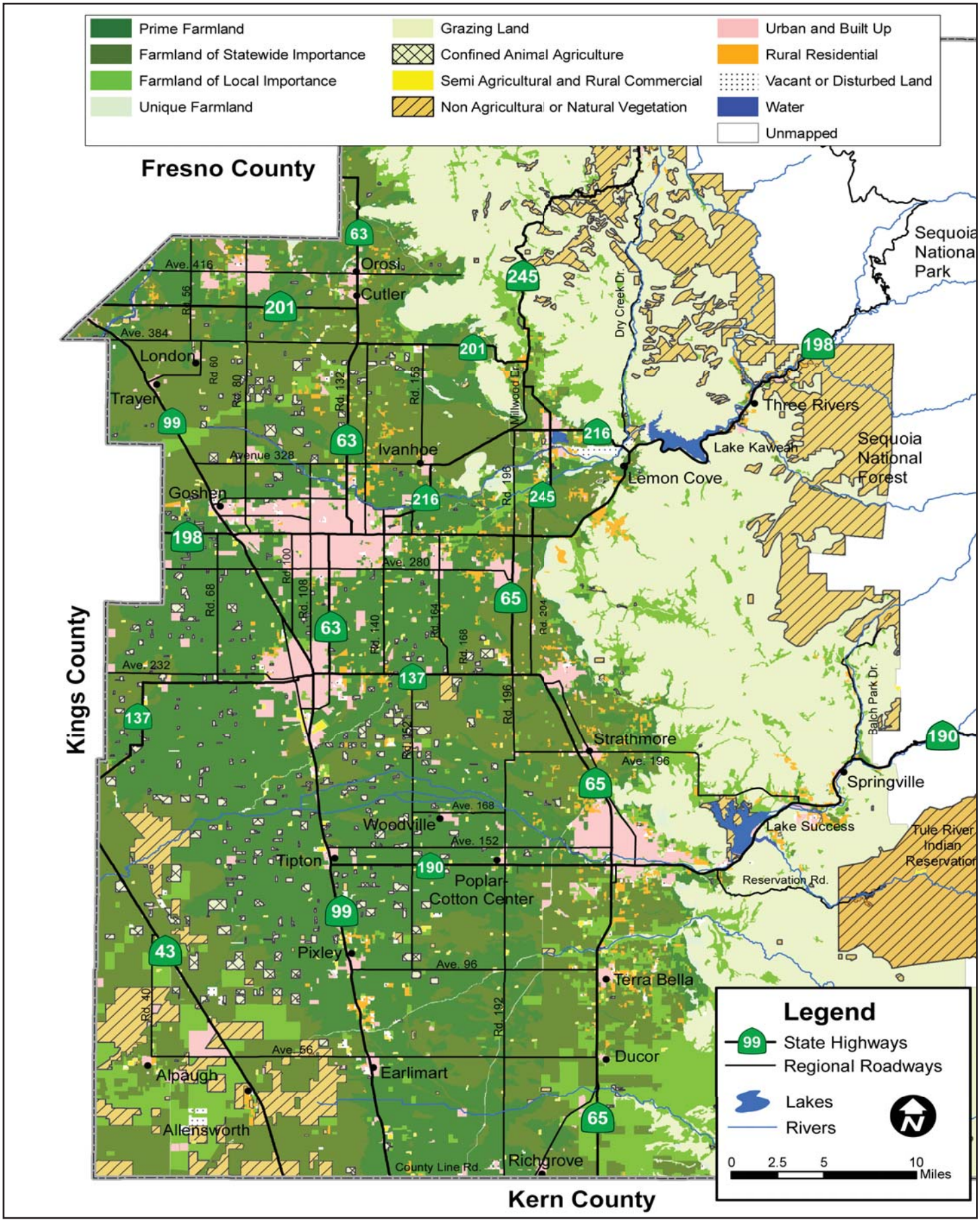
4 For purposes of SB 375, "Farmland" means farmland that is outside all existing city spheres of influence or city limits as of January 1, 2008, and is one of the following: classified as prime or unique farmland or farmland of statewide importance; farmland classified by a local agency in its general plan that meets or exceeds the standards for prime or unique farmland or farmland of statewide importance

5 California Department of Conservation, *Farmland Map and Monitoring Program 2014-2016*. http://www.conservation.ca.gov/dlrp/fmmp/Pages/Tulare.aspx. Accessed: March 2018.



SOURCE: County of Tulare, California Department of Conservation, 2018

FIGURE **4.2-1**

IMPACT SCIENCES

Tulare County Farmland

1290.001•04/18

Table 4.2-1
Tulare County 1998–2016 Land Use Summary

Land Use Category	Acreage by Category										1998-2016 Net Acreage Change	Average Annual Acreage Change
	1998 (3)	2000 (4)	2002	2004	2006	2008	2010	2012	2014 (5)	2016		
Prime Farmland	396,125	393,029	387,620	384,388	379,760	375,119	370,251	368,527	366,414	366,136	-29,989	-1,666
Farmland of Statewide Importance	357,221	350,589	345,763	339,579	332,158	327,204	323,598	321,296	320,887	322,355	-34,866	-1,937
Unique Farmland	11,792	11,723	12,746	12,527	12,218	11,919	11,594	11,474	11,421	11,691	-101	-6
Farmland of Local Importance	110,042	125,263	126,815	137,436	143,826	150,193	154,549	158,823	160,450	157,937	47,895	2,661
Important Farmland Subtotal	875,180	880,604	872,944	873,930	867,962	864,435	859,992	860,120	859,172	858,119	-17,061	-948
Grazing Land	439,955	434,047	440,550	440,620	440,135	439,851	440,042	439,940	439,962	439,934	-21	-1
Agricultural Land Subtotal	1,315,135	1,314,651	1,313,494	1,314,550	1,308,097	1,304,286	1,300,034	1,300,060	1,299,134	1,298,053	-17,082	-949
Urban and Built-Up Land	48,500	49,380	52,213	53,927	55,886	57,947	59,944	60,818	62,950	64,620	16,120	896
Other Land	217,607	217,182	215,506	212,740	217,228	218,980	221,231	220,331	219,184	218,593	986	55
Water Area	4,629	4,656	4,656	4,656	4,656	4,656	4,656	4,656	4,656	4,656	27	2
Total Area Inventoried	1,585,871	1,585,869	1,585,869	1,585,873	1,585,867	1,585,869	1,585,865	1,585,865	1,585,924	1,585,922	51	3

Source California Department of Conservation, Farmland Mapping and Monitoring Program, Tulare County Land Use Conversion Table Field Report (http://www.conservation.ca.gov/dlrp/fmmp/Pages/Tulare.aspx).
Notes:
(1) Interim component of the county was upgraded to Important Farmland status upon completion of the Western Tulare soil survey.
(2) Figures are generated from the most current version of the GIS data.
(3) Category totals for 1998 do not match those in the 'combined data 1986-98' worksheet. The combined data worksheet is a mathematical summary of Tulare County data prior to the addition of Western Tulare soil data.
This worksheet reflects the final Important Farmland product and the impact of mapping Farmland of Local Importance in the western part of the county.
(4) Due to the incorporation of digital soil survey data (SSURGO) in 2000, acreages for farmland, grazing and other land categories may differ from those published in the 1998-2000 California Farmland Conversion Report.
(5) Conversion of geospatial data to North American Datum 1983 (NAD 83) led to minor changes in total FMMP acreage beginning in 2014.

Table 4.2-2
Tulare County Summary and Change by Land Use Category

Land Use Category	Total Acreage Inventoried		2014–2016 Acreage Changes			
	2014	2016	Acres Lost	Acres Gained	Total Acreage Changed	Net Acreage Changed
Prime Farmland	366,414	366,136	2,243	1,965	4,208	-278
Farmland of Statewide Importance	320,886	322,355	3,103	4,572	7,675	1,469
Unique Farmland	11,421	11,691	243	513	756	270
Farmland of Local Importance	160,450	157,937	6,958	4,445	11,403	-2,513
Important Farmland Subtotal	859,171	858,119	12,547	11,495	24,042	-1,052
Grazing Land	439,961	439,934	539	512	1,051	-27
Agricultural Land Subtotal	1,299,132	1,298,053	13,086	12,007	25,093	-1,079
Urban and Built-up Land	62,949	64,620	61	1,732	1,793	1,671
Other Land	219,185	218,593	1,610	1,018	2,628	-592
Water Area	4,656	4,656	0	0	0	0
Total Area Inventoried	1,585,922	1,585,922				

Source: California Department of Conservation, Farmland Map and Monitoring Program 2014-2016.
Notes:
(1) Conversion to Farmland of Local Importance is primarily due to land left idle or land used for dryland grain production for three or more update cycles.
(2) Conversion to irrigated farmland is primarily due to the addition of irrigated orchards, mainly nut trees and citrus, and row crops.
(3) Conversion from Urban and Built-up Land is primarily the result of a lack of sufficient infrastructure and the use of detailed digital imagery to delineate more distinct urban boundaries.

The conversion of irrigated farmland to urban land[6,7] is primarily due to the construction of new solar facilities, homes, schools, and water control or recharge ponds. The largest concentration of conversions occurred in the form of new solar facilities, such as approximately 150 acres converted for the White River Solar Project and a groundwater recharge basin near the town of Alpaugh. In addition, near Visalia, approximately 80 acres was converted for the Ridgeview Middle School, Lennar at Vista, other new homes, and a solar facility. Non-irrigated and other land that was converted to urban land was primarily due to the construction of new solar facilities, homes, schools, parks, and other public facilities. Conversions from irrigated farmland to non-irrigated land uses were due to irrigated farmland having been fallow or used for dry grain production for three or more update cycles, and irrigated farmland that

6 Urban Land includes residential, industrial, recreational, infrastructure and institutional uses.

7 Irrigated Farmland includes most irrigated crops grown in California. When combined with soil data, these farmed areas become the Important Farmland (IFL) categories of Prime Farmland, Farmland of Statewide Importance & Unique Farmland. Because of the nature of the IFL definitions, some irrigated uses, such as irrigated pastures or nurseries, may not be eligible for all three IFL categories.

were no longer being irrigated and instead being used for cultivation of non-irrigated grain crops like in Hacienda Ranch NE, with approximately 350 acres going out of production. [8,9,10]

Williamson Act Lands

Tulare County currently contains approximately 1.1 million acres of prime and non-prime agricultural land under Williamson Act preserve status. **Table 4.2-3**, **Number of Williamson Act Acres in Tulare County in 2016,** illustrates the type and amount of agricultural land within the County.

Table 4.2-3
Number of Williamson Act Acres in Tulare County in 2016

Land Conservation Act	Acres
Prime	565,200
Non-Prime	521,376
Total	**1,086,576**

Source: Department of Conservation. 2016 Williamson Act Status Report

Forest Lands and Oak Woodlands

Forest land is defined in PRC Section 12220(g) is "land that can support 10-percent native tree cover of any species, including hardwoods, under natural conditions, and that allows for management of one or more forest resources, including timber, aesthetics, fish and wildlife, biodiversity, water quality, recreation, and other public benefits."

Several types of forest land are found in the County, including red fir, pine, and conifer forest land. The majority of the forest lands is located on the eastern portion of the County in the Sierra Nevada Mountains and controlled by federal agencies including the Bureau of Land Management and the U.S. Forest Service. See **Section 4.4, Biological Resources,** for more discussion of forest lands found in Tulare County.

8 Non-irrigated land uses include grazing areas, land used for dryland crop farming, and formerly irrigated land that has been left idle for three or more update cycles.

9 Other Land includes a variety of miscellaneous uses, such as low-density rural residential development, mining areas, vacant areas, and nonagricultural vegetation. Confined animal agriculture facilities are mapped as Other Land unless incorporated into a county Farmland of Local Importance definition.

10 California Department of Conservation. 2017. *Farmland Mapping and Monitoring Program.*

Various types of Oak Woodlands, including Douglas, Valley, and Pinyon Oak, are found in Tulare County. Douglas, or Blue Oak (Quercus douglasii), are found at average elevations in the County's mountains. Valley Oak woodlands are also found in Tulare County and require deep soils and good moisture. Similar to Douglas Oaks, vernal pools are often associated with the Valley Oak species. Digger Pine (*Pinus sabiniana*) is dominant in rocky and exposed places in the County along ridges and in canyons, usually with poor or shallow soil. In this habitat, Douglas oak, although common, often grows in a stunted, dwarfed, or even shrubby form. At lower levels, the woodland grows on north slopes and in canyons with the Upper Sonoran grassland on the south slopes. The Douglas oak woodland is rarely extensive. At the middle and higher elevations it alternates with the chaparral, shin oak brush, and even the yellow pine forest.[11] See **Section 4.4, Biological Resources,** for more discussion of oak woodlands found in Tulare County.

4.2.2 REGULATORY FRAMEWORK

4.2.2.1 Federal

National Environmental Policy Act

The National Environmental Policy Act (NEPA) is implemented by regulations included in the Code of Federal Regulations (40 CFR § 1500, *et seq*.), which require careful consideration of the harmful effects of federal actions or plans, including projects that receive federal funds, if they may have a significant adverse effect on the environment. NEPA mandates that all federal agencies carry out their regulations, policies, and programs in accordance with NEPA's policies of environmental protection. NEPA encourages the protection of all aspects of the environment and requires federal agencies to utilize a systematic, interdisciplinary approach to agency decision-making that will ensure the integrated use of natural sciences such as geology. While NEPA compliance is not required for the 2018 RTP/SCS, NEPA compliance will be required for transportation improvement projects that will be financed using federal funds. Some development projects (such as low-income housing) also use federal funds and are subject to NEPA.

Farmland Protection Policy Act

The Farmland Protection Policy Act (FPPA) of 1981 (7 USC § 4201, *et seq*.) is administered by the NRCS. The NRCS maps soils and farmland to provide comprehensive information necessary for understanding,

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11 Sawyer, J. O., T. Keeler-Wolf, and J.M. Evens. 2009. *A Manual of California Vegetation, Second Edition.* California Native Plant Society, Sacramento, California.

managing, conserving, and sustaining the nation's limited soil resources. The NRCS determines impacts to farmland that could occur due to a proposed project. The determination is made through coordination between the federal agency proposing or supporting the project and the NRCS. The NRCS makes a determination, using set thresholds, as to whether additional project-specific mitigation is required. The FPPA is intended to minimize the impact federal programs have on the unnecessary and irreversible conversion of farmland to non-agricultural uses. It assures that—to the extent possible—federal programs are administered to be compatible with state, local units of government, and private programs and policies to protect farmland. Federal agencies are required to develop and review their policies and procedures to implement the FPPA every two years. For the purpose of FPPA, farmland includes prime farmland, unique farmland, and farmland of statewide or local importance. Farmland subject to FPPA requirements does not have to be currently used for cropland. It can be forest land, pastureland, cropland, or other land, but not water or urban built-up land.

Federal Farm and Ranchland Protection Program

The Federal Farm and Ranchland Protection Program (FRPP) is a voluntary easement purchase program that helps farmers and ranchers keep their land in agriculture. Pursuant to sections 1539 to 1549 of the Farmland Protection Policy Act (FPPA) of 1981, the Secretary of Agriculture is directed to establish and carry out a program to "minimize the extent to which federal programs contribute to the unnecessary and irreversible conversion of farmland to nonagricultural uses, and to the extent practicable, will be compatible with state, unit of local government, and private programs and policies to protect farmland." (7 USC 4201-4209 & 7 USC 658). The program provides matching funds to state, tribal, or local governments and nongovernmental organizations with existing farmland protection programs to purchase conservation easements or other interests in land.

The FRPP was re-authorized in the Farm Security and Rural Investment Act of 2002 (Farm Bill). The NRCS manages the program. Technical Committee, awards funds to qualified entities to conduct their farmland protection programs. Although a minimum of 30 years is required for conservation easements, priority is given to applications with perpetual easements.

Federal Forest Legacy Program

The purpose of the Forest Legacy Program (FLP) (16 USC § 2103c) is to protect environmentally-important forestland under private ownership from conversion to non-forest uses, such as residential or commercial development. The FLP promotes the use of voluntary conservation easements on these properties. Landowners who wish to participate may sell or transfer particular rights, such as the right to develop the property or to allow public access, while retaining ownership of the property and the right to

use it in any way consistent with the terms of the easement. The agency or organization holding the easement is responsible for managing the rights it acquires and for monitoring compliance by the landowner. Forest management activities, including timber harvesting, hunting, fishing, and hiking are encouraged, provided they are consistent with the program's purpose.

4.2.2.2 State

California Department of Conservation

In 1982, the State of California created the Farmland Mapping and Monitoring Program within the California Department of Conservation to carry on the mapping activity from the NRCS on a continuing basis. The California Department of Conservation administers the California Land Conservation Act of 1965, also known as the Williamson Act, for the conservation of farmland and other resource-oriented laws.

Farmland Mapping and Monitoring Program

In 1982, the State of California created the Farmland Mapping and Monitoring Program (FMMP) within the Department of Conservation to carry on the mapping activity from the NRCS on a continuing basis. The FMMP is a non-regulatory program that provides consistent and impartial analysis of agricultural land use and land use changes throughout California for use by decision-makers in assessing present status, reviewing trends, and planning for the future of California's agricultural land resources. The FMMP produces Important Farmland Maps, which are a hybrid of resource quality (soils) and land use information. Information from the FMMP was used to identify agricultural resources within Tulare County. The FMMP is the primary system by which the extent, distribution, and quality of farmland is evaluated and monitored. Maps of Important Farmland are prepared periodically (approximately every two years) by the FMMP for most of the state's agricultural regions, based on soil survey information and land inventory and monitoring criteria developed by the NRCS. The classification system employed by FMMP consists of eight mapping categories: five categories of agricultural lands and three categories of nonagricultural lands. The characteristics of these eight categories are summarized below. As discussed above, the data provided by FMMP (maps and tables) include farmland in and outside the SOI.

- **Prime Farmland**: Prime farmlands are lands with the combination of physical and chemical features best able to sustain long-term production of agricultural crops. The land must be supported by a developed water supply that is dependable and of adequate quality during the growing season. It must also have been used for the production of irrigated crops at some time during the four years before the mapping data were collected.

- **Farmland of Statewide Importance**: Farmland of statewide importance are lands with agricultural land use characteristics, irrigation water supplies, and physical characteristics similar to prime

farmland but with minor shortcomings, such as steeper slopes or less ability to hold and store moisture.

- **Unique Farmland**: Unique farmlands are lands with lesser quality soils used for the production of California's leading agricultural cash crops. These lands are usually irrigated but may include non-irrigated orchards or vineyards as found in some of the state's climatic zones.

- **Farmland of Local Importance**: Farmlands of local importance are important to the local agricultural economy, as determined by each county's board of supervisors and a local advisory committee.

- **Grazing Land**: Grazing lands are lands on which the existing vegetation is suited to the grazing of livestock.

- **Urban and Built-up Land:** This category describes land occupied by structures with a building density of at least one unit to 1.5 acres, or approximately six structures to a 10-acre parcel. This land is used for residential, industrial, commercial, construction, institutional, public administration, railroad and other transportation yards, cemeteries, airports, golf courses, sanitary landfills, sewage treatment, water control structures, and other developed purposes.

- **Other Land:** This category encompasses land not included in any other mapping category. Common examples include low-density rural developments; brush, timber, wetland, and riparian areas not suitable for livestock grazing; vacant and nonagricultural land surrounded on all sides by urban development; confined livestock, poultry, or aquaculture facilities; strip mines; borrow pits; and water bodies smaller than 40 acres.

- **Water:** This category describes perennial bodies of water with an extent of at least 40 acres.

Figure 4.2-1 depicts the areas devoted to prime farmland, unique farmland, farmland of statewide importance, and farmland of local importance.[12] Most of the land is located in the western portion of Tulare County. An acreage summary by FMMP mapping category for County land is presented in **Tables 4.2-1 and 4.2-2**.

The California Land Conservation Act (Williamson Act)

The California Land Conservation Act (Williamson Act) of 1965 (Gov. Code, § 51200–51207) was enacted by the California State Legislature in 1965 to encourage the preservation of agricultural lands. The Williamson Act program permits property tax adjustments for landowners who contract with a city or county to keep their land in agricultural production or approved open space uses for at least 10 years. Lands covered by Williamson Act contracts are assessed on the basis of their agricultural value instead of their potential market value under nonagricultural uses. In return for the preferential tax rate, the landowner is required to contractually agree to not develop the land for a period of at least 10 years.

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12 DOC. 2017. *Farmland Mapping and Monitoring Program.*

Williamson Act contracts are renewed annually for 10 years unless a party to the contract files for non-renewal. The filing of a non-renewal application by a landowner ends the automatic annual extension of a contract and starts a nine-year phase-out of the contract. During the phase-out period, the land remains restricted to agricultural and open-space uses, but property taxes gradually return to levels associated with the market value of the land. At the end of the nine-year non-renewal process, the contract expires and the owner's uses of the land are restricted only by applicable local zoning.

The Williamson Act defines compatible use of contracted lands as any use determined by the county or city administering the preserve to be compatible with the agricultural, recreational, or open-space use of land within the preserve and subject to contract (Gov. Code, § 51202[e]). However, uses deemed compatible by a county or city government must be consistent with the principles of compatibility set forth in California Code section 51231, 51238, or 51238.1. **Table 4.2-3** shows the amount of agricultural lands under Williamson Act contract in Tulare County.

As reported in 2016, Tulare County contained a total of 1,086,576 acres of land contracted under the Williamson Act in 2015. Of those acres, 565,200 acres were prime farmland and 521,376 acres were nonprime. Though states no longer receive a subsidy associated with Williamson Act lands, the program remains an important part of farmland conservation strategies within the region. With that said, a landowner may initiate cancellation or non-renewal of a Williamson Act contract at any point. As of 2015, 17,131 acres were in non-renewal.[13]

California Forest Legacy

Similar to the Federal Forest Legacy Program, the California Forest Legacy Act of 2007 (Pub. Resources Code, § 12220(G)) is a program of the California Department of Forestry and Fire Protection (CAL FIRE) to promote conservation easements in environmentally sensitive forest areas. Money to fund the Program is obtained from gifts, donations, federal grants and loans, other appropriate funding sources, and from the sale of bonds pursuant to Proposition 12, the Safe Neighborhood Parks, Clean Water, Clean Air, and Coastal Protection Bond Act (The Villaraigosa-Kelley Act) of 2000 (Pub. Resources Code, div. 5, Ch. 1.692).

Forest land is defined in PRC Section 12220(g) as "land that can support 10-percent native tree cover of any species, including hardwoods, under natural conditions, and that allows for management of one or

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13 California Department of Conservation. *The California Land Conservation Act of 1965 2016 Status Report*. http://www.conservation.ca.gov/dlrp/lca/stats_reports/Documents/2016%20LCA%20Status%20Report.pdf. December 2016

more forest resources, including timber, aesthetics, fish and wildlife, biodiversity, water quality, recreation, and other public benefits."

The Right to Farm Act of 1981

The Right to Farm Act of 1981 (Civ. Code, § 3482.5) is designed to protect commercial agricultural operations from nuisance complaints that may arise when an agricultural operation is conducting business in a "manner consistent with proper and accepted customs." The code specifies that established operations that have been in business for three or more years that were not nuisances at the time they began shall not be considered a nuisance as a result of new land use.

California Farmland Conservancy Program Act

The California Farmland Conservancy Program Act of 2010 (Pub. Resources Code, § 10200 *et seq.*), also known as Sen. Bill No. 1142 (Stats. 2010, ch. 323) (SB 1142), established the California Farmland Conservancy Program (CFCP), which provides grants for agricultural conservation easements. An agricultural conservation easement aims to maintain agricultural land in active production by removing the development pressures from the land. Such an easement prohibits practices that would damage or interfere with the agricultural use of the land. Because the easement is a restriction on the deed of the property, the easement remains in effect even when the land changes ownership. Agricultural conservation easements are created specifically to support agriculture and prevent development on the subject parcels. While other benefits may accrue because the land is not developed (scenic and habitat values, for example), the primary use of the land is agricultural. Easements funded by the CFCP must be of a size and nature suitable for viable commercial agriculture.

Open Space Subvention Act

The Open Space Subvention Act (OSSA) of 1972 (Gov. Code, § 16140 *et seq.*) was enacted on January 1, 1972, to provide for the partial replacement of local property tax revenue foregone as a result of participation in the Williamson Act and other enforceable open space restriction programs. Participating local governments receive annual payment on the basis of the quantity (number of acres), quality (soil type and agricultural productivity), and, for Farmland Security Zone contracts, location (proximity to a city) of land enrolled under eligible, enforceable open space restrictions. There have been no subvention payments since Fiscal Year 2010.

The Cortese-Knox-Hertzberg Local Government Reorganization Act of 2000

The Cortese-Knox-Hertzberg Local Government Reorganization Act (Cortese-Knox-Hertzberg Act) of 2000 (Gov. Code, § 56000 *et seq*.), as amended, established procedures for local government changes of organization, including city incorporations, annexations to a city or special district, and city and special district consolidations. In enacting this law, the Legislature recognized that determination of local agency boundaries is an important factor in promoting orderly development and in balancing that development with sometimes competing state interests of discouraging urban sprawl, preserving open-space and prime agricultural lands, and efficiently extending government services. Additional information about the Tulare County Local Agency Formation Commission is included in section 4.2.2.3.

Timberland Production Zones

Under the Z'berg-Warren-Keene-Collier Forest Taxation Reform Act of 1976 (Gov. Code, §§ 51110–51119.5), counties must provide for the zoning of land used for growing and harvesting timber as Timberland Preserve Zones (TPZ). A TPZ is a 10-year restriction on the use of timberland, similar to the Williamson Act for agricultural lands. Land use under a TPZ is restricted to growing and harvesting timber or to compatible uses. In return, taxation of timberland under a TPZ will be based only on such restrictions in use.

California Timberland Productivity Act of 1982

The California Timberland Productivity Act (CTPA) of 1982 (Gov. Code, §§ 51100–51104) describes the powers and duties of local government in protecting timberlands. The law is designed to maintain an optimum amount of timberland, ensuring its current and continued availability by establishing Timberland Preserve Zones (TPZ) on all qualifying timberland, which restrict land use to growing and harvesting timber and other compatible uses. The Act discourages premature or unnecessary conversion of timberland to urban or other uses and expansion of urban services into timberland, and encourages investment in timberlands based on reasonable expectation of harvest. The CTPA also provides that timber operations conducted in accordance with California forest practice rules shall not be restricted or prohibited due to land uses in or around the location of the timber operations

California Department of Forestry and Fire Protection

CALFIRE reviews and approves plans for timber harvesting on private lands. In addition, through its responsibility for fighting wildland fires, the CDF plays a role in planning development in forested areas.

California Department of Parks and Recreation

The California Department of Parks and Recreation (CDPR) manages and provides sites for a variety of recreational and outdoor activities. The CDPR is a trustee agency that owns and operates all state parks and participates in land use planning that affects state parkland.

4.2.2.3 Local

General Plans

The most comprehensive land use planning for the Tulare region is provided by local general plans, which local governments are required to prepare as a guide for future development. The general plan contains goals and policies concerning topics that are mandated by state law or which the jurisdiction has chosen to include, such as land use, conservation and open space, natural resources, parks and recreation, and agricultural elements. The most relevant policies from the Tulare County General Plan regarding agricultural and forestry resources are summarized below.

Tulare County General Plan[14]

Goals:

AG-1: To promote the long-term preservation of productive and potentially-productive agricultural lands and to accommodate agricultural-support services and agriculturally-related activities that supports the viability of agriculture and further the County's economic development goals.

Policies:

AG-1.1 Primary Land Use: The County shall maintain agriculture as the primary land use in the valley region of the County, not only in recognition of the economic importance of agriculture, but also in terms of agriculture's real contribution to the conservation of open space and natural resources.

AG-1.2 Coordination: The County shall coordinate its agricultural policies and programs with State and federal regulations to preserve agricultural lands.

AG-1.3 Williamson Act: The County should promote the use of the California Land Conservation Act (Williamson Act) on all agricultural lands throughout the County located outside established UDBs and HDBs. However, this policy carries with it a caveat that support for the Williamson Act as a tax reduction component is premised on continued funding of the State subvention program that offsets the loss of property taxes.

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14 Tulare County. 2012. *Tulare County General Plan 2030 Update, Chapter 3 Agriculture.*

AG-1.4 Williamson Act in UDBs and HDBs: The County shall support non-renewal or cancellation processes that meet State law for lands within UDBs and HDBs.[15] [16]

AG-1.5 Substandard Williamson Act Parcels: The County may work to remove parcels that are less than 10 acres in Prime Farmland and less than 40 acres in Non-Prime Farmland from Williamson Act Contracts (Williamson Act key term for Prime/Non-Prime).

AG-1.6 Conservation Easements: The County shall consider development of an Agricultural Conservation Easement Program (ACEP) to help protect and preserve agricultural lands. In response, the County adopted an Agricultural Conservation Easement Program (ACEP) on May 3, 2016 to help protect and preserve agricultural lands (including "Important Farmlands").

AG-1.7 Preservation of Agricultural Lands: The County shall promote the preservation of its agricultural economic base and open space resources through the implementation of resource management programs such as the Williamson Act, Rural Valley Lands Plan, Foothill Growth Management Plan or similar types of strategies and the identification of growth boundaries for all urban areas located in the County.

AG-1.8 Agriculture within Urban Boundaries: The County shall not approve applications for preserves or regular Williamson Act contracts on lands located within a UDB and/or HDB unless it is demonstrated that the restriction of such land will not detrimentally affect the growth of the community involved for the succeeding 10 years, that the property in question has special public values for open space, conservation, other comparable uses, or that the contract is consistent with the publicly desirable future use and control of the land in question. If proposed within a UDB of an incorporated city, the County shall give written notice to the affected city pursuant to California Code §51233.

AG-1.9 Agricultural Preserves Outside Urban Boundaries: The County shall grant approval of individual applications for agricultural preserves located outside a UDB provided that the property involved meets the requirements of the Williamson Act and the regulations of Tulare County.

AG-1.10 Extension of Infrastructure into Agricultural Areas: The County shall oppose extension of urban services, such as sewer lines, water lines, or other urban infrastructure, into areas designated for agriculture use unless necessary to resolve a public health situation. Where necessary to address a public health issue, services should be located in public rights-of-way in order to prevent interference with agricultural operations and to provide ease of access for operation and maintenance. Service capacity and length of lines should be designed to prevent the conversion of agricultural lands into urban/suburban uses.

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15 Urban Area Boundary (UAB) is a County line establishing the area of expected urban growth in communities over a 20-year period. The boundaries allow or the coordination of plans and policies between the County and cities relating to construction, public utilities, and other development considerations.

16 Hamlet Development Boundary (HDB) is a County line around a hamlet, encompassing an area of land that is suitable for development. Outside of an HDB are lands to be protected for natural, agricultural, or rural uses.

AG-1.11 Agricultural Buffers: The County shall examine the feasibility of employing agricultural buffers between agricultural and non-agricultural uses, and along the edges of UDBs and HDBs. Considering factors include the type of operation and chemicals used for spraying, building orientation, planting of trees for screening, location of existing and future rights-of-way (roads, railroads, canals, power lines, etc.), and unique site conditions.

AG-1.12 Ranchettes: The County shall discourage the creation of ranchettes in areas designated Valley Agriculture and Foothill Agriculture.

AG-1.13 Agricultural Related Uses: The County shall allow agriculturally-related uses, including value-added processing facilities by discretionary approvals in areas designated Valley or Foothill Agriculture, subject to the following criteria:

1. The use shall provide a needed service to the surrounding agricultural area which cannot be provided more efficiently within urban areas or which requires location in a non-urban area because of unusual site requirements or operational characteristics;

2. The use shall not be sited on productive agricultural lands if less productive land is available in the vicinity;

3. The operational or physical characteristics of the use shall not have a significant adverse impact on water resources or the use or management of surrounding agricultural properties within at least one-quarter (1/4) mile radius;

4. A probable workforce should be located nearby or be readily available; and

5. For proposed value-added agricultural processing facilities, the evaluation under criterion "1" above shall consider the service requirements of the use and the capability and capacity of cities and unincorporated communities to provide the required services.

AG-1.14 Right-to-Farm Noticing: The County shall condition discretionary permits for special uses and residential development within or adjacent to agricultural areas upon the recording of a Right-to-Farm Notice (Ordinance Code of Tulare County, Part VII, Chapter 29, Section 07-29-1000 and following) which is an acknowledgment that residents in the area should be prepared to accept the inconveniences and discomfort associated with normal farming activities and that an established agricultural operation shall not be considered a nuisance due to changes in the surrounding area.

AG-1.15 Soil Productivity: The County shall encourage landowners to participate in voluntary programs that reduce soil erosion and increase soil productivity. To this end, the County shall promote coordination between the Natural Resources Conservation Service, Resource Conservation Districts, University of California (UC) Cooperative Extension, and other similar agencies and organizations.

AG-1.16 Schools in Agricultural Zones: The County shall discourage the location of new schools in areas designated for agriculture, unless the School District agrees to the construction and maintenance of all necessary infrastructure impacted by the project.

AG-1.17 Agricultural Water Resources: The County shall seek to protect and enhance surface water and groundwater resources critical to agriculture.

AG-1.18 Farmland Trust and Funding Sources: The in-lieu fees collected by the County may be transferred to the Central Valley Farmland Trust or other qualifying entity, which will arrange the purchase of conservation easements. The County shall encourage the Trust or other qualifying entity to pursue a variety of funding sources (grants, donations, taxes, or other funds) to fund implementation of the ACEP.

AG-2: To support increased viability of agriculture production and promote high-value, employment-intensive, and diverse agricultural production and processing in Tulare County.

Policies

AG-2.1 Diversified Agriculture: The County shall support and encourage trends in agricultural production that shift suitable land into a variety of crops that can support a more diverse agricultural sector.

AG-2.2 Market Research: The County shall encourage agricultural agencies and marketing cooperatives to research global and domestic markets for high-value crops capable of being produced in Tulare County.

AG-2.3 Technical Assistance: The County shall support efforts of the UC Cooperative Extension, the Agricultural Commissioner/Sealer, and other entities to provide technical assistance to farmers attempting to shift to higher-value crops.

AG-2.4 Crop Care Education: The County shall encourage regional workforce training programs in crop care and other related agricultural support fields.

AG-2.5 High-Value-Added Food Processing: The County shall support accelerated development of high-value-added food processing industries.

AG-2.6 Biotechnology and Biofuels: The County shall encourage the location of industrial and research oriented businesses specializing in biotechnologies and biofuels that can enhance agricultural productivity, enhance food processing activities in the County, provide for new agriculturally-related products and markets, or otherwise enhance the agricultural sector in the County.

AG-2.7 Tourist-Related Agricultural Uses: The County shall support the expansion of agricultural tourism that helps maintain sites in agricultural production, provided these activities do not negatively impact on-going agricultural operations on adjacent lands.

AG-2.8 Agricultural Education Programs: The County shall support and participate in on-going public education programs conducted by organizations such as the County Agricultural Commissioner/Sealer's Office, College of the Sequoias, UC Cooperative Extension, Farm Bureau, and industry organizations to help the public better understand the importance of the agricultural industry.

AG-2.9 Global Marketing: The County shall support and participate in appropriate efforts to market Tulare County as a premier location for the production of globally-distributed food, fiber, and energy products.

AG-2.10 Regional Transportation: The County shall work to improve regional transportation systems to support the movement of agricultural products locally, nationally, and globally.

AG-2.11 Energy Production: The County shall encourage and support the development of new agricultural related industries featuring alternative energy, utilization of agricultural waste and solar or wind farms.

ERM 1.9 Coordination of Management on Adjacent Lands: The County shall work with other government land management agencies (such as the Bureau of Land Management, US Forest Service, National Park Service) to preserve and protect biological resources, including those within and adjacent to designated critical habitat, reserves, preserves, and other protected lands, while maintaining the ability to utilize and enjoy the natural resources in the County.

ERM 1.10 Appropriate Access for Recreation: The County shall encourage appropriate access to resource-managed lands.

ERM 1.11 Hunting and Fishing: The County shall provide opportunities for hunting and fishing activities within the County pursuant to appropriate regulations of the California Fish & Game Code.

ERM 1.12 Management of Oak Woodland Communities: The County shall support the conservation and management of oak woodland communities and their habitats.

ERM 5.15 Open Space Preservation: The County shall preserve natural open space resources through the concentration of development in existing communities, use of cluster development techniques, maintaining large lot sizes in agricultural areas, discouraging conversion of lands currently used for agricultural production, limiting development in areas constrained by natural hazards, and encouraging agricultural and ranching interests to maintain natural habitat in open space areas where the terrain or soil is not conducive to agricultural production.

ERM 5.19 Interagency Cooperation: The County shall cooperate with Federal land management agencies to develop and promote the establishment of Three Rivers and Springville as gateway communities.

ERM 5.20 Allowable Uses on Timber Production Lands: The County shall allow uses (not related to forest production) on lands designated Resource Conservation in forestry production areas, provided it is demonstrated that:

1. they are compatible with forestry uses;

2. will not interfere with forest practices;

3. consider forest site productivity and minimize the loss of productive forest lands;

4. will meet standards relating to the availability of fire protection, water supply, and waste disposal; and

5. will not degrade the watershed and/or water quality due to increased erosion.

City of Visalia General Plan[17]

Objectives:

OSC-O-2 Work with the County and other organizations to protect prime farmland and farmland of Statewide importance outside the City's Urban Development Boundary for agricultural production, and to preserve areas for groundwater recharge.

OSC-O-9 Protect agricultural land from premature urban development.

Policies:

OSC-P-1 Conduct an annual review of cancelled Williamson Act contracts and development proposals on agricultural land within the Planning Area Boundary to foresee opportunities for acquisition, dedication, easements or other techniques to preserve agricultural open space or for groundwater recharge.

OSC-P-24 To allow efficient cultivation, pest control and harvesting methods, require buffers and transition areas between urban development and adjoining or nearby agricultural land.

OSC-P-28 Protect significant stands of Valley Oak woodlands from further development by designating them for Conservation, creating habitat management plans, where needed, and undertaking restoration activities as appropriate.

OSC-P-38 Revise the City's Valley Oak Ordinance to include cottonwood groves and other mature native trees, and update the map of landmark trees and distinctive biotic areas.

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17 City of Visalia. Chapter 4 Open Space and Conservation, Visalia General Plan Update. October 2014. http://www.visalia.city/civicax/filebank/blobdload.aspx?BlobID=30478

Tulare County Right-to-Farm Ordinance

Right-to-farm ordinances have been adopted by several California counties to protect farmers in established farming areas from legal action that new residents in nearby urban settings may take against nuisances such as odor, noise, and dust associated with normal day-to-day farming activities. Tulare County has adopted a right-to-farm ordinance that states that residents moving into areas where there are existing agricultural activities should be prepared to experience discomfort or inconveniences associated with normal farming activities and that an established agricultural operation shall not be considered a nuisance due to changes in the surrounding area. The right-to-farm ordinance (Ordinance Code section 7-29-1000 *et seq.*) was adopted to promote a good neighbor policy between agriculturalists and other residents by making clear what rights each has when they live near one another.

Area, Community and Specific Plans

A city or county may also provide land use planning by developing community or specific plans for smaller, more specific areas within their jurisdiction. These more localized plans provide for focused guidance for developing a specific area, with the development standards tailored to the area, as well as systematic implementation of the general plan.

Zoning

City or county zoning codes provide detailed requirements that implement general plan policies at the level of the individual parcel. Zoning codes identify standards for different uses and specify which uses are allowed in the various zoning districts of a given jurisdiction. Since 1971, state law has required city and county zoning codes to be consistent with the applicable general plan, except in charter cities.

Land Conservation Trust

A land trust is a nonprofit organization that, as all or part of its mission, actively works to conserve land by undertaking or assisting in land or conservation easement acquisition, or by its stewardship of such land or easements. A land conservation trust is another type of organization devoted to protecting open space, agricultural lands, wildlife habitats, and natural resource lands. There are approximately 80 established trusts in California. Local and regional land trusts, organized as charitable organizations under federal tax laws, are directly involved in conserving land for its natural, recreational, scenic, historical, and productive values. Local governments and special districts, either on their own or working with land trusts and conservancies, can acquire fee title to agricultural and open space lands or purchase development rights to preserve rural and agricultural areas, watersheds, or critical habitat, or to create public parks and recreational areas.

Local Agency Formation Commission

The Tulare County Local Agency Formation Commission (LAFCO) is responsible for coordinating logical and timely changes in local governmental boundaries, conducting special studies which review ways to reorganize, simplify, and streamline governmental structure and preparing Spheres of Influence for each city and special district within the county. The Commission's efforts are directed to seeing that services are provided efficiently and economically while agricultural and open-space lands are protected. While LAFCO has no direct land use authority, its actions determine which local government will be responsible for planning new areas. LAFCO addresses a wide range of boundary actions, including creation of spheres of influence for cities, adjustments to boundaries of special districts, annexations, incorporations, detachments of areas from cities, and dissolution of cities.

4.2.3 ENVIRONMENTAL IMPACTS

4.2.3.1 Thresholds of Significance

For the purposes of this PEIR, TCAG has determined that implementation of the proposed 2018 RTP/SCS would result in significant impacts to agricultural or forestry resources, if any of the following could occur:

- Convert prime farmland, unique farmland, or farmland of statewide importance (farmland), as shown on the maps prepared pursuant to the Farmland Mapping and Monitoring Program of the California Resources Agency, to non-agricultural use.
- Conflict with existing zoning or land use designation for agricultural use, or a Williamson Act contract.
- Conflict with existing zoning or land use designation for, or cause rezoning of, forest land (as defined in Pub. Resources Code, § 12220(G)), timberland (as defined by Pub. Resources Code, § 4526), or timberland zoned Timberland Production (as defined by Gov. Code, § 51104(G)); and/or result in the loss of "Forest Land" as defined in the California Forest Legacy Act of 2007 (Pub. Resources Code, § 12220(G)) or conversion of Forest Land into non-forest use.
- Involve other changes in the existing environment which, due to their location or nature, could result in conversion of farmland to non-agricultural use.

4.2.3.2 Methodology

The analysis assesses the impacts to agricultural, timber, and forest resources that could result from implementation of 2018 RTP/SCS.

Impacts are assessed in terms of changes to both land use and transportation infrastructure using Tulare County data and TCAG forecasts related to projected population, housing, and employment growth. The methodology for determining the significance of these impacts applies the significance criteria above to the future (2042) land use pattern and transportation network.

The development of new transportation facilities may affect agricultural, timber and forest resources, through both direct and indirect effects, including traversing agricultural, timberland, and forest lands.

Determination of Significance

The methodology for determining the significance of agricultural, timberland, and forest impacts compares the existing conditions to conditions in 2042 with the 2018 RTP/SCS, as required by *State CEQA Guidelines* Section 15126.2(a). The known agricultural, timberland, and forest resources located within the region were evaluated using the criteria set forth by the California Department of Conservation and the *State CEQA Guidelines*. The analysis was limited to state-recognized agricultural, timberland, and forest resources.

Implementation of the proposed 2018 RTP/SCS would affect land use patterns, including the consumption of agricultural land, timberland, and forest land. In general, the potential to impact agricultural, timber, and forest resources varies by the development area type (or location of transportation improvement). Agricultural, timber, and forest resources are more prevalent in rural than urban areas. Concentrations of agricultural land, timberland, and forest land are primarily located in undeveloped areas. However, as approximately half of Tulare County is comprised of federally protected land, and 43 percent of the County is agricultural land[18], these resources are encountered near the periphery of urban and suburban areas. Improvements within existing urban areas are less likely to affect agricultural, timber, and forest resources. However, reducing buffer zones between transportation corridors and agricultural and forestry resources, and reduction of the resources through lane widening could cause significant impacts.

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18 Tulare County. 2012. *Tulare County General Plan 2030 Update, Chapter 3 Agriculture.*

4.2.3.3 Impacts and Mitigation Measures

Impact AG-1 **Convert prime farmland, unique farmland, or farmland of statewide importance (farmland), as shown on the maps prepared pursuant to the farmland mapping and monitoring program of the California Resources Agency, to non-agricultural use.**

As of 2016, Tulare County's agricultural land included 366,136 acres of prime farmland, 11,691 acres of unique farmland, and 322,355 acres of farmland of statewide importance ("farmland")[19] (see **Table 4.2-1** and **Figure 4.2-1**, above). As shown in **Figure 4.2-1**, farmland comprises the majority of the County land uses with much of the west, north and south of the County being categorized as prime farmland. The potential for RTP projects to result in impacts to farmland is shown in **Table 4.2-4, 2018 RTP/SCS Land Consumption**.

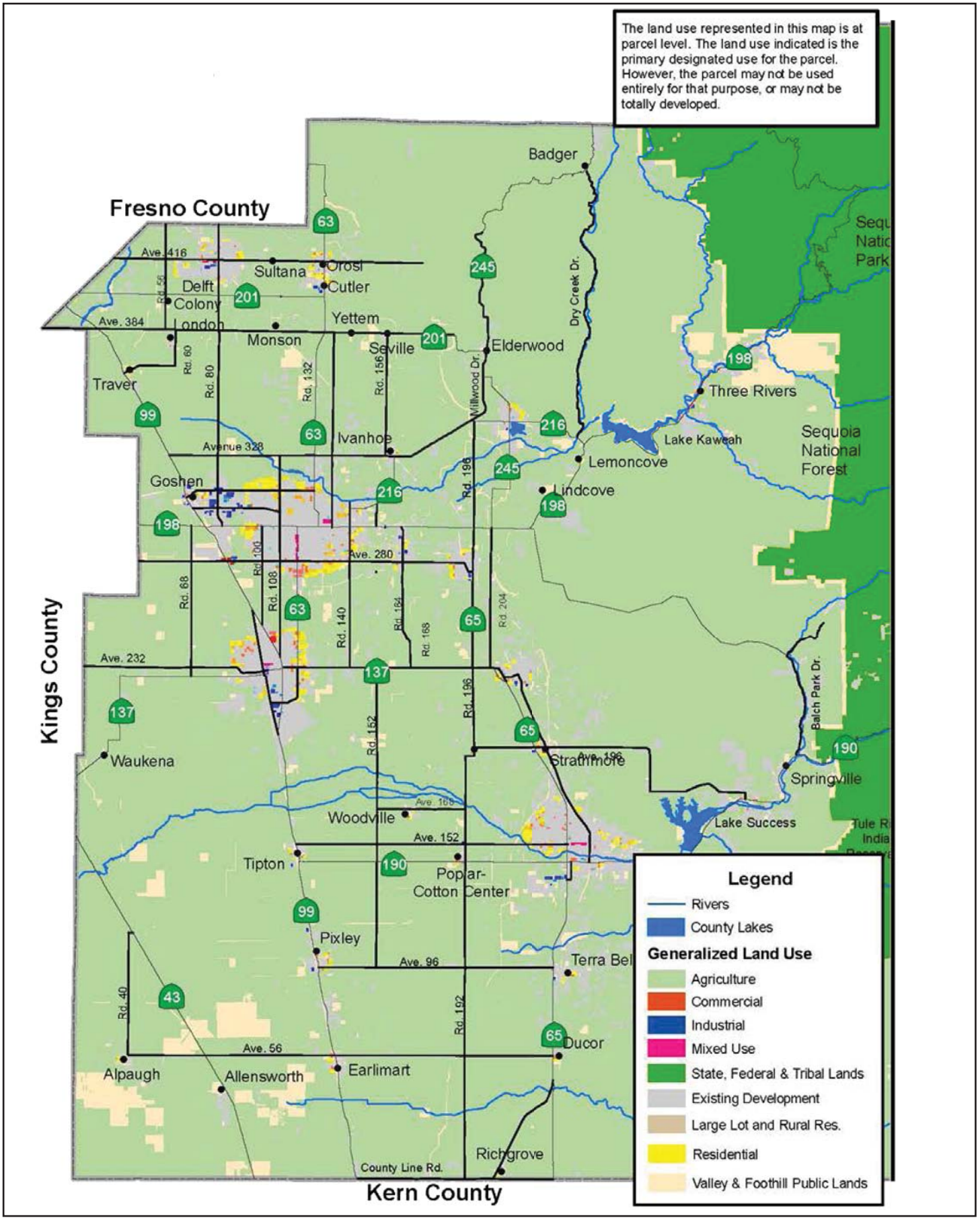
Table 4.2-4
2018 RTP/SCS Land Consumption

	Acres of Impact (2017 to 2042)	
Community Type	**No Project**	**2018 RTP/SCS**
Land Consumed (New Development)	10,525.0	8,884.0
Farmland Consumed	2,310.6	1,518.3

Source: TCAG, 2018: Envision Tomorrow Tool and FMMP.

As shown in **Table 4.2-4**, the 2018 RTP/SCS would consume 8,884 acres of land, of that 1,518.3 would be prime, important farmland, or farmland of statewide importance. As can be seen in **Figure 4.2-1,** the urban and built up areas of the County are surrounded by farmland. As a result, it is likely that as development occurs in urban areas and on the outskirts of urban areas, more farmland will be consumed. As shown on **Figure 4.2-2, 2042 Tulare County Land Use**, the land being consumed for development is primarily located on the periphery of the existing cities and unincorporated communities, the vast majority of which would occur around Visalia, Tulare, and Porterville.

19 Farmland Mapping and Monitoring Program (FMMP) of the California Department of Conservation (2016).



SOURCE: Tulare County Association of Governments, 2018

FIGURE **4.2-2**

2042 Tulare County Land Use

IMPACT SCIENCES

1290.001•04/18

The conversion of 1,518.3 acres over the 24-year planning period for the 2018 RTP/SCS represents a substantially lower rate of conversion (approximately 60.7 acres per year) than in previous years.[20] From 1990- 2004, Tulare lost agricultural land to urban uses at a rate of 626 acres per year.[21] This reduction in the rate of consumption is due largely to local and regional efforts to balance urban expansion with the conservation of economically viable farmland and a focus on development in urban areas adjacent to transit. More recently, reduction in consumption of agricultural lands could also be attributed to policies included in the 2014 RTP encouraging infill development.

Conversion of farmland to urban or developed uses comprises only a small portion of the overall loss of farmland. For Tulare County and the surrounding region, the reported major cause of this conversion is the downgrading of farmland to other agricultural uses (e.g., such as expanded or new livestock facilities, replacing irrigated farmland with non-irrigated crops, or land that is fallowed for six years or longer). For County lands outside of the unincorporated community areas, the continued conversion of farmland to other agricultural uses would continue based on trends identified by the California Department of Conservation as long as the demand for dairy/livestock-related agricultural products continues. Policies contained in the 2018 RTP/SCS encourage growth in urbanized areas, and the Tulare County General Plan 2030 Update (in particular the Rural Valley Lands Plan) limits conversion of agricultural land to non-agricultural uses in areas outside of cities, communities, and hamlets. However, the continued expansion or development of new dairy/livestock operations would contribute to the conversion of farmland to other agricultural uses, despite the SCS and other general plan and land use policies.

Although the rate of farmland conversion would decrease under the 2018 RTP/SCS, the impacts related to farmland conversion as a result of the land use changes and transportation improvements from implementation of the proposed 2018 RTP/SCS are nevertheless considered significant for **Impact AG-1**. Mitigation is required. Mitigation measures at both the regional level and project level would reduce this impact; see **Mitigation Measure MM-AG-1(a)** below.

Level of Significance Before Mitigation

Significant.

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20 Department of Conservation. 2017. *Farmland Mapping and Monitoring Program.*

21 California Department of Food and Agriculture. 2015. *Benefits of Farmland Conversion in California.*

Mitigation Measure

MM-AG-1(a): Consistent with the provisions of Section 15091 of the *State CEQA Guidelines*, TCAG has identified mitigation measures capable of avoiding or reducing the significant effects from the conversion of Prime Farmland, Unique Farmland, or Farmland of Statewide Importance to non-agricultural uses that are within the jurisdiction and responsibility of local agencies (land use projects) and implementing agencies (transportation projects). Local agencies and implementing agencies should assess projects for the presence of important farmlands (prime farmland, unique farmland, farmland of statewide importance), and if present, consider performing a Land Assessment and Site Evaluation (LESA). Where the Lead Agency has identified that a project has the potential for significant effects, the Lead Agency can and should consider mitigation measures to minimize farmland conversion impacts, including ensuring compliance with the goals and policies established within the applicable adopted county and city general plans to protect farmland. Such measures include but are not limited to the following, as well as other comparable measures identified by the Lead Agency taking into account project and site-specific considerations as applicable and feasible:

- Project relocation or corridor realignment to avoid Prime Farmland, Unique Farmland, or Farmland of Statewide Importance.
- Maintain and expand agricultural land protections such as urban growth boundaries.
- Provide an agricultural conservation easement pursuant to the Tulare County's Agricultural Conservation Easement Program. Tulare County would be responsible for implementation of the Tulare County's Agricultural Conservation Easement Program and ensuring that the terms of the conservation easement agreements are upheld.
- Provide for mitigation fees to support a mitigation bank that invests in farmer education, agricultural infrastructure, water supply, marketing, etc. that enhance the commercial viability of retained agricultural lands.

Level of Significance After Mitigation

Because this PEIR evaluates impacts at the programmatic level, all project circumstances are not foreseeable, and these mitigation measures may not be feasible or effective for some projects. Therefore, even with implementation of **Mitigation Measure MM-AG-1(a)**, impacts are considered significant and unavoidable. No additional feasible mitigation measures are available to reduce significant and unavoidable impacts beyond those identified in this PEIR.

Impact AG-2 **Conflict with existing zoning or land use designation for agricultural use, or a Williamson Act contract.**

As of 2016, Tulare County contained a total of 1,086,576 acres of land contracted under the Williamson Act. Of those acres, 565,200 acres were prime farmland and 521,376 acres were nonprime. As shown in **Table 4.2-4**, 1,518.3 acres of farmland could be consumed due to transportation projects and land use strategies included in the 2018 RTP/SCS. Due to the planning horizon of the 2018 RTP/SCS (24 years), it is likely that some land currently under Williamson Act contracts could not be renewed or expire and be converted to non-agricultural uses. As mentioned previously, the land being consumed for development is primarily located on the periphery of the existing cities and unincorporated communities, the vast majority of which would occur around Visalia, Tulare, and Porterville. It is important to note, however, that the vast majority of lands under Williamson Act contract are located outside the planned growth areas of the cities. One of the functions of the Williamson Act is to encourage orderly development while discouraging premature development of agricultural lands (with active Williamson Act contracts). The County implements a variety of policies in the County General Plan designed to prevent premature conversion of agricultural land and cancellation of Williamson Act contracts. Furthermore, it is assumed that the proper procedures (including minimizing early termination of active contracts), contained within the Williamson Act itself, will be followed as development within the County occurs. No specific zoning changes or conflicts would occur as a direct result of the 2018 RTP/SCS, rather each individual jurisdiction would be responsible for approving land use and zoning changes. Nonetheless, impacts to Williamson Act lands could occur and are considered significant and mitigation is required. **Mitigation Measure MM-AG-1(a)** is identified above.

Level of Significance Before Mitigation

Significant.

Mitigation Measure

Implement **MM-AG-1(a)**.

Level of Significance After Mitigation

Because this document evaluates impacts at the programmatic level, all project circumstances are not foreseeable and therefore, even with implementation of **MM-AG-1(a)**, impacts are considered significant and unavoidable. No additional feasible mitigation measures are available to reduce significant and unavoidable impacts beyond those identified in this PEIR.

Impact AG-3 **Conflict with existing zoning or land use designation for, or cause rezoning of, forest land (as defined in Pub. Resources Code, § 12220(G)), timberland (as defined by Pub. Resources Code, § 4526), or timberland zoned Timberland Production (as defined by Gov. Code, § 51104(G)); and/or result in the loss of "Forest Land" as defined in the California Forest Legacy Act of 2007 (Pub. Resources Code, § 12220(G)) or conversion of Forest Land into non-forest use.**

There are forest lands located in the eastern section of the County within National Parks and national Forests. Forest lands are generally located in areas of the County (mountain areas) that are under state and federal control (National Parks and National Forests); therefore the rate of forest land loss would be low.

It is unlikely that the 2018 RTP/SCS would cause land currently defined and zoned as forest land or timberland, or timberland zoned for Timberland Production, to be converted to residential or other uses because the Plan (as well as County polices and policies of other jurisdictions) focuses development in areas that do not include 'forest land' or 'timberland,' as defined by statutes. The land use pattern under the 2018 RTP/SCS does not include any development in areas of the County classified as "forest land" or "timberland." Growth under the 2018 RTP/SCS would primarily occur in urbanized areas, not existing forest lands, timberlands, or Timberland Production zones. Land use strategies contained within the 2018 RTP/SCS encourage growth in developed areas rather than a more dispersed land use pattern that could result in conversion of forest land, timberland, or Timberland Production zones. However, development could still impact forest lands and new roadways are located near forest lands and could impact such lands.

Due to the importance of the County's timberland and forest lands, the impacts to existing forest land, timberland, or Timberland Production zones, related to the land use changes and transportation improvements from implementation of the proposed 2018 RTP/SCS are considered significant and mitigation is required. **Mitigation Measure MM-AG-3(a)** is identified below.

Level of Significance Before Mitigation

Significant.

Mitigation Measures

MM-AG-3(a): Consistent with the provisions of Section 15091 of the State CEQA Guidelines, TCAG has identified mitigation measures capable of avoiding or reducing the significant effects on forest land, timberland, or Timberland Production zones that are within the jurisdiction

and responsibility of the California Department of Conservation, other public agencies, and Lead Agencies. Where the Lead Agency has identified that a project has the potential for significant effects, the Lead Agency can and should consider mitigation measures to mitigate the significant effects of forest and timberland resources to ensure compliance with the goals and policies established within the applicable adopted county and city general plans to protect resources consistent with the California Forest Legacy Act of 2007 (Pub. Resources Code, § 12220(G)), as applicable and feasible. Such measures may include the following, other comparable measures identified by the Lead Agency taking into account project and site-specific considerations as applicable and feasible:

- TCAG should facilitate and encourage implementing local agencies to encourage urban development, in place of development in rural and sensitive areas. Local jurisdictions should seek funding to prepare specific plans and related environmental documents to facilitate mixed-use development, and to allow these areas to serve as receiver sites for transfer of development rights away from environmentally sensitive lands and rural areas outside established urban growth boundaries.

- TCAG should facilitate and encourage implementing and local agencies to establish preservation ratios to minimize loss of forest land, and timberland, such as 1 acre of unprotected forest land and timber land to be permanently conserved for each acre of open space developed as a result of individual projects.

- TCAG should facilitate and encourage implementing and local agencies to implement design features in transportation projects to minimize impacts. Implementing agencies should consider corridor realignment, buffer zones and setbacks, and berms and fencing where feasible, to avoid forest lands and timberlands and to reduce conflicts between transportation uses and forest and timberlands.

Level of Significance After Mitigation

Because this document evaluates impacts at the programmatic level, all project circumstances are not foreseeable and therefore, even with implementation of **MM-AG-3(a)** impacts are considered significant and unavoidable. No additional feasible mitigation measures are available to reduce significant and unavoidable impacts beyond those identified in this PEIR.

Impact AG-4: Involve other changes in the existing environment which, due to their location or nature, could result in conversion of farmland, to non-agricultural use.

By 2042, Tulare County will experience an increase of approximately 133,127 people, 43,921 jobs, and 37,435 households. Implementation of the proposed 2018 RTP/SCS would convert approximately 8,884 acres of undeveloped land, of which 1,518.3 acres would be farmland.

By developing more compactly, the proposed 2018 RTP/SCS would direct more growth to already urbanized areas, thereby reducing the amount of agricultural lands that would be converted to non-agricultural uses. In developing the 2018 RTP/SCS forecasted development pattern and transportation system, TCAG relied on the policies of local governments to develop urbanization assumptions based on the most recent information available. Local land use policies related to agricultural preservation were of particular importance in this effort. However, as discussed in **Impact AG-1** and **AG-2**, implementation of the proposed 2018 RTP/SCS could result in the conversion of 8,884 acres of land, including 1,518.3 acres of farmland. Lands that remain agricultural lands, but are located near to areas that are converted to urban uses, may feel increased pressure to redevelop, as nearby land values increase or as nuisances from urban development spread to agricultural lands.

Several transportation projects included in the 2018 RTP/SCS would require changes in existing land uses which could result in conversion of farmland to non-agricultural use. For example, approximately 72 percent of the 2018 RTP/SCS's regional financially-constrained roadway projects would include the widening of existing roads,[22] and in areas adjacent to farmland, this could result in a loss of farmland.[23]

While much of the proposed transportation infrastructure would serve urban uses in urbanized areas of the region, it is likely that implementation of transportation improvements at the urban edge could increase urban access to roads that serve both the urban development and agricultural lands.

The 2018 RTP/SCS would encourage development in urban areas and in the spheres of influence around the cities which could change which communities are on the periphery of the cities. This could change which communities are closest to certain farming activities. Some new residents may be sensitive to the noise, any pesticide use and dust generated by certain farming practices, and may apply pressure to change zoning or other laws related to those farming activities. According to the County's Right-to-Farm Ordinance, the County would condition discretionary permits for special uses and residential

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22 Tulare County Association of Governments. *2018 Regional Transportation Plan/ Sustainable Communities Strategy*, Financial Element.

23 Tulare County Association of Governments. *2018 Regional Transportation Plan/ Sustainable Communities Strategy*,

development within or adjacent to agricultural only upon recording of a Right-to-Farm Notice. Per the notice, residents moving into areas where there are existing agricultural activities should be prepared to experience discomfort or inconveniences arising from typical agricultural operations and that an established agricultural operation shall not be considered a nuisance due to changes in the surrounding area. The right-to-farm ordinance promotes understanding and cooperation between urban residents and agricultural operators.

Transportation projects included in the 2018 RTP/SCS would increase mobility choices and capacity within urban areas. Pressure to convert agricultural lands located near the periphery of these built-out areas to urban land uses could increase as transportation improvements are made.

Therefore, impacts to agricultural land located near urban areas and/or transportation improvements included in the 2018 RTP/SCS are considered significant for **Impact AG-4**. Mitigation is required. Mitigation at the regional and project level would reduce this impact; see **Mitigation Measure MM-AG-1(a)**, above.

Level of Significance Before Mitigation

Significant.

Mitigation Measure

Implement **Mitigation Measure MM-AG-1(a)**.

Level of Significance After Mitigation

Because this PEIR evaluates impacts at the programmatic level, all project circumstances are not foreseeable, and these mitigation measures may not be feasible or effective for some projects. Therefore, even with implementation of **Mitigation Measure MM-AG-1(a)**, impacts could remain significant and unavoidable. No additional feasible mitigation measures are available to reduce significant and unavoidable impacts beyond those identified in this PEIR.

4.2.4 CUMULATIVE EFFECTS

Under the 2018 RTP/SCS, changes to land use would result in significant impacts to farmland and forest land. These impacts would be the direct result of either transportation improvements or development. The 2018 RTP/SCS impacts would add to farmland impacts of cumulative development (transportation projects and growth anticipated to result from RTP/SCS plans of adjacent jurisdictions). The significant loss of farmland, forest land, and Williamson Act lands would contribute to Valley-wide and statewide

cumulative impacts, and the 2018 RTP/SCS contribution of these impacts would be cumulatively considerable. Implementation of **Mitigation Measure MM-AG-1(a)** and **MM-AG-3(a)** would reduce the 2018 RTP/SCS contribution to cumulative farmland and forest land impacts; however, impacts would remain cumulatively considerable.

4.3 AIR QUALITY

This section describes the ambient air quality of Tulare County, provides a comparison of existing air quality to applicable federal, state, and local air pollutant standards, identifies the plans and policies developed in efforts to improve air quality, and evaluates air quality impacts associated with the 2018 RTP/SCS. In addition, this PEIR provides mitigation measures for subsequent, site-specific environmental review documents prepared by lead agencies to reduce identified impacts. Residual impacts after mitigation are identified. Sources utilized in this section include air quality data from the San Joaquin Valley Air Pollution Control District (SJVAPCD), the California Air Resources Board (CARB), and the US Environmental Protection Agency (USEPA). Note that GHG emissions impacts are discussed separately in **Section 4.6.**

4.3.1 ENVIRONMENTAL SETTING

4.3.1.1 Pollutants and Effects

Criteria air pollutants are defined as pollutants for which the federal and State governments have established ambient air quality standards for outdoor concentrations. The federal and State standards have been set at levels above which concentrations are harmful to human health and welfare. These standards are designed to protect the most sensitive persons from illness or discomfort. Pollutants of concern include carbon monoxide (CO), ozone (O_3), nitrogen dioxide (NO_2), sulfur dioxide (SO_2), particulate matter 2.5 microns or less in diameter (PM2.5), particulate matter ten microns or less in diameter (PM10), and lead (Pb). These pollutants are discussed below.

- Carbon Monoxide (CO) is a colorless and odorless gas formed by the incomplete combustion of fossil fuels. It is emitted almost exclusively from motor vehicles, power plants, refineries, industrial boilers, ships, aircraft, and trains. In urban areas, automobile exhaust accounts for the majority of emissions. CO is a non-reactive air pollutant that dissipates relatively quickly, so ambient concentrations generally follow the spatial and temporal distributions of vehicular traffic. Concentrations are influenced by local meteorological conditions, primarily wind speed, topography, and atmospheric stability. CO from motor vehicle exhaust can become locally concentrated when surface-based temperature inversions are combined with calm atmospheric conditions, a typical situation at dusk in urban areas between November and February. Inversions are an atmospheric condition in which a layer of warm air traps cooler air near the surface of the earth, preventing the normal rising of surface air. The highest concentrations occur during the colder months of the year when inversion conditions are more frequent. CO is a health concern because it competes with oxygen, often replacing it in the blood and reducing the blood's ability to transport oxygen to vital organs. Excess CO exposure can lead to dizziness, fatigue, and impair central nervous system functions.

- Ozone (O_3) is a colorless gas that is formed in the atmosphere when reactive organic gases (ROG) and nitrogen oxides (NO_X) react in the presence of ultraviolet sunlight. O_3 is not a primary pollutant; rather, it is a secondary pollutant formed by complex interactions of two pollutants directly emitted

into the atmosphere. The primary sources of ROG and NO_X, the components of O_3, are automobile exhaust and industrial sources. Meteorology and terrain play major roles in O_3 formation. Ideal conditions occur during summer and early autumn, on days with low wind speeds or stagnant air, warm temperatures, and cloudless skies. The greatest source of smog-producing gases is the automobile. Short-term exposure (lasting for a few hours) to O_3 can result in breathing pattern changes, reduction of breathing capacity, increased susceptibility to infections, inflammation of the lung tissue, and some immunological changes.

- Nitrogen Dioxide (NO_2), like O_3, is not directly emitted into the atmosphere, but is formed by an atmospheric chemical reaction between nitric oxide (NO) and atmospheric oxygen. NO and NO_2 are collectively referred to as NO_X, and are major contributors to O_3 formation. NO_2 also contributes to the formation of PM10. High concentrations of NO_2 can cause breathing difficulties and result in a brownish-red cast to the atmosphere with reduced visibility. There is some indication of a relationship between NO_2 and chronic pulmonary fibrosis. Some increase of bronchitis in children (2-3 years old) has been observed at concentrations below 0.3 parts per million (ppm).

- Sulfur Dioxide (SO_2) is a colorless, pungent gas formed primarily by the combustion of sulfur-containing fossil fuels. Main sources of SO_2 are coal and oil used in power plants and industries. Generally, the highest levels of SO_2 are found near large industrial complexes. In recent years, SO_2 concentrations have been reduced by the increasingly stringent controls placed on stationary source emissions of SO_2 and limits on the sulfur content of fuels. SO_2 is an irritant gas that attacks the throat and lungs. It can cause acute respiratory symptoms and diminished ventilator function in children. SO_2 can also yellow plant leaves and erode iron and steel.

- Particulate Matter (PM) consists of small liquid and solid particles floating in the air, and can form when gases emitted from industries and motor vehicles undergo chemical reactions in the atmosphere. The solid particles that contribute to PM include smoke, soot, dust, salts, acids, and metals. Fine particulate matter, or PM2.5, is roughly 1/28 the diameter of a human hair, and results from fuel combustion (in motor vehicles, power generation, industrial facilities), residential fireplaces, and wood stoves. PM2.5 can be formed in the atmosphere from gases such as SO_2, NO_X, and volatile organic compounds (VOC). PM10, also referred to as inhalable particulate matter, is about 1/7 the thickness of a human hair. Major sources of PM10 include: crushing or grinding operations; dust stirred up by vehicles traveling on roads; wood burning stoves and fireplaces; dust from construction, landfills, and agriculture; wildfires and brush/waste burning; industrial sources; windblown dust from open lands; and atmospheric chemical and photochemical reactions.

  PM2.5 and PM10 pose a greater health risk than larger-size particles. When inhaled, they can penetrate the human respiratory system's natural defenses and damage the respiratory tract. PM2.5 and PM10 can increase the number and severity of asthma attacks, cause or aggravate bronchitis and other lung diseases, and reduce the body's ability to fight infections. Very small particles of substances such as lead, sulfates, and nitrates can cause lung damage directly; these substances can be absorbed into the blood stream and cause damage elsewhere in the body. PM2.5 and PM10 can transport absorbed gases, such as chlorides or ammonium, into the lungs and cause injury. Whereas PM10 tends to collect in the upper portion of the respiratory system, PM2.5 is so tiny that it can penetrate deeper into the lungs and damage lung tissues. Suspended particulates also damage and discolor surfaces on which they settle, as well as produce haze and reduce regional visibility.

- PM2.5 and PM10 can increase the number and severity of asthma attacks, cause or aggravate bronchitis and other lung diseases, and reduce the body's ability to fight infections. In some cases, the particles can cause infectious diseases. For example, inhalation of spores can cause San Joaquin Valley Fever (formally known as Coccidioidomycosis), an infectious disease caused by the fungus Coccidioides immitis. Infection is caused by inhalation of Coccidioides immitis spores that have become airborne when dry, dusty soil or dirt is disturbed by wind, construction, farming, or other activities. The Valley Fever fungus tends to be found at the base of hillsides, in virgin, undisturbed soil and is found in the southwestern United States.[1]

- Lead (Pb) in the atmosphere occurs as particulate matter. Sources of lead include leaded gasoline; the manufacturers of batteries, paint, ink, ceramics, and ammunition; and secondary lead smelters. Prior to 1978, mobile emissions were the primary source of atmospheric lead. Between 1978 and 1987, the phase-out of leaded gasoline reduced the overall inventory of airborne lead by nearly 95 percent. With the phase-out of leaded gasoline, secondary lead smelters, battery recycling, and manufacturing facilities have become lead-emission sources of greater concern.

  Prolonged exposure to atmospheric lead poses a serious threat to human health. Health effects associated with exposure to lead include gastrointestinal disturbances, anemia, kidney disease, and in severe cases, neuromuscular and neurological dysfunction. Of particular concern are low-level lead exposures during infancy and childhood. Such exposures are associated with decrements in neurobehavioral performance, including intelligence quotient performance, psychomotor performance, reaction time, and growth.

- Toxic Air Contaminants (TACs) are airborne pollutants that may increase a person's risk of developing cancer or other serious health effects. TACs include over 700 chemical compounds that are identified by State and federal agencies based on a review of available scientific evidence. In California, TACs are identified through a two-step process established in 1983 that includes risk identification and risk management.

4.3.1.2 Sensitive Receptors

Some land uses are considered more sensitive to changes in air quality than others, depending on the population groups who utilize the land, and the activities involved. CARB has identified the following typical groups who are most likely to be affected by air pollution: children; the elderly; athletes; and people with cardiovascular and chronic respiratory diseases.[2] Sensitive receptors include residences, schools, playgrounds, childcare centers, athletic facilities, hospitals, long-term health care facilities, rehabilitation centers, convalescent centers, and retirement homes. Residential uses are primarily located in the urban centers of Visalia, Farmersville, Dinuba, and Porterville.

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1 Centers for Disease Control and Prevention, *Coccidioidomycosis (Valley Fever).* https://www.cdc.gov/niosh/topics/valleyfever/default.html. Last updated February 24, 2017. Accessed April 17, 2018.

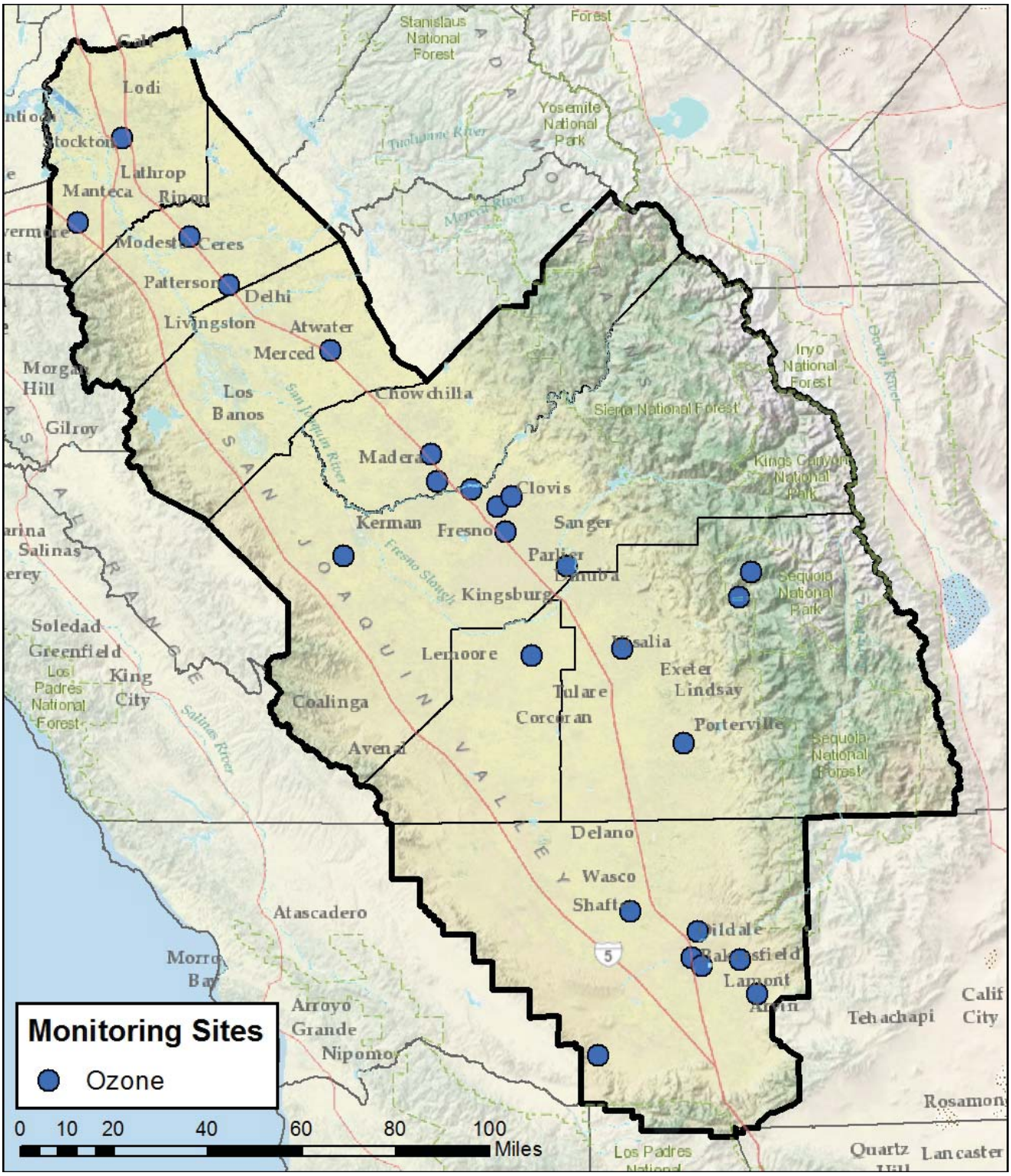
2 California Air Resources Board, *Air Quality and Land Use Handbook: A Community Health Perspective. April 2005.*

4.3.1.3 Regional Air Quality

Tulare County is in the San Joaquin Valley Air Basin (SJVAB), one of the most polluted air basins in the country.[3] **Figure 4.3-1, San Joaquin Valley Air Basin Boundary Map,** shows the boundary of the air basin. The air basin is bordered on the east by the Sierra Nevada range, on the west by the Coast Ranges, and on the south by the Tehachapi Mountains. These features restrict air movement through and out of the SJVAB.

Air quality is affected by the rate and location of pollutant emissions and by climatic conditions that influence the movement and dispersion of pollutants. Atmospheric conditions such as wind speed, wind direction, and air temperature gradients, along with local and regional topography, provide the links between air pollutant emissions and air quality. In Tulare County, which is located within the larger San Joaquin Valley Air Basin, surrounding mountains to the west, south, and east constrain the movement of air and dispersion of pollutants.[4] Restricted mixing and low wind speeds are generally associated with higher pollutant concentrations. These conditions are typically related to temperature inversions (temperature increase with height) which trap pollutants at lower elevations.

3 Tulare County, Chapter 9 Air Quality, Tulare County General Plan 2030 Update, August 2012.



SOURCE: San Joaquin Valley Air Pollution Control District, 2016

FIGURE **4.3-1**

San Joaquin Valley Air Basin Boundary Map

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In the San Joaquin Valley Air Basin, inversions form throughout the summer and winter. One way for this to occur is on clear winter nights, when the ground loses heat at a rapid rate, cooling the ground off and radiating the heat into the air. As the ground cools, the air in contact with it cools as well. Inversion layers are significant to meteorology because they block atmospheric flow, which causes the air over an area experiencing an inversion to become stable. In areas with unhealthy air or high rates of air pollution, an inversion can trap pollutants at ground level causing higher concentrations than under normal conditions (in whichwhen pollutants would tend to disperse due to air flow patterns).

Unlike other air basins in California, the pollution in the San Joaquin Valley Air Basin (SJVAB) is not produced by large urban areas. Instead, emissions are generated by many-moderate sized communities and rural uses. Vehicle emissions are a major source of emissions in the SJVAB. Correspondingly, transportation corridors such as I-5 and SR 99 are generating a significant amount of emissions. Emission levels in the Central Valley have been decreasing overall since 1990. This can be primarily attributed to motor vehicle emission controls that reduce the amount of vehicle emissions and controls on industrial/stationary sources. In spite of these improvements, the San Joaquin Valley is still identified as having some of the worst air quality in the nation.[5]

The main source of CO and NOx emissions is motor vehicles. The major contributors to ROG emissions are mobile sources and agriculture. ROG emissions from motor vehicles have been decreasing since 1985 due to stricter standards, even though the vehicle miles have been increasing. Stationary source regulations implemented by the SJVAPCD have also substantially reduced ROG emissions. ROG from natural sources (mainly from trees and plants) is the largest source of this pollutant in Tulare County. Atmospheric modeling accomplished for recent ozone planning efforts has found that controlling NOx is more effective at reducing ozone concentrations than controlling ROG. However, controls meeting Reasonably Available Control Technology (RACT) and Best Available Control Technology (BACT) are still required for SJVAPCD plans.[6,7]

[5] Ibid.

[6] Ibid.

Ozone, classified as a "regional" pollutant, often occurs downwind of the original source of precursor emissions. Ozone can be easily transported by winds from a source area. Peak ozone levels tend to be higher in the southern portion of the Valley, as the prevailing summer winds sweep precursors downwind of northern source areas before concentrations peak. As described below, the USEPA and CARB designate air basins as in attainment or nonattainment for several pollutants, including ozone. The separate designations reflect the fact that the movement of ozone precursors depends on daily meteorological conditions.

The SJVAB has been ranked the 2nd worst in the United States for O3 levels, even though data shows that overall O3 has decreased between 1982 and 2001. Direct PM10 emissions have decreased between the years 1975 and 1995 and have remained relatively constant since 2000. The main sources of PM10 in the SJVAB are from vehicles traveling on unpaved roads and agricultural activities. MPOs must implement Best Available Control Measures (BACM) for sources of fine particulate matter (PM10) to comply with federal attainment planning requirements for PM10.[8,9]

4.3.1.4 Toxic Air Contaminants (TACs)

In addition to criteria pollutants, CARB periodically assesses the health impacts and ambient levels of TACs, also referred to as hazardous air pollutants (HAPs), in California. The USEPA also assesses health impacts for hazardous air pollutants. A TAC is defined by California Health and Safety Code section 39655:

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7 Reasonable Available Control Technologies are devices, systems, process modifications, or other apparatus or techniques that are reasonably available, taking into account: the necessity of imposing such controls in order to attain and maintain a national ambient air quality standard; the social environmental, and economic impact of such controls; and alternative means of providing for attainment and maintenance of such a standard. Best Available Control Technologies are the most stringent emission limitation or control technique of the following: 1. Achieved in practice for such category and class of source 2. Contained in any State Implementation Plan approved by the EPA for such category and class of source. A specific limitation or control technique shall not apply if the owner of proposed emissions unit demonstrates to the satisfaction of the air pollution control officer (APCO) that such a limitation or control technique is not presently achievable 3. Contained in an applicable federal New Source Performance Standard or 4. Any other emission limitation or control technique, including process and equipment changes of basic or control equipment, found by the APCO to be cost effective and technologically feasible for such class or category of sources or for a specific source. Source: Tulare County General Plan, *Air Quality Element*, August 2012.

8 Ibid.

9 Best Available Control Measures is a set of programs that identify and implement potentially best available control measures affecting local air quality issues. Source: Tulare County General Plan, *Air Quality Element*, August 2012.

> *"Toxic air contaminant" means an air pollutant which may cause or contribute to an increase in mortality or in serious illness, or which may pose a present or potential hazard to human health. A substance that is listed as a hazardous air pollutant pursuant to subsection (b) of Section 112 of the federal act (42 USC. Sec. 7412(b)) is a toxic air contaminant.*

TACs are also defined as an air pollutant that may increase a person's risk of developing cancer and/or other serious health effects; however, the emission of a toxic chemical does not automatically create a health hazard. Other factors, such as the amount of the chemical, its toxicity and how it is released into the air, the weather, and the terrain, all influence whether the emission could be hazardous to human health. TACs are emitted by a variety of industrial processes, such as petroleum refining, electric utility, and chrome plating operations, and commercial operations such as gasoline stations, dry cleaners, and motor vehicle exhaust, and may exist as PM10 and PM2.5 or as vapors (gases). TACs include metals, other particles, gases absorbed by particles, and certain vapors from fuels and other sources.

The emission of toxic substances into the air can be damaging to human health and to the environment. Human exposure to these pollutants at sufficient concentrations and durations can result in cancer, poisoning, and rapid onset of sickness, such as nausea or difficulty in breathing. Other less measurable effects include immunological, neurological, reproductive, developmental, and respiratory problems. Pollutants deposited onto soil or into lakes and streams affect ecological systems and eventually human health through consumption of contaminated food. The carcinogenic potential of TACs is a particular public health concern because many scientists currently believe that there is no "safe" level of exposure to carcinogens. Any exposure to a carcinogen poses some risk of contracting cancer.

The State Air Toxics Program (created by AB 2588 of 1987) identified over 200 TACs, including the 189 TACs originally identified in the federal Clean Air Act.[10] The USEPA has assessed this expansive list of toxics and identified 21 TACs as Mobile Source Air Toxics (MSATs). MSATs are compounds emitted from highway vehicles and nonroad equipment. Some toxic compounds are present in fuel and are emitted to the air when the fuel evaporates or passes through the engine unburned. Other toxics are emitted from the incomplete combustion of fuels or as secondary combustion products. Metal air toxics also result from engine wear or from impurities in oil or gasoline. USEPA also extracted a subset of these 21 MSAT compounds that it now labels as the six priority MSATs: benzene, formaldehyde, acetaldehyde, diesel particulate matter (DPM)/diesel exhaust organic gases, acrolein, and 1,3-butadiene. While these six MSATs are considered the priority transportation toxics, USEPA stresses that the lists are subject to change and may be adjusted in future rules.[11] USEPA has issued a number of regulations that will

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10 CARB, *Final Staff Report: Update to the Toxic Air Contaminant List*. December 1999.

11 FHWA, *Memorandum. Information: Updated Interim Guidance on Air Toxic Analysis in NEPA Documents*, October 18, 2016.

dramatically decrease MSATs through cleaner fuels and cleaner engines. According to an FHWA analysis, even if the number of vehicle miles traveled increases by 45 percent, a reduction of 91 percent in MSATs is still projected from 2010 to 2050.[12]

As mentioned above, California law defines TACs as air pollutants having carcinogenic or other health effects. A total of 245 substances have been designated TACs under California law; they include the federal Hazardous Air Pollutants (HAPs) adopted as TACs in accordance with Assembly Bill 2728. The Air Toxics "Hot Spots" Information and Assessment Act of 1987, (AB 2588), seeks to identify and evaluate risk from air toxics sources; AB 2588 does not regulate air toxics emissions directly. Under AB 2588, sources emitting more than 10 tons per year of any criteria air pollutant must estimate and report their toxic air emissions to the local air districts. Local air districts then prioritize facilities on the basis of emissions, and high priority facilities are required to submit a health risk assessment and communicate the results to the affected public. Depending on risk levels, emitting facilities are required to implement varying levels of risk reduction measures.

The California-specific transportation air quality analysis model, EMFAC, is designed to model MSATs, including DPM, at the project level. Health effects from MSATs/TACs from on-road traffic, which include both, cancer risks and chronic non-cancer risks, have been associated primarily with DPM, benzene, and 1,3-butadiene. EMFAC can be used to estimate DPM, benzene, and 1,3-butadiene emissions. In addition to DPM, benzene, 1,3-butadiene, acetaldehyde, carbon tetrachloride, hexavalent chromium, paradichlorobenzene, formaldehyde, methylene chloride, and perchloroethylene pose the greatest existing ambient TAC risk, for which data are available, in California. DPM poses the greatest health risk among these ten TACs mentioned.[13]

Diesel Particulate Matter (DPM)

According to the 2013 California Almanac of Emissions and Air Quality, the majority of the estimated health risks from TACs can be attributed to relatively few compounds, the most important being particulate matter from the exhaust of diesel-fueled engines. DPM differs from other TACs in that it is not a single substance, but rather a complex mixture of hundreds of substances.[14]

Diesel exhaust is composed of two phases, gas and particle, and both phases contribute to the health risk. The gas phase is composed of many of the hazardous air pollutants typically found in urban areas, such

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12 Ibid.

13 South Coast Air Quality Management District, *Mates IV Final Report Multiple Air Toxics Exposure Study in the South Coast Air Basin*. May 2015.

14 CARB, *The California Almanac of Emissions and Air Quality 2013 Edition*. 2013.

as acetaldehyde, acrolein, benzene, 1,3-butadiene, formaldehyde, and polycyclic aromatic hydrocarbons. The particle phase is also composed of many different types of particles by size or composition. Fine and ultra-fine diesel particulates are of the greatest health concern, and may be composed of elemental carbon with adsorbed compounds such as organic compounds, sulfate, nitrate, metals ,and other trace elements. Diesel exhaust is emitted from a broad range of diesel engines: the on-road diesel engines of trucks, buses, and cars; and the off-road diesel engines that include locomotives, marine vessels, and heavy duty equipment. Although DPM is emitted by diesel-fueled internal combustion engines, the composition of the emissions varies depending on engine type, operating conditions, fuel composition, lubricating oil, and whether an emission control system is present.

The most common exposure to DPM is breathing the air that contains DPM. The fine and ultra-fine particles are respirable (similar to PM2.5), which means that they can avoid many of the human respiratory system defense mechanisms and enter deeply into the lung. Exposure to DPM comes from both on-road and off-road engine exhaust that is either directly emitted from the engines or lingering in the atmosphere.

Diesel exhaust causes health effects from both short-term or acute exposures, and long-term chronic exposures. The type and severity of health effects depends upon several factors, including the amount of chemical exposure and the duration of exposure. Individuals also react differently to different levels of exposure. There is limited information on exposure to just DPM, but there is enough evidence to indicate that inhalation exposure to diesel exhaust causes acute and chronic health effects.[15]

Acute exposure to diesel exhaust may cause irritation to the eyes, nose, throat, and lungs, as well as some neurological effects such as lightheadedness. Acute exposure may also elicit a cough or nausea as well as exacerbate asthma. Chronic exposure to DPM in experimental animal inhalation studies has shown a range of dose-dependent lung inflammation and cellular changes in the lung and immunological effects. Based upon human and laboratory studies, there is considerable evidence that diesel exhaust is a likely carcinogen. Human epidemiological studies demonstrate an association between diesel exhaust exposure and increased lung cancer rates in occupational settings.[16]

USEPA's National Scale Assessment uses several types of health hazard information to provide a quantitative "threshold of concern" or a health benchmark concentration at which it is expected that no adverse health effects occur at exposures to that level. Health effects information on carcinogenic, short- and long-term non-carcinogenic endpoints are used to establish selective protective health levels to

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15 USEPA, *Health Assessment Document for Diesel Engine Exhaust.* May 2002.

16 USEPA, *Integrated Risk Information System Chemical Assessment Summary: Diesel Engine Exhaust*. 2003. *https://cfpub.epa.gov/ncea/iris2/chemicalLanding.cfm?substance_nmbr=642*.

compare to the modeled exposure levels. Unfortunately, the exposure response data in human studies are considered too uncertain to develop a carcinogenic unit risk for USEPA's use. There is a Reference Concentration (RFC) that is used as a health benchmark protective of chronic non-carcinogenic health effects, but it is for diesel exhaust and not specifically set for DPM.[17]

Health Studies

As discussed above, vehicle emissions contain a number of substances that can be harmful, including TACs such as benzene and diesel PM. A growing body of scientific evidence shows that living or going to school near roadways with heavy traffic volumes is associated with a number of adverse effects. These include increased respiratory symptoms, increased risk of heart and lung disease, and elevated mortality rates.[18] While most of the initial studies were conducted in Europe, a number of research projects conducted in the United States and California are finding similar results.

Children's Health Study. For example, as of 2005, the *Children's Health Study*, a ten-year study conducted by the University of Southern California School of Medicine, found strong evidence that exposure to pollutants related to vehicle emissions such as NO_2 and elemental carbon (or soot) is linked to a slowing of lung function growth. The researchers concluded that the resulting deficits in lung function are likely permanent and may increase the risk for respiratory and other diseases later in life. The study also found that the children in the study who lived nearest to roadways with heavy traffic, such as freeways, showed increased risk for having asthma.[19]

The East Bay Children's Respiratory Health Study. The East Bay Children's Respiratory Health Study, conducted in 2001, included more than 1,100 students between the 3rd and 5th grades.[20] The study included ten neighborhoods with school sites located upwind and downwind from major roads. The San Francisco Bay area has strong prevailing winds, and this study found that downwind direction and proximity to major roads was an important determinant of increased exposure to traffic pollutants. This study found higher concentrations of black carbon, oxides of nitrogen, and nitrogen oxide at schools located downwind from freeways as compared with those schools upwind or farther from major traffic sources.

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17 USEPA. 2017. National Air Toxics Assessment, Available online at: https://www.epa.gov/national-air-toxics-assessment, accessed April 24, 2018.

18 SCAQMD, *Traffic Pollutants and Health Effects*. May 20, 2005.

19 *Ibid*.

20 ARB, *The East Bay Children's Health Study; Traffic-Related Air Pollution Near Busy Roads*, June 7, 2004.

For children residing at their current address for at least one year, investigators found a modest but significant increase of five to eight percent in bronchitis and asthma symptoms in children in neighborhoods with higher concentrations of traffic pollutants.

California Office of Environmental Health Hazard Assessment (OEHHA) School Study. The OEHHA studied public schools in California, various socioeconomic factors, and their proximity to major roads. The study found that about two percent of all the public schools in California, incorporating about 150,000 students, are within 150 meters (500 feet) of a very busy roadway.[21] The study also provided recommendations on ways to mitigate exposure of students to traffic-related pollutants in the event that a school is located near busy roadways.

Air Quality and Land Use Handbook. The studies described in the above paragraphs, along with other similar studies, were considered by CARB in the preparation of the publication, *Air Quality and Land Use Handbook: A Community Health Perspective*.[22] In the discussion of traffic emissions and health effects, the key health findings included the following:

- Reduced lung function in children was associated with traffic density, especially trucks, within 1,000 feet and the association was strongest within 300 feet;
- Increased asthma hospitalizations were associated with living within 650 feet of heavy traffic and heavy truck volume;
- Asthma symptoms increased with proximity to roadways and the risk was greatest within 300 feet;
- Asthma and bronchitis symptoms in children were associated with proximity to high levels of traffic in a San Francisco Bay Area community with good overall regional air quality; and
- A San Diego study found increased medical visits in children living within 550 feet of heavy traffic.

The CARB concludes their analysis with the following recommendation: Avoid siting new sensitive land uses within 500 feet of a freeway, urban roads with 100,000 vehicles/day, or rural roads with 50,000 vehicles/day.

Childhood Asthma. A study published in 2006 examined the relationship of residence near a freeway and susceptibility to childhood asthma.[23] This study found residence within 75 meters (245 feet) of a major road was associated with an increased risk of lifetime asthma, prevalent asthma, and wheeze. The higher risk of asthma near a major road decreased to background rates at 150 to 200 meters (490 to 655 feet) from

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21 OEHHA, *The East Bay Children's Respiratory Health Study*, May 2004.

22 ARB, *Air Quality and Land Use Handbook: A Community Health Perspective*, April 2005.

23 McConnell, R., K. Berhane, L. Yao, M. Jerrett, F. Lurmann, F. Gilliland, N. Kunzli, J. Gauderman, E. Avol, D. Thomas, and J. Peters, *Traffic, Susceptibility, and Childhood Asthma*, 2006.

the road. In children with a parental history of asthma and in children moving to the residence after two years of age, there was no increased risk associated with exposure. A similar pattern of effects was observed with traffic-modeled exposure. These results indicate that residence near a major road is associated with asthma.

Traffic and Lung Development. A February 2007 study, Effect of Exposure to Traffic on Lung Development from 10 to 18 Years of Age: A Cohort,[24] examined the pulmonary function of more than 3,500 children over a period of eight years. The studies were conducted in 12 California communities. Health effects related to distance from freeways were divided into three groups: less than 500 meters (1,640 feet) from the freeway, 500 to 1,500 meters (1,640 to 4,920 feet) from the freeway, and greater than 1,500 meters (4,920 feet) from the freeway.

The study shows that the residential proximity to freeway traffic is associated with substantial deficits in lung-function development in children. The effects were greater for those children who lived within 500 meters (1,640 feet) of a freeway than for those who lived at least 1,500 meters (4,920 feet) from a freeway. Since lung development is nearly complete by age 18 years, an individual with a deficit at this time will probably continue to have less than healthy lung function for the remainder of his or her life. The study did not find any evidence that traffic effects varied depending on background air quality, which suggests that even in an area with low regional pollution, children living near a major roadway are at increased risk of health effects. The results also suggest that children who live close to a freeway in a high pollution area experience a combination of adverse developmental effects because of both local and regional pollution.

Particulates at a Sacramento School Site. A multi-year study in the Sacramento area, described in a 2006 report, analyzed atmospheric particulate matter at a school site downwind of a busy secondary road.[25] The study was not a health effects study. The study is of interest for the following reasons: (1) The study indicates that exhaust from automobiles may be a greater source of toxic pollutants than diesel exhaust, and (2) a barrier of dense vegetation can be one element in a pollutant mitigation strategy. The study also emphasizes that the most important mitigation for exposure near roadways is the distance from the road to the receptor.

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24 Gauderman, W. J., H. Vora, R. McConnell, K. Berhane, F. Gilliland, D. Thomas, F. Lurmann, E. Avol, N. Kunzli, M. Jerrett, and J. Peters, *Effect of Exposure to Traffic on Lung Development from 10 to 18 Years of Age: A Cohort Study*, The Lancet, Volume 369. February 17, 2007.

25 Cahill, T. A., *Vehicular Exposures and Potential Mitigations Downwind of Watt Avenue, Sacramento, CA. Report to The Health Effects Task Force, Breathe California of Sacramento-Emigrant Trails*, 2006.

4.3.2 REGULATORY FRAMEWORK

Air quality in Tulare County is addressed through the efforts of various federal, state, regional, and local government agencies. The agencies primarily responsible for improving the air quality within the County include the USEPA, CARB, SJVAPCD, and TCAG. These agencies work jointly, as well as individually, to improve air quality through legislation, regulations, planning, policy-making, education, and a variety of programs. The agencies primarily responsible for improving the air quality within Tulare County are discussed below, along with their individual responsibilities.

Mobile emission sources are regulated through the establishment of Federal and State vehicle emission requirements with which auto manufacturers must comply. Motor vehicle emissions are also regulated by the State's vehicle inspection and maintenance program (the "Smog Check Program"). Indirectly, increases in motor vehicle emissions can be regulated by agencies other than CARB through CEQA.

4.3.2.1 Federal

US Environmental Protection Agency and Clean Air Act

The USEPA is responsible for implementing the federal Clean Air Act, as amended (42 USC 7401 *et seq*.), which requires it to set National Ambient Air Quality Standards (NAAQS). These standards identify levels of air quality for seven "criteria" pollutants: O_3, CO, NO_2, SO_2, PM10, PM2.5, and lead. The NAAQS are considered to be the maximum concentration of ambient (background) air pollutants determined safe to protect the public health and welfare with an adequate margin of safety.

The Clean Air Act requires each state with areas that do not meet the NAAQS to prepare and submit a State Implementation Plan (SIP) that demonstrates the means to attain the federal standards. The SIP must integrate federal, state, and local plan components and regulations to identify specific measures to reduce pollution, using a combination of performance standards and market-based programs, within the time frame identified in the SIP. Note that an SIP is not a single document, but rather a collection of documents including technical reports, district rules, state regulations, programs, and air quality management plans (AQMPs). AQMPs are developed by the local air districts to ensure local compliance with the aims of the SIP, and become part of the SIP once submitted and approved. Consequently, compliance with the applicable SIP ensures compliance with the AQMP as well.

The USEPA designates air basins as being in attainment or nonattainment for each of the seven criteria pollutants. Nonattainment air basins for ozone are further ranked (marginal, moderate, serious, severe, or extreme) according to the degree of nonattainment. CARB is required to describe in its SIP how the state will achieve federal standards by specified dates for each air basin that has failed to attain a NAAQS for

any criteria pollutant. The extent of a given SIP depends on the severity of the air quality condition within the state or a specific air basin. (See discussion of Ambient Air Quality Standards below.)

Under Title III of the Clean Air Act,USEPA establishes and enforces National Emission Standards for Hazardous Air Pollutants (NESHAPs), which are nationally uniform standards oriented toward controlling particular HAPs. Section 112(b) of the CAA identifies 189 "Air Toxics" (also called HAPs, since modified to 187 pollutants), directs USEPA to identify sources of the HAPs, and establishes a 10-year time period for USEPA to issue technology-based emissions standards for each source category. Emission standards have been developed for all of the stationary source categories under 40 CFR Part 63. Title III of the CAA provides for a second phase under which USEPA is to assess residual risk after the implementation of the first phase of standards and impose new standards, when appropriate, to protect public health. The Risk and Technology Review (RTR) is a combined effort to evaluate both risk and technology as required by the CAA after the application of maximum achievable control technology (MACT) standards.

USEPA has issued a number of regulations that require decreases in mobiles source air toxics (MSAT emissions) from specified fuels and engines. These regulations include USEPA's fuel program (40 CFR Part 83), which requires that refiners must meet an annual average gasoline benzene content standard of 0.62 percent by volume on all of their gasoline nationwide. In addition, USEPA's mobile source program (40 CFR Parts 85 and 86) regulates tailpipe emissions from mobile sources, including in-use and new vehicles. These include regulations addressing emissions from new light-duty vehicles, light-duty trucks, and heavy-duty engines (40 CFR Part 86, Subparts A and B) and motorcycles (40 CFR Part 86, Subparts E and F). The regulations also specify test procedures for the testing of mobile source engines.

Transportation Conformity

Transportation conformity is required under Clean Air Act section 176(c) to ensure that federally supported highway and transit project activities are consistent with ("conform to") the purpose and requirements of the SIP. Conformity currently applies to areas that are designated non-attainment, and those re-designated to attainment after 1990 ("maintenance areas" with plans developed under CAA section 175A) for the following transportation-related criteria pollutants: ozone, particulate matter (PM2.5 and PM10), CO, and NO_2. Conformity to the purpose of the SIP means that transportation activities will not cause new air quality violations, worsen existing violations, or delay timely attainment of the relevant NAAQS. The transportation conformity regulation is found in 40 CFR Part 93, Subpart A. Transportation conformity is analyzed by a forecasting and modeling process considering population growth, employment growth, trip generation, trip distribution, mode choice, and highway and transit assignment.

Motor vehicle emissions are then modeled, and conformity is demonstrated by showing that emissions would be within the emissions limits ("budgets") established by the SIP.

Conformity also requires reporting on the timely implementation of Transportation Control Measures (TCMs) , thus reinforcing the link between AQMP/SIPs and the transportation planning process. TCMs are expected to be given funding priority and to be implemented on schedule.

4.3.2.2 State

California Air Resources Board and California Clean Air Act

The California Air Resources Board (CARB) oversees air quality planning and control throughout California. It is primarily responsible for ensuring the implementation of the California Clean Air Act (CCAA) California Health and Safety Code Section 39000 *et seq*.), responding to the federal Clean Air Act planning requirements applicable to the state, and regulating emissions from motor vehicles and consumer products within the state. In addition, CARB also sets health-based air quality standards and control measures for toxic air contaminants (TACs).. Under the federal Clean Air Act, CARB has the authority to establish more stringent standards for vehicles sold in California and for various types of equipment available commercially. It also sets fuel specifications to further reduce vehicular emissions.[26]

The California Clean Air Act established a legal mandate for air basins to achieve the California ambient air quality standards (CAAQS) by the earliest practical date. These standards apply to the same seven criteria pollutants as the federal Clean Air Act, and also include sulfates, visibility-reducing particles, hydrogen sulfide, and vinyl chloride. The state standards are generally more stringent than the federal standards, and in the case of PM10 and SO_2, far more stringent.

CARB supervises and supports the regulatory activities of local air quality districts, as well as monitors air quality itself. Health and Safety Code section 39607(e) requires CARB to establish and periodically review area designation criteria. These designation criteria provide the basis for CARB to designate areas of the state as attainment, nonattainment, or unclassified according to state standards. CARB makes area designations for 10 criteria pollutants: O_3, CO, NO_2, SO_2, PM10, PM2.5, sulfates, lead, hydrogen sulfide,

26 USEPA, *Vehicle Emissions California Waivers and Authorizations*. https://www.epa.gov/state-and-local-transportation/vehicle-emissions-california-waivers-and-authorizations. Accessed April 17, 2018.

and visibility-reducing particles.[27] Air quality of a region is considered to be in attainment of the state standards if the measured ambient air pollutant levels for O_3, CO, NO_2, PM10, PM2.5, SO_2 (1- and 24-hour), and lead are not exceeded, and all other standards are not equaled or exceeded at any time in any consecutive three-year period.

California Diesel Risk Reduction Plan

CARB identified particulate emissions from diesel-fueled engines (DPM) TACs in August 1998. Following the identification process, CARB was required by law to determine if there is a need for further control, which led to the risk management phase of the program.

For the risk management phase, CARB formed the Diesel Advisory Committee to assist in the development of a risk management guidance document and a risk reduction plan. With the assistance of the Advisory Committee and its subcommittees, CARB developed the *Risk Reduction Plan to Reduce Particulate Matter Emissions from Diesel-Fueled Engines and Vehicles* and the *Risk Management Guidance for the Permitting of New Stationary Diesel-Fueled Engines*. The Diesel Advisory Committee approved these documents on September 28, 2000, paving the way for the next step in the regulatory process: the control measure phase.[28,29]

During the control measure phase, specific Statewide regulations designed to further reduce DPM emissions from diesel-fueled engines and vehicles have and continue to be evaluated and developed. The goal of each regulation is to make diesel engines as clean as possible by establishing state-of-the-art technology requirements or emission standards to reduce DPM emissions.

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27 California Air Resources Board, "Area Designations Maps (State and National)," http://www.arb.ca.gov/desig/adm/adm.htm. 2013. According to California Health and Safety Code, Section 39608, "state board, in consultation with the districts, shall identify, pursuant to subdivision (e) of Section 39607, and classify each air basin which is in attainment and each air basin which is in nonattainment for any state ambient air quality standard." Section 39607(e) states that the State shall "establish and periodically review criteria for designating an air basin attainment or nonattainment for any state ambient air quality standard set forth in Section 70200 of Title 17 of the California Code of Regulations. California Code of Regulations, Title 17, Section 70200 does not include vinyl chloride; therefore, CARB does not make area designations for vinyl chloride.

28 CARB, *Risk Reduction Plan to Reduce Particulate Matter Emissions from Diesel-Fueled Engines and Vehicles.* October 2000.

29 CARB, *Risk Management Guidance for the Permitting of New Stationary Diesel-Fueled Engines.* October 2000.

CARB Air Quality and Land Use Handbook

In April 2005, the California Air Resources Board published the *Air Quality and Land Use Handbook* as an informational and advisory guide for evaluating and reducing air pollution impacts associated with new projects that go through the land use decision-making process. See description in the "Health Studies" section above.

California Air Toxics Program

CARB's Statewide comprehensive air toxics program was established in the early 1980s. The Toxic Air Contaminant Identification and Control Act created California's program to reduce exposure to air toxics. Under the Toxic Air Contaminant Identification and Control Act (Chapter 1047, Statutes of 1983), CARB is required to use certain criteria in the prioritization for the identification and control of air toxics. In selecting substances for review, CARB must consider criteria relating to "the risk of harm to public health, amount or potential amount of emissions, manner of, and exposure to, usage of the substance in California, persistence in the atmosphere, and ambient concentrations in the community" [Health and Safety Code Section 39666(f)]. The Toxic Air Contaminant Identification and Control Act also requires CARB to use available information gathered from the Air Toxics "Hot Spots" Information and Assessment Act program to include in the prioritization of compounds.

California has established a two-step process of risk identification and risk management to address the potential health effects from air toxic substances and protect the public health of Californians.[30] In the first step (identification), CARB and the Office of Environmental Health Hazard Assessment (OEHHA) determine if a substance should be formally identified as a TAC in California. During this process, CARB and the OEHHA staff draft a report that serves as the basis for this determination. CARB staff assesses the potential for human exposure to a substance and the OEHHA staff evaluates the health effects. After CARB and the OEHHA staff hold several comment periods and workshops, the report is then submitted to an independent, nine-member Scientific Review Panel (SRP), which reviews the report for its scientific accuracy. If the SRP approves the report, they develop specific scientific findings, which are officially submitted to CARB. CARB staff then prepares a hearing notice and draft regulation to formally identify the substance as a TAC. Based on the input from the public and the information gathered from the report, the CARB decides whether to identify a substance as a TAC. In 1993, the California Legislature amended the Toxic Air Contaminant Identification and Control Act by requiring CARB to identify 189 federal hazardous air pollutants as State TACs.

30 CARB, *California Air Toxics Program – Background*, December 13, 2017. https://www.arb.ca.gov/toxics/background.htm. Accessed April 3, 2018.

In the second step (risk management), CARB reviews the emission sources of an identified TAC to determine if any regulatory action is necessary to reduce the risk. The analysis includes a review of controls already in place, the available technologies and associated costs for reducing emissions, and the associated risk.

The Air Toxics "Hot Spots" Information and Assessment Act (Health and Safety Code section 44360) supplements the Toxic Air Contaminant Identification and Control Act by requiring a Statewide air toxics inventory, notification of people exposed to a significant health risk, and facility plans to reduce these risks. The program is designated to quantify the amounts of potentially hazardous air pollutants released, the location of the release, the concentrations to which the public is exposed, and the resulting health risks.[31] The "Hot Spots" Act also requires stationary sources that pose a significant health risk to the community to reduce their risk through a risk management plan.

The California Office of Environmental Health Hazard Assessment (OEHHA) published a guidance manual in 2015 to assist the preparation of health risk assessments (HRA) for carcinogenic and non-carcinogenic exposures to air toxics in accordance with the Air Toxics Hot Spots Information and Assessment Act.[32] The 2015 OEHHA HRA guidelines provide methodologies for assessing various types of environmental exposures to toxic contaminants, including inhalation exposures. The 2015 OEHHA HRA guidance relied upon a comprehensive review of the most up-to-date scientific literature to formulate the recommended exposure estimation methodologies. The OEHHA guidance acknowledges that children are especially susceptible to the effects of toxic air contaminant exposure, and incorporated age sensitivity factors (ASFs) and age-specific daily breathing rates (DBRs) to account for the differences in sensitivity to carcinogens during early life exposure. OEHHA recommends a default ASF of 10 for the age range between the third trimester of pregnancy through two years, and an ASF of three for ages two through 15 years.

OEHHA has created a publicly available mapping tool called CalEnviroScreen, which helps identify California communities that are most affected by many sources of pollution, and where people are often especially vulnerable to pollution's effects. CalEnviroScreen uses environmental, health, and socioeconomic information to produce scores for every census tract in the state. The scores are mapped so that different communities can be compared. An area with a high score is one that experiences a much higher pollution burden than areas with low scores. CalEnviroScreen ranks communities based on data

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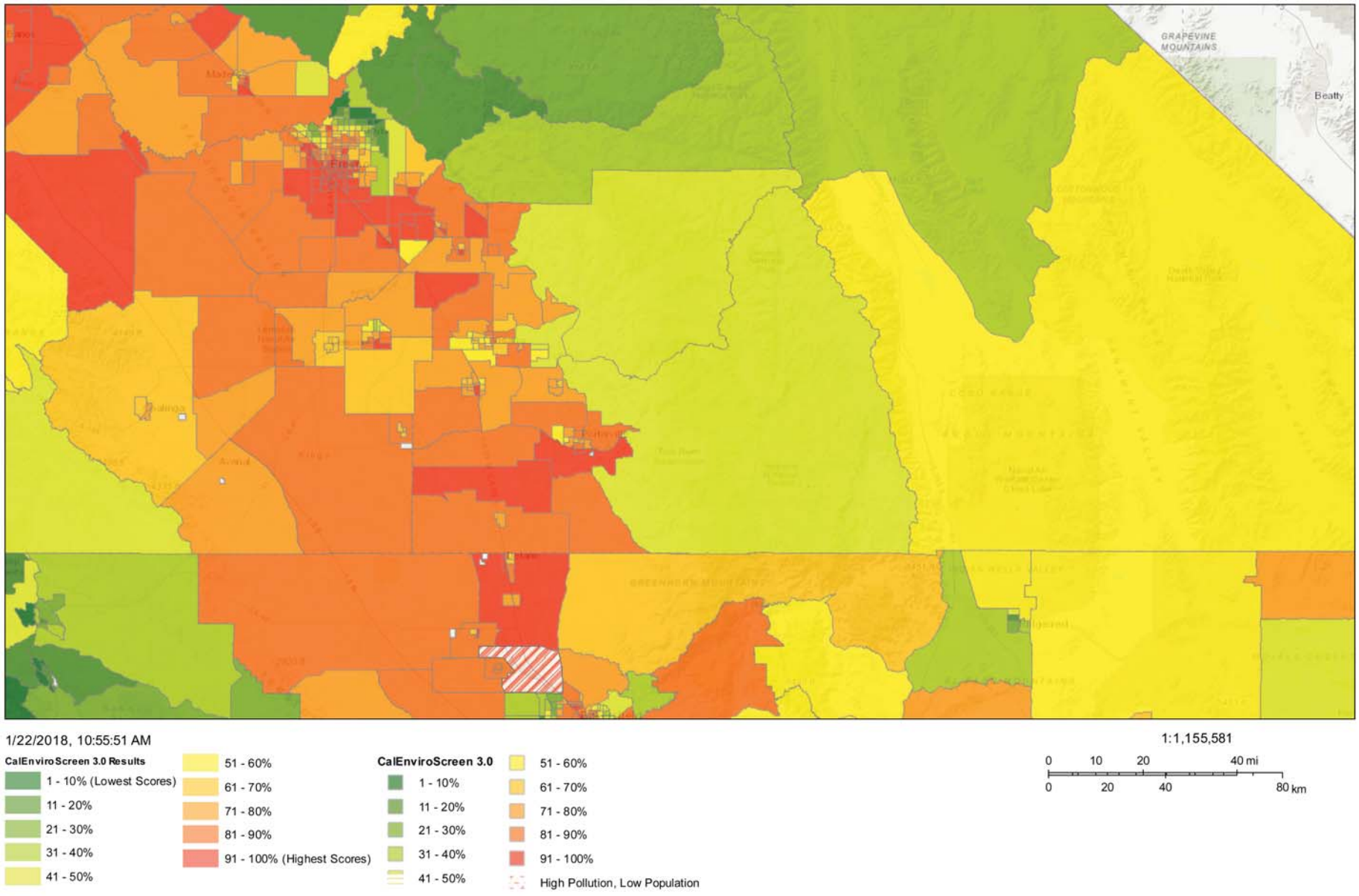
31 CARB. 2016. Overview of the Air Toxics "Hot Spots" Information and Assessment Act. Available online at: https://www.arb.ca.gov/ab2588/overview.htm accessed April 24, 2018.

32 OEHHA, Guidance Manual for Preparation of Health Risk Assessments, *February 2015.*

that are available from state and federal government sources. The OEHHA CalEnviroScreen map for the Tulare County area is presented in **Figure 4.3-2, CalEnviroScreen 3.0 Results**.



SOURCE: OEHHA, CalEnviroScreen 3.0, 2017

FIGURE **4.3-2**

IMPACT SCIENCES

CalEnviroScreen 3.0 Results

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Airborne Toxic Control Measure for Asbestos

In July 2001, CARB approved an Air Toxic Control Measure for construction, grading, quarrying and surface mining operations to minimize emissions of naturally occurring asbestos.[33] The regulation requires application of best management practices to control fugitive dust in areas known to have naturally occurring asbestos and requires notification to the local air district prior to commencement of ground-disturbing activities. The measure establishes specific testing, notification and engineering controls prior to grading, quarrying or surface mining in construction zones where naturally occurring asbestos is located on projects of any size. There are additional notification and engineering controls at work sites larger than one acre in size. These projects require the submittal of a "Dust Mitigation Plan" and approval by the air district prior to the start of a project.

Construction sometimes requires the demolition of existing buildings where construction occurs. Buildings often include materials containing asbestos, but no demolition is associated with this project. However, asbestos is also found in a natural state, known as naturally occurring asbestos. Exposure and disturbance of rock and soil that naturally contain asbestos can result in the release of fibers into the air and consequent exposure to the public. Asbestos most commonly occurs in ultramafic rock that has undergone partial or complete alteration to serpentine rock (serpentinite) and often contains chrysotile asbestos. In addition, another form of asbestos, tremolite, can be found associated with ultramafic rock, particularly near faults. Sources of asbestos emissions include unpaved roads or driveways surfaced with ultramafic rock, construction activities in ultramafic rock deposits, or rock quarrying activities where ultramafic rock is present.

Areas are subject to the regulation if they are identified on maps published by the California Geological Survey (CGS) The measure also applies if ultramafic rock, serpentine, or asbestos is discovered during any operation or activity. Review of the CGS maps shows both ultramafic rock or serpentinite, as well as naturally occurring asbestos within Tulare County. These features are primarily located in the central and western portions of Tulare County, primarily occurring just east of State Route 65 between the City of Porterville and the community of Yokohl Valley.[34]

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33 CARB, *Asbestos ATCM for Surfacing Applications*, June 2015. https://www.arb.ca.gov/toxics/atcm/asbeatcm.htm. Accessed April 8, 2018.

34 California Geological Survey, *Reported Historic Asbestos Mines, Historic Asbestos Prospects, and Other Natural Occurrences of Asbestos in California*, 2011.

4.3.2.3 Ambient Air Quality Standards

A summary of state and federal ambient air quality standards and the effects of the exceedance of these standards on health are shown in **Table 4.3-1, Ambient Air Quality Standards**. For some pollutants, separate standards have been set for different periods. Most standards have been set to protect public health. For some pollutants, standards have been based on other values, such as protection of crops, protection of materials, or avoidance of nuisance conditions.

Table 4.3-1
Ambient Air Quality Standards

Air Pollutant	Concentration/Averaging Time State Standard (CAAQS)	Federal Primary Standard (NAAQS)	Most Relevant Health Effects
Ozone	0.09 ppm (180 μg/m^3), 1-hour. avg. 0.070 ppm (137 μg/m^3), 8-hour avg.	0.070 ppm (137 μg/m^3), 8-hour avg.	(a) Short-term exposures: 1) Pulmonary function decrements and localized lung edema in humans and animals; and 2) Risk to public health implied by alterations in pulmonary morphology and host defense in animals; (b) Long-term exposures: Risk to public health implied by altered connective tissue metabolism and altered pulmonary morphology in animals after long-term exposures and pulmonary function decrements in chronically exposed humans; (c) Vegetation damage; and (d) Property damage
Nitrogen Dioxide[1]	0.18 ppm (339 μg/m^3), 1-hour avg. 0.030 ppm (57 μg/m^3), annual arithmetic mean	100 ppb (188 μg/m^3), 1-hour avg. 0.053 ppm (100 μg/m^3), annual arithmetic mean	(a) Potential to aggravate chronic respiratory disease and respiratory symptoms in sensitive groups; (b) Risk to public health implied by pulmonary and extra-pulmonary biochemical and cellular changes and pulmonary structural changes; and (c) Contribution to atmospheric discoloration
Carbon Monoxide	20 ppm (23 μg/m^3), 1-hour avg. 9.0 ppm (10 μg/m^3), 8-hour avg.	35 ppm (40 μg/m^3), 1-hour avg. 9 ppm (10 μg/m^3), 8-hour avg.	(a) Aggravation of angina pectoris and other aspects of coronary heart disease; (b) Decreased exercise tolerance in persons with peripheral vascular disease and lung disease; (c) Impairment of central nervous system functions; and (d) Possible increased risk to fetuses
Sulfur Dioxide[2]	0.25 ppm (655 μg/m^3), 1-hour. avg. 0.04 ppm (105 μg/m^3), 24-hour avg.	75 ppb (196 μg/m^3), 1-hour avg. No 24-hour avg.	Broncho-constriction accompanied by symptoms, which may include wheezing, shortness of breath and chest tightness, during exercise or physical activity in persons with asthma
Suspended Particulate Matter (PM10)	50 μg/m^3, 24-hour avg. 20 μg/m^3, annual arithmetic mean	150 μg/m^3, 24-hour avg. (not to be exceeded more than once per year on average over three years)	(a) Excess deaths from short-term exposures and exacerbation of symptoms in sensitive patients with respiratory disease; and (b) Excess seasonal declines in pulmonary function, especially in children.

Air Pollutant	Concentration/Averaging Time State Standard (CAAQS)	Federal Primary Standard (NAAQS)	Most Relevant Health Effects
Suspended Particulate Matter (PM2.5)	12 μg/m³, annual arithmetic mean	35 μg/m³, 24-hour avg. 12 μg/m³, annual arithmetic mean	(a) Increased hospital admissions and emergency room visits for heart and lung disease; (b) Increased respiratory symptoms and disease; and (c) Decreased lung functions and premature death.
Lead[3]	1.5 μg/m³, 30-day avg.	1.5 μg/m³, calendar quarter 0.15 μg/m³, three-month rolling average	(a) Increased body burden; and (b) Impairment of blood formation and nerve conduction
Visibility-Reducing Particles	Extinction coefficient of 0.23 per kilometer - visibility of 10 miles or more due to particles when relative humidity is less than 70 percent, 8-hour avg.	None	The statewide standard is intended to limit the frequency and severity of visibility impairment due to regional haze. This is a visibility based standard not a health based standard. Nephelometry and AISI Tape Sampler; instrumental measurement on days when relative humidity is less than 70 percent.
Sulfates	25 μg/m³, 24-hour avg.	None	(a) Decrease in ventilatory function; (b) Aggravation of asthmatic symptoms; (c) Aggravation of cardio-pulmonary disease; (d) Vegetation damage; (e) Degradation of visibility; and (f) Property damage
Hydrogen Sulfide	0.03 ppm (42 μg/m³), 1-hour avg.	None	Odor annoyance
Vinyl Chloride[3]	0.01 ppm (26 μg/m³), 24-hour avg.	None	Highly toxic and a known carcinogen that causes a rare cancer of the liver.

Source: https://www.epa.gov/criteria-air-pollutants/naaqs-table
https://www.arb.ca.gov/research/aaqs/caaqs/caaqs.htm. Accessed March 22, 2018.
μg/m³ = microgram per cubic meter; ppm = parts per million by volume;
NAAQS = National Ambient Air Quality Standards; CAAQS = California Ambient Air Quality Standards

1 *On January 25, 2010, the USEPA promulgated a new 1-hour NO_2 standard. The new 1-hour standard is 0.100 parts per million (188 micrograms per cubic meter [μg/m³]) and became effective on April 12, 2010.*

2 *On June 3, 2010, the USEPA issued a new 1-hour SO_2 standard. The new 1-hour standard is 0.075 parts per million (196 μg/m³). The USEPA also revoked the existing 24-hour and annual standards citing a lack of evidence of specific health impacts from long-term exposures. The new 1-hour standard became effective 60 days after publication in the Federal Register.*

3 *CARB has identified lead and vinyl chloride as "toxic air contaminants" with no threshold level of exposure for adverse health effects determined. These actions allow for the implementation of control measures at levels below the ambient concentrations specified for these pollutants.*

The NAAQS (other than O_3, PM10, PM2.5, and those based on annual averages or arithmetic mean) are not to be exceeded more than once per year. The NAAQS for O_3, PM10, and PM2.5 are based on statistical calculations over one- to three-year periods, depending on the pollutant. The CAAQS are not to be exceeded during a three-year period.

The determination of whether an area meets the state and federal standards is based on air quality monitoring data. Some areas are unclassified, which means there is insufficient monitoring data for determining attainment or nonattainment. Unclassified areas are typically treated as being in attainment.

Because the attainment/nonattainment designation is pollutant specific, an area may be classified as nonattainment for one pollutant and attainment for another. Similarly, because the state and federal standards differ, an area could be classified as attainment for the federal standards of a pollutant and as nonattainment for the state standards of the same pollutant.

Tulare County is located within the San Joaquin Valley Air Basin, where air pollution control authority is vested with the San Joaquin Valley Air Pollution Control District (SJVAPCD). The SJVAPCD boundary is shown in **Figure 4.3-1**. The attainment status of the San Joaquin Valley Air Basin (in which Tulare County is located) for the NAAQS and the CAAQS is summarized in **Table 4.3-2, National and California Ambient Air Quality Standard Designations for the San Joaquin Valley Air Basin**.

Table 4.3-2
National and California Ambient Air Quality Standard Designations for the San Joaquin Valley Air Basin

Pollutant	National Ambient Air Quality Standard Designations San Joaquin Valley Air Basin	California Ambient Air Quality Standard Designations San Joaquin Valley Air Basin
Ozone (O_3) – 1 hour	None	**Nonattainment/Severe**
Ozone (O_3) – 8 hour	**Nonattainment/Extreme**	**Nonattainment**
Carbon Monoxide (CO)	Attainment/Unclassified	Attainment/Unclassified
Nitrogen Dioxide (NO_2)	Attainment/Unclassified	Attainment
Sulfur Dioxide (SO_2)	Attainment/Unclassified	Attainment
Respirable Particulate Matter (PM10)	Attainment	**Nonattainment**
Fine Particulate Matter (PM2.5)	**Nonattainment**	**Nonattainment**
Lead (Pb)	No Designation/Classification	Attainment
Hydrogen Sulfide	No Federal Standard	Unclassified
Sulfates	No Federal Standard	Attainment
Visibility Reducing Particles	No Federal Standard	Unclassified
Vinyl chloride	No Federal Standard	Attainment

Source: SJVAPCD. http://www.valleyair.org/aqinfo/attainment.htm. Accessed April 18, 2018.

4.3.2.4 Ambient Air Monitoring

CARB has established and maintains a network of sampling stations in conjunction with local air pollution control districts (APCDs) and air quality management districts (AQMDs), private contractors, and the National Park Service. The monitoring station network provides air quality monitoring data, including real-time meteorological data and ambient pollutant levels, as well as historical data. The

network in the County consists of 5 monitoring stations. Air quality-monitoring sites located throughout Tulare County are also shown above in **Figure 4.3-1**. **Table 4.3-3, Ambient Air Quality in Tulare County – California and National Standards,** presents the measured ambient pollutant concentrations and the exceedances of state and federal standards that have occurred at the above-mentioned monitoring stations from 2014 through 2016, the most recent years for which data are available.

4.3.2.3 Regional

San Joaquin Valley Air Pollution Control District

The SJVAPCD is the agency responsible for monitoring and regulating air pollutant emissions from stationary, area, and indirect sources within Tulare County and throughout the SJVAB. The SJVAPCD also has responsibility for monitoring air quality and setting and enforcing limits for stationary source emissions. The SJVAPCD issues authorities to construct and permits to operate for modified and new stationary sources; this permitting program is integrated with the federal Clean Air Act Title V federal permitting program for "major" sources of emissions.

CARB is the agency with the legal responsibility for regulating mobile source emissions. SJVAPCD is precluded from such activities under state law.

The SJVAPCD was formed in mid-1991 and prepared and adopted the San Joaquin Valley Air Quality Attainment Plan (AQAP), dated January 30, 1992, in response to the requirements of the California Clean Air Act (CCAA). The AQAPwas revised in June 2005. The CCAA requires each non-attainment district to reduce pertinent air contaminants by at least 5 percent per year until new, more stringent, state air quality standards are met.

The SJVAPCD currently maintains plans for ozone, PM10 and PM2.5. The air district has developed a new plan for EPA's revoked 1997 1-hour ozone standard. Although EPA approved the District's 2004 plan for the 1-hour ozone standard in 2010, EPA withdrew this approval as the result of litigation. The District's 2013 Plan for the Revoked 1-Hour Ozone Standard was approved by the District Governing Board at a public hearing on September 19, 2013. The modeling confirms that the Valley will attain the revoked 1-hour ozone standard by 2017. [35]

[35] San Joaquin Valley Air Pollution Control District (SJVAPCD). 2012. 2013 Plan for the Revoked 1-Hour Ozone Standard. Available online at: http://valleyair.org/Air_Quality_Plans/Ozone-OneHourPlan-2013.htm, accessed on April 25, 2018.

Table 4.3-3
Ambient Air Quality in Tulare County – California and National Standards

CARB Air Monitoring Station	Number of Days Exceeding CAAQS			Maximum 24-Hour Concentration State (ppm or µg/m3)			Number of Days Exceeding NAAQS			Maximum 24-Hour Concentration National (ppm or µg/m3)		
	2014	2015	2016	2014	2015	2016	2014	2015	2016	2014	2015	2016
1-Hour Ozone												
Porterville 1839 Newcomb Street	0	4	9	0.085	0.100	0.106	0	0	0	0.085	0.100	0.106
Sequoia and Kings Canyon National Park	8	12	13	0.104	0.109	0.108	0	0	0	0.104	0.109	0.108
Sequoia National Park Lower Kaweah	2	2	6	0.109	0.098	0.103	0	0	0	0.109	0.098	0.103
Visalia North Church Street	1	9	1	0.095	0.110	0.098	0	0	0	0.095	0.110	0.098
8-Hour Ozone												
Porterville 1839 Newcomb Street	5	42	81	0.075	0.091	0.093	4	41	80	0.074	0.091	0.092
Sequoia and Kings Canyon National Park	88	69	91	0.092	0.091	0.096	81	67	87	0.091	0.090	0.096
Sequoia National Park Lower Kaweah	62	45	70	0.094	0.086	0.093	61	43	64	0.093	0.086	0.092
Visalia North Church Street	27	52	19	0.080	0.091	0.083	25	49	18	0.079	0.090	0.083
CO												
No data.												
1-Hour NOx												
Visalia North Church Street	0	0	0	0.064	0.062	0.057	0	0	0	64.5	62.3	57.5
SOx (sulfur oxides)												
No data.												
24-Hour PM2.5												
Porterville 1839 Newcomb Street	*	*	*	78.2	82.6	63.9	*	*	*	*	*	*
Visalia North Church Street	*	*	*	85.9	91.5	53.9	35.5	17.9	21.3	81.6	86.3	48.0
24-Hour PM10												
Visalia North Church Street	17	67	95	104.2	140.3	132.5	0	0	0	102.4	67.3	137.1

** Insufficient data.*
Source: CARB. Top 4 Measurements and Days Above the Standard. http://www.arb.ca.gov/adam/index.html. Accessed March 22, 2018.

The most recent 8-hour ozone plan was adopted June 16, 2016.[36] The plan addresses federal mandates related to the 2008 8-hour ozone NAAQS. This plan demonstrates that SJVAPCD regulatory measures meet and exceed federal Clean Air Act (CAA) requirements, includes additional commitments for potential further reductions in emissions, and ensures expeditious attainment of the 2008 8-hour ozone standard by December 31, 2031.

The air district has achieved the NAAQS for PM10, but produced a maintenance plan in 2007 which remains in effect.[37] On September 15, 2016, CARB approved the air district's 2016 Moderate Area Plan for the 2012 PM2.5 Standard.[38] The Moderate Area Plan sets out the strategy to attain the federal 2012 PM2.5 federal annual air quality standard of 12 $\mu g/m^3$ by 2021.

Guidance for Assessing and Mitigating Air Quality Impacts

The SJVAPCD *Guidance for Assessing and Mitigating Air Quality Impacts* (*GAMAQI*) is an advisory document that provides lead agencies, consultants, and project applicants with uniform procedures for addressing air quality in environmental documents. Local jurisdictions are not required to use the methodology outlined therein. The *GAMAQI* describes the criteria that the SJVAPCD uses when reviewing and commenting on the adequacy of environmental documents. It recommends thresholds for determining whether projects would have significant adverse environmental impacts, identifies methodologies for predicting project emissions and impacts, and identifies measures that can be used to avoid or reduce air quality impacts. The *GAMAQI* includes guidance for analysis for criteria pollutants, particulates, and odors for both construction and operations of a project.[39]

Regulation VIII Fugitive PM10 Prohibitions

The SJVAPCD Rules and Regulations include Regulation VIII Fugitive PM10 Prohibitions, which was developed to reduce ambient concentrations of fine particulate matter (PM10) by developing rules to control specified anthropogenic fugitive dust sources. The rules were developed pursuant to the USEPA guidance for Serious PM10 Nonattainment Areas. Regulation VIII has seven rules aimed at controlling fugitive dust from specific sources, which include construction and other earthmoving activities, carryout

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36 SJVAPCD, *2016 Ozone Plan for 2008 8-Hour Ozone Standard,* June 2016. http://www.valleyair.org/Air_quality_Plans/Ozone-Plan-2016/Adopted-Plan.pdf

37 SJVAPCD, *2007 PM10 Maintenance Plan and Request for Redesignation,* September 2007. http://www.valleyair.org/Air_Quality_Plans/docs/Maintenance%20Plan10-25-07.pdf.

38 SJVAPCD, *2016 Moderate Area Plan for the 2012 PM2.5 Standard,* September 2016. http://www.valleyair.org/Air_Quality_Plans/docs/PM25-2016/2016-Plan.pdf

39 SJVAPCD. 2015. *Guidance for Assessing and Mitigating Air Quality Impacts*. Available online at: http://www.valleyair.org/transportation/GAMAQI_3-19-15.pdf, accessed April 25, 2018.

and trackout, open areas, paved and unpaved roads, and unpaved equipment traffic areas. In most cases, the rules primarily aim to reduce the speed and amount of traffic traveling over unstabilized dirt or otherwise dusty surfaces. This is generally done by either reducing the amount of dusty areas or by restricting traffic in dusty areas. [40]

Regulation VIII identifies general requirements (Rule 8011), as well as those for construction, demolition excavation, extraction, and other earthmoving activities (Rule 8021), bulk materials (Rule 8031), carryout and trackout (Rule 8041), open areas (Rule 8051), paved and unpaved roads (Rule 8061), unpaved vehicle/equipment traffic areas (Rule 8071), and agricultural sources (Rule 8081). Rule 8011 General Requirements are as follows:

- Materials used for chemical/organic stabilization of soils, including petroleum resins, asphaltic emulsions, acrylics, and adhesives shall not violate State Water Quality Control Board standards for use as a soil stabilizer. Materials accepted by the California Air Resources Board (CARB) and the United States Environmental Agency (EPA), and which meet State water quality standards, shall be considered acceptable to the Air Pollution Control Officer (APCO).

- Any material prohibited for use as dust suppressant by EPA, CARB, or other applicable law, rule, or regulation is also prohibited under Regulation VIII.

- Use of hygroscopic materials may be prohibited by the APCO in areas lacking sufficient atmospheric moisture of soil for such materials to effectively reduce fugitive dust emissions. The atmospheric moisture of soil is considered to be sufficient if it meets the application specifications of the hygroscopic product manufacturer. Use of such materials may be approved in conjunction with sufficient wetting of the controlled area.

- Any use of dust suppressants or gravel pads, and paving materials such as asphalt or concrete for paving, shall comply with other applicable District Rules.

4.3.2.4 Local

General plans may contain policies applicable to air quality. The following discusses policies from the Tulare County General Plan that are applicable to air quality.

Tulare County General Plan[41]

- **AQ-1.1 Cooperation with Other Agencies:** The County shall cooperate with other local, regional, federal, and State agencies in developing and implementing air quality plans to achieve State and federal Ambient Air Quality Standards. The County shall partner with the SJVAPCD, Tulare County

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40 SJVAPCD. Current District Rules and Regulations. Available online at: http://www.valleyair.org/rules/1ruleslist.htm#reg8, accessed April 25, 2018.

41 Tulare County. Chapter 9 Air Quality, Tulare County General Plan 2030 Update. Pages 9-7 to 9-11. August 2012.

Association of Governments (TCAG), the California Air Resources Board to achieve better air quality conditions locally and regionally.

- **AQ-1.2 Cooperation with Local Jurisdictions:** The County shall participate with cities, surrounding counties, and regional agencies to address cross-jurisdictional transportation and air quality issues.

- **AQ-1.3 Cumulative Air Quality Impacts:** The County shall require development to be located, designed, and constructed in a manner that would minimize cumulative air quality impacts. Applicants shall be required to propose alternatives as part of the State CEQA process that reduce air emissions and enhance, rather than harm, the environment.

- **AQ-1.4 Air Quality Land Use Compatibility:** The County shall evaluate the compatibility of industrial or other developments which are likely to cause undesirable air pollution with regard to proximity to sensitive land uses, and wind direction and circulation in an effort to alleviate effects upon sensitive receptors.

- **AQ-1.5 California Environmental Quality Act (CEQA) Compliance:** The County shall ensure that air quality impacts identified during the CEQA review process are consistently and reasonable mitigated when feasible.

- **AQ-1.6 Purchase of Low Emissions/Alternative Fuel Vehicles:** The County shall encourage County departments and agencies to replace existing vehicles with low emission/alternative fuel vehicles as appropriate.

- **AQ-1.7 Support Statewide Climate Change Solutions:** The County shall monitor and support the efforts of Cal/EPA, CARB, and the SJVAPCD, under AB 32 (Health and Safety Code §38501 *et seq*.), to develop a recommended list of emission reduction strategies. As appropriate, the County will evaluate each new project under the updated General Plan to determine its consistency with the emission reduction strategies.

- **AQ-1.8 Greenhouse Gas Emissions Reduction Plan/Climate Action Plan:** The County will develop a Greenhouse Gas Emissions Reduction Plan (Plan) that identifies the GHG emissions within the County as well as ways to reduce those emissions. The Plan will incorporate the requirements adopted by the California Air Resources Board specific to this issue. In addition, the County will work with the Tulare County Association of Governments and other applicable agencies to include the following key items in the regional planning efforts.

    1. Inventory all known, or reasonably discoverable, sources of greenhouse gases in the County,
    2. Inventory the GHG emissions in the most current year available, and those projected for year 2020, and
    3. Set a target for the reduction of emissions attribute to the County's discretionary land use decisions and its own internal government operations.

- **AQ-1.9 Support Off-Site Measures to Reduce Greenhouse Gas Emissions:** The County will support and encourage the use of off-site measures or the purchase of carbon offsets to reduce GHG emissions.

- **AQ-1.10 Alternative Fuel Vehicle Infrastructure:** County shall support the development of necessary facilities and infrastructure needed to encourage the use of low or zero-emission vehicles (e.g., electric vehicle charging facilities and conveniently located alternative fueling stations, including CNG filling stations).

- **AQ-2.1 Transportation Demand Management Programs:** The County shall coordinate and provide support for County Transportation Demand Management programs with other public and private agencies, including programs developed by the TCAG and the SJVAPCD.

- **AQ-2.2 Indirect Source Review:** The County shall require major development projects, as defined by the SJVAPCD, to reasonably mitigate air quality impacts associated with the project. The County shall notify developers of SJVAPCD Rule 9510 – Indirect Source Review requirements and work with SJVAPCD to determine mitigations, as feasible, that may include, but are not limited to the following:

    1. Providing bicycle access and parking facilities,
    2. Increasing density,
    3. Encouraging mixed use development,
    4. Providing walkable and pedestrian-oriented neighborhoods,
    5. Providing increased access to public transportation,
    6. Providing preferential parking for high-occupancy vehicles, car pools, or alternative fuels vehicles, and
    7. Establishing telecommuting programs or satellite work centers.

- **AQ-2.3 Transportation and Air Quality:** When developing the regional transportation system, the County shall work with TCAG to comprehensively study methods of transportation which may contribute to a reduction in air pollution in Tulare County. Some possible alternatives that should be studied are:

    1. Commuter trains (Light Rail, Amtrak, or High Speed Rail) connecting with Sacramento, Los Angeles, and San Francisco, with attractive services scheduled up and down the Valley,
    2. Public transportation such as buses and light rail, to serve between communities of the Valley, publicly subsidized if feasible,
    3. Intermodal public transit such as buses provided with bicycle racks, bicycle parking at bus stations, bus service to train stations and airports, and park and ride facilities, and
    4. Community transportation systems supportive of alternative transportation modes, such as cycling or walking trails, with particular attention to high-density areas.

- **AQ-2.4 Transportation Management Associations:** The County shall encourage commercial, retail, and residential developments to participate in or create Transportation Management Associations (TMAs) that may assist in the reduction of pollutants through strategies that support carpooling or other alternative transportation modes.

- **AQ-2.5 Ridesharing:** The County shall continue to encourage ridesharing programs such as employer-based rideshare programs.

- **AQ-3.1 Location of Support Services:** The County shall encourage the location of ancillary employee services (including, but not limited to, child care, restaurants, banking facilities, convenience markets) near major employment centers for the purpose of reducing midday vehicle trips.

- **AQ-3.2 Infill Near Employment:** The County shall identify opportunities for infill development projects near employment areas within all unincorporated communities and hamlets to reduce vehicle trips.

- **AQ-3.3 Street Design:** The County shall promote street design that provides an environment which encourages transit use, biking, and pedestrian movements.

- **AQ-3.4 Landscape:** The County shall encourage the use of ecologically based landscape design principles that can improve local air quality by absorbing CO_2, producing oxygen, providing shade, that reduces energy required for cooling, and filtering particulates. These principles include, but are not limited to, the incorporation of parks, landscaped medians, and landscaping within development.

- **AQ-3.5 Alternative Energy Design:** The County shall encourage all new development, including rehabilitation, renovation, and redevelopment, to incorporate energy conservation and green building practices to maximum extent feasible. Such practices include, but are not limited to: building orientation and shading, landscaping, and the use of active and passive solar heating and water systems.

- **AQ-3.6 Mixed Land Uses:** The County shall encourage the clustering of land uses that generate high trip volumes, especially when such uses can be mixed with support services and where they can be served by public transportation.

- **AQ-4.1 Air Pollution Control Technology:** The County shall utilize the BACM and RACM as adopted by the County to support SJVAPCD air quality attainment plans to achieve and maintain healthful air quality and high visibility standards. These measures shall be applied to new development approvals and permit modifications as appropriate.

- **AQ-4.2 Dust Suppression Measures:** The County shall require developers to implement dust suppression measures during excavation, grading, and site preparation activities consistent with SJVAPCD Regulation VIII – Fugitive Dust Prohibitions. Techniques may include, but are not limited to, the following:

    1. Site watering or application of dust suppressants,
    2. Phasing or extension of grading operations,
    3. Covering of stockpiles,
    4. Suspension of grading activities during high wind periods (typically winds greater than 25 miles per hour), and
    5. Revegetation of graded areas.

- **AQ-4.3 Paving or Treatment of Roadways for Reduced Air Emissions:** The County shall require that all new roads be paved or treated to reduce dust generation where feasible as required by SJVAPCD Regulation VIII, Rule 8061 – Paved and Unpaved Roads. For new projects with unpaved roads, funding for roadways maintenance shall be adequately addressed and secured.

- **AQ-4.4 Wood Burning Devices:** The County shall require the use of natural gas where service is available or the installation of low-emission, EPA-certified fireplace inserts in all open hearth fireplaces in new homes as required under the SJVAPCD Rule 4901 – Woodburning Fireplaces and Woodburning Heaters. The County shall promote the use of natural gas over wood products in space heating devices and fireplaces in all existing and new homes.

- **AQ-4.5 Public Awareness:** The County shall promote public awareness of the seriousness and extent of the existing air quality problems.

- **AQ-4.6 Asbestos Airborne Toxic Control and Dust Protection:** Asbestos is of concern to Tulare County because it occurs naturally in surface deposits of several types of ultramafic materials (materials that contain magnesium and iron and a very small amount of silica). Asbestos emissions can result from the sale of use of asbestos-containing materials, road surfacing with such materials, grading activities, and surface mining. See Implementation Measure 15.

4.3.3 ENVIRONMENTAL IMPACTS

4.3.3.1 Thresholds of Significance

Consistent with Appendix G of the *State CEQA Guidelines*, implementation of the proposed 2018 RTP/SCS would result in significant impacts related to air quality, if any of the following would occur:

- Conflict with or obstruct implementation of the applicable air quality plan.

- Violate any air quality standard or contribute substantially to an existing or projected air quality violation.

- Result in a cumulatively considerable net increase of any criteria pollutant for which the project region is nonattainment under an applicable federal or state ambient air quality standard (including releasing emissions which exceed quantitative guidelines for ozone precursors).

- Expose sensitive receptors to substantial pollutant concentrations.

- Create objectionable odors affecting a substantial number of people.

As mentioned above, the SJVAPCD's 2015 *Guide for Assessing and Mitigating Air Quality Impacts* (GAMAQI) includes significance criteria for evaluating construction and operational-phase emissions from direct and indirect sources associated with a project. Indirect sources include motor vehicle traffic resulting from the project and do not include stationary sources covered under permit with the SJVAPCD. However, SJVAPCD recommended thresholds are presented below to further illustrate potential impacts of both construction and operation. For the 2018 RTP/SCS analysis, the following thresholds are used to determine significance:

- Projected short-term emissions of criteria pollutants (construction of transportation projects and projected development) are considered significant if they would result in substantial criteria pollutant

emissions; projected long-term emissions of criteria pollutants are considered significant if they are substantially greater than current emission levels; or, if any recommended threshold from the SJVAPCD listed in **Table 4.3-4** is exceeded. This threshold encompasses the second and third Appendix G criteria listed above (air quality standards violations and increases in criteria pollutants, (Impact AIR-1)

- Projected long-term emissions of toxic air contaminants (diesel particulate matter from heavy-duty diesel trucks and other emissions from industrial activities) are considered significant if they would be greater than current emission levels; localized concentrations of toxic air contaminants at sensitive receptors (short-term and/or long-term) are considered significant if they would exceed existing conditions or exceed SJVAPCD significance thresholds. (Impact AIR-2)

- Projected long-term emissions from all sources (stationary and mobile) are considered significant if they are not consistent with the applicable air quality management plans and state implementation plans. (Impact AIR-3)

Table 4.3-4
SJVAPCD Air Quality Thresholds of Significance – Criteria Pollutants

	Construction Emissions	Operational Emissions	
		Permitted Equipment and Activities	Non-Permitted Equipment and Activities
Pollutant/Precursor	Emissions (Tons per Year)	Emissions (Tons per Year)	Emissions (Tons per Year)
CO	100	100	100
NOx	10	10	10
ROG	10	10	10
SOx	27	27	27
PM10	15	15	15
PM2.5	15	15	15

Source: SJVAPCD, Air Quality Thresholds of Significance – Criteria Pollutants, March 2015.

4.3.3.2 Methodology

This section summarizes the methodology used to evaluate the impacts of implementation of the Plan on air quality.

Short-Term Emissions Methodology

For construction impacts, the pollutant of greatest concern to the District is PM10. The SJVAPCD's approach to CEQA analyses of construction PM10 impacts is to require implementation of effective and comprehensive control measures in addition to quantification of emissions. Because it is not feasible to

predict construction emissions from all of the future transportation and land use projects included in the RTP/SCS, the construction analysis will focus on the comprehensive control measures for each proposed project. PM10 emitted during construction can vary greatly depending on the level of activity, the specific operations taking place, the equipment being operated, local soils, weather conditions, and other factors, making quantification difficult. Despite this variability in emissions, compliance with Regulation VIII and implementation of appropriate mitigation measures to control respirable PM10 emissions are considered by the SJVAPCD to be sufficient to render a project's construction-related PM10 impacts less-than-significant. The SJVAPCD GAMAQI contains a list of feasible control measures for construction-related PM10 emissions.

Long-Term Emissions Methodology

The methodology for determining the significance of air quality impacts compares existing conditions to the 2018 RTP/SCS conditions in the year 2042, as required in CEQA Section 15126.2(a). The project's long-term impacts to air quality are considered significant if the project results in mobile source emissions that significantly exceed existing levels or exceed SJVAPCD thresholds. In this case, the pollutants of concern are ozone precursors (NOx and ROG) and fine particulate matter, as these are the primary pollutants associated with vehicle transportation.

Projected air emissions from mobile sources were calculated using EMFAC2014 emissions factors and multiplied by VMT. The projected VMT were revised by applying off model adjustments to capture reductions in VMT not reflected in the transportation modeling. This adjusted VMT was then entered into the EMFAC 2014 model. The EMFAC emissions factors are established by the California Air Resources Board and accommodate certain mobility assumptions (e.g., vehicle speed, delay times, average trip lengths, and total travel time). Projected vehicle emissions on the TCAG transportation network for the year 2042 under the 2018 RTP/SCS were compared with State Implementation Plan (SIP) emissions budgets. If countywide mobile source ROG or NOx emissions associated with the RTP/SCS do not significantly exceed the SIP budgets, impacts to long-term air quality from mobile source emissions are not considered significant.

Implementation of the RTP/SCS could create both short-term and long-term impacts to air quality. Short-term air quality impacts would be generated during construction of the capital improvements listed in the 2018 RTP/SCS as well as future development facilitated by the SCS land use pattern. Long term emissions would be generated by on-road vehicles which would utilize the transportation improvements, and the land uses proposed, as well as from area and stationary sources, including energy use, associated with new development, and off-road vehicles.

Determination of Significance

The methodology for determining the significance of air quality impacts compares existing air quality to the future air quality under the Plan. The significance thresholds above were applied to compare criteria pollutant emissions generated by the future (2042) Plan conditions to the significance criteria.

Implementation of the 2018 RTP/SCS would generate criteria pollutant emissions in Tulare County. The analysis of these impacts is programmatic and at the regional level. The Plan would result in air quality impacts as a result of criteria pollutant emissions generated by construction of transportation projects and development and operation of the regional transportation system. Project-specific impacts vary and appropriate mitigation measures would need to be developed on a project-by-project basis, as appropriate.

4.3.3.3 Impacts and Mitigation Measures

Each applicable threshold of significance is listed below, followed by analysis of the significance of impacts and the identification of mitigation measures that would lessen or avoid significant impacts. Finally, the significance of impacts after implementation of all identified mitigation measures is presented.

Impact AIR-1 **Violate any air quality standard or contribute substantially to an existing or projected air quality violation. Projected short-term emissions of criteria pollutants (construction of transportation projects and projected development) are considered to be significant if they would result in substantial criteria pollutant emissions. Projected long-term emissions of criteria pollutants are considered significant if they are substantially greater than current emission levels or exceed SJVAPCD significance thresholds.**

Short-Term Emissions

Implementation of the 2018 RTP/SCS would result in construction of roadways and other transportation projects as well as general construction as part of regional growth. These construction activities would result in short-term emissions of air pollutants including ROG, NOx, PM10, PM2.5 and fugitive dust. The sources associated with these emissions include construction equipment, employee and vendor vehicles, demolition, grading and other ground-disturbing activities, application of paint and other coatings, paving, and others. The level of emissions is generally proportional to the size of the construction project, with larger projects typically resulting in larger emissions during construction. Although individual projects may or may not exceed the significance thresholds listed in **Table 4.3-4**, it is

unlikely that countywide construction emissions would be less than the SJVAPCD thresholds listed in **Table 4.3-4**. However, individual projects would need to conduct their own environmental analysis, and each of these projects would need to compare construction emissions with the thresholds listed in **Table 4.3-4.**

The SJVAPCD provides a suggested list of project-specific mitigation measures for construction sites in Tulare County. These measures are primarily aimed at reducing fugitive dust. SJVAPCD indicates that projects complying with district Regulation VIII – Fugitive PM10 Prohibitions would have a less than significant impact on local air quality. The SJVAPCD also indicates that large construction projects may exceed the annual significance thresholds, and to contact them for recommendations for analysis of large construction projects.

Construction projects (both transportation and development) associated with the 2018 RTP/SCS would comply with Regulation VIII, which would reduce construction emissions. However, given the unknown scale of construction over the 24-year period covered by the 2018 RTP/SCS, it is possible that criteria pollutant emissions could exceed the annual SJVAPCD significance thresholds listed in **Table 4.3-4**. In addition, increased dust from construction activities could increase the number of cases of Valley Fever. Consequently, short-term emissions resulting from construction would have a significant impact.

Construction impacts would be significant and unavoidable. Mitigation is required. **Mitigation Measure MM-AIR-1(a)** would reduce impacts, but not below a level of significance.

Long-Term Residential and Commercial Land Use Emissions

The development of new residential and commercial land uses as part of the 2018 RTP/SCS would result in increased emissions from area sources, energy use, waste management, and water use. Examples of this type of emissions includes the use of cleaning products, commercial and residential natural gas usage, electricity generation for residential and commercial lighting and electronic devices, water conveyance and treatment, and gases emitted by landfills. Although this type of emission will be analyzed on a project by project basis, it can conservatively be assumed that the increase in residential and commercial buildings and related increase in population under the 2018 RTP/SCS would result in an increase in emissions related to these types of sources. As a result, it can be assumed that these emissions will exceed existing conditions. Consequently, long term emissions from these land uses would result in a significant impact.

Implementation of **Mitigation Measures MM-AIR-1(a), MM-EN-1(a)** and **MM-GHG-1(a)** would reduce the 2018 RTP/SCS contribution to long-term residential and commercial land use emission impacts; however, the 2018 RTP/SCS's contribution to these impacts would remain significant and unavoidable.

Long-Term Transportation Emissions

Emissions of criteria pollutants from mobile sources would be affected by implementation of the 2018 RTP/SCS. In order to analyze the net impact of implementation, existing year (2017) emissions were compared to buildout year (2042) emissions for the 2018 RTP/SCS. The emissions reported are for all mobile sources in Tulare County.

Results of modeling are presented in **Table 4.3-5, Criteria Pollutant Emissions from Mobile Sources**. As shown, there are large reductions of ROG, NOx, and CO. These would be considered beneficial impacts. This is primarily due to the model assumption that vehicles in the future year scenarios will be cleaner burning than existing conditions.. Emissions of SOx decreased slightly as well as PM2.5. Emissions of PM10 from mobile sources would increase slightly under the 2018 RTP/SCS, but remain below the SJVAPCD significance threshold. As compared to existing, all emissions in 2042 would decrease with the exception of PM10, which would slightly increase.

Table 4.3-5
Criteria Pollutant Emissions from Mobile Sources

	Tons/Day					
Scenario	**ROG**	**NOx**	**CO**	**PM10**	**PM2.5**	**SOx**
Existing 2017	3.37	10.42	24.60	0.74	0.35	0.06
2018 RTP/SCS 2042	0.99	2.89	6.54	0.75	0.30	0.04
2018 RTP Net (2018 RTP/SCS - Existing)	-2.38	-7.52	-18.06	0.01	-0.05	-0.02
2018 RTP/SCS Net (Extrapolated to Tons/Year)	-868.70	-2,748.45	-6,591.90	3.65	-18.25	-7.30
SJVAPCD Threshold (tpy)	10	10	100	15	15	27
Exceed Threshold?	No	No	No	No	No	No
No Project 2042	0.99	2.91	6.60	0.75	0.30	0.04
No Project Net (No Project 2042 – Existing)	-2.38	-7.51	-18.00	0.01	-0.05	-0.02
2018 RTP/SCS Net (Extrapolated to Tons/Year)	-868.70	-2,741.15	-6,570.00	3.65	-18.25	-7.30
SJVAPCD Threshold (tpy)	10	10	100	15	15	27
Exceed Threshold?	No	No	No	No	No	No

Source: TCAG, 2018 based on EMFAC 2014 modeling.

PM10 emissions under the 2018 RTP/SCS would increase approximately one percent. As VMT increases so does entrained roadway PM10 and PM2.5. The Plan would increase total VMT when compared to

existing conditions and therefore entrained roadway PM10 and PM2.5 would increase. However, stringent emissions controls would reduce exhaust emissions of PM10 and PM2.5.

A conformity analysis was prepared for the 2018 RTP/SCS that analyzed emissions of ozone precursors (ROG and NOx), CO, PM10 and PM2.5 compared to the approved emissions budgets for mobile sources in Tulare County.[42] The conformity analysis found that emissions of all pollutants passed the applicable conformity tests, and that TCAG is therefore in conformity with the SIP. SIPs, as described above under the **Subsection 4.3.2, Regulatory Framework**, are regional plans to attain the federal standards. This indicates that the 2018 RTP/SCS mobile source emissions would not exceed state or federal emissions limits designed to achieve ambient air quality standards for any pollutants, including PM10. In sum, while there is a small increase in PM10 under the Plan it is not a substantial increase and would not inhibit the County's progress toward attainment status for PM10. Therefore, and because this increase is well below the SJVAPCD significance threshold for PM10, long-term mobile source emissions impacts are considered less than significant.

Level of Significance Before Mitigation

Short-term emissions: Significant.

Long-term residential and commercial land use emissions: Significant.

Long-term transportation emissions: Less than significant.

Mitigation Measures

MM-AIR-1(a): Consistent with the provisions of Section 15091 of the *State CEQA Guidelines*, TCAG has identified mitigation measures capable of avoiding or reducing the significant effects regarding construction emissions that are within the jurisdiction and responsibility of local agencies (land use projects) and implementing agencies (transportation projects) . Where the Lead Agency has identified that a project has the potential for significant effects, the Lead Agency can and should consider mitigation measures to minimize reduce construction emissions below SJVAPCD construction emissions thresholds. Such measures include, but are not limited to, the following:

- Prepare a plan for approval by the SJVAPCD demonstrating that the heavy-duty (equal to or greater than 50 horsepower) off-road equipment to be used in the construction project, including owned, leased and subcontractor vehicles, will achieve a project wide fleet-average 20 percent NOx reduction and 45 percent

42 2018 Tulare County Regional Transportation Plan/Sustainable Communities Strategy. Appendix 41.

particulate reduction compared to the most recent CARB fleet average at time of construction. A Construction Mitigation Calculator (MS Excel) may be downloaded from the Sacramento Metropolitan Air Quality Management District (SMAQMD) web site to perform the fleet average evaluation (http://www.airquality.org/businesses/ceqa-land-use-planning/mitigation).
Acceptable options for reducing emissions may include use of late model engines, low-emission diesel products, alternative fuels, engine retrofit technology (Carl Moyer Guidelines), after-treatment products, voluntary offsite mitigation projects, provide funds for air district off-site mitigation projects, and/or other options as they become available. The air district should be contacted to discuss alternative measures.

- Ensure that all construction equipment is properly tuned and maintained.
- Minimize idling time to 5 minutes – saves fuel and reduces emissions.
- Provide an operational water truck on-site at all times. Apply water to control dust as needed to prevent dust impacts off-site.
- Utilize existing power sources (e.g., power poles) or clean fuel generators rather than temporary power generators.
- Develop a traffic plan to minimize traffic flow interference from construction activities. The plan may include advance public notice of routing, use of public transportation, and satellite parking areas with a shuttle service. Schedule operations affecting traffic for off-peak hours. Minimize obstruction of through-traffic lanes. Provide a flag person to guide traffic properly and ensure safety at construction sites.
- As appropriate, require that portable engines and portable engine-driven equipment units used at the project work site, with the exception of on-road and off-road motor vehicles, obtain CARB Portable Equipment Registration with the state or a local district permit. Arrange appropriate consultations with the CARB or the District to determine registration and permitting requirements prior to equipment operation at the site. Minimize land disturbance.
- Suspend grading and earth moving when wind gusts exceed 25 miles per hour unless the soil is wet enough to prevent dust plumes.
- Cover trucks when hauling dirt.
- Stabilize the surface of dirt piles if not removed immediately.
- Limit vehicular paths on unpaved surfaces and stabilize any temporary roads.
- Minimize unnecessary vehicular and machinery activities.
- Sweep paved streets at least once per day where there is evidence of dirt that has been carried on to the roadway.

- Revegetate disturbed land, including vehicular paths created during construction to avoid future off-road vehicular activities.
- On Caltrans projects, Caltrans Standard Specifications 10-Dust Control, 17-Watering, and 18-Dust Palliative shall be incorporated into project specifications.
- An asbestos dust mitigation plan shall be prepared for projects suspected to be located on or near soils which may contain naturally occurring asbestos.
- Prohibition of any rock crushing activity where materials may contain asbestos.

Level of Significance After Mitigation

Short-term emissions: Because this PEIR evaluates impacts at the programmatic level, all project circumstances are not foreseeable and these mitigation measures may not be feasible or effective for some projects. Therefore, even with implementation of **Mitigation Measure MM-AIR-1(a)**, impacts would remain significant and unavoidable. No additional feasible mitigation measures are available to reduce significant and unavoidable impacts beyond those identified in this PEIR.

Long term residential and commercial land use emissions: Because this PEIR evaluates impacts at the programmatic level, all project circumstances are not foreseeable and these mitigation measures may not be feasible or effective for some projects. Therefore, even with implementation of **Mitigation Measure MM-AIR-1(a), MM-EN-1(a),** and **MM-GHG-1(a)**, impacts would remain significant and unavoidable. No additional feasible mitigation measures are available to reduce significant and unavoidable impacts beyond those identified in this PEIR.

Long-term transportation emissions: Less than significant.

Impact AIR-2 **Expose sensitive receptors to substantial pollutant concentrations: Projected long-term emissions of toxic air contaminants (diesel particulate matter from heavy-duty diesel trucks and other emissions from industrial activities) are considered significant if they would be greater than current emission levels; and/or localized concentrations of toxic air contaminants at sensitive receptors (short-term and/or long-term) are considered significant if they would exceed existing conditions or SJVAPCD significance thresholds.**

Localized concentrations of TACs generally depend on two factors: meteorological conditions and TAC emissions. Meteorological conditions can act to either concentrate or disperse pollutants depending on the particulars of airflow in the area. Airflow is affected by temperature, geography, pressure gradients, and other factors. Airflow patterns can change dramatically on a short-term basis, but averaged over the

long term they are fairly consistent, with exceptions for large-scale changes such as during El Nino events.

Emissions of TACs can come from a variety of mobile and stationary sources, such as diesel construction equipment, truck traffic, stationary combustion sources, industrial processes, dry cleaning, retail service stations, and many others. However, an increase in regional population and commerce may result in increased TAC emissions from stationary sources. Without specific information on individual sources and locations no project- specific analysis of stationary TAC sources is possible.

Short-Term Emissions

The greatest potential for exposure to substantial pollutant concentrations and TAC emissions during construction would be DPM emissions associated with heavy-duty equipment operations and truck traffic during construction activities. According to SJVAPCD significance thresholds, , health effects from carcinogenic air toxics are described in terms of individual cancer risk. "Individual cancer risk" is the likelihood that a person continuously exposed to concentrations of TACs over a 30-year lifetime will contract cancer based on the use of standard risk assessment methodology. SJVAPCD thresholds are as follows: the incremental cancer risk should not exceed an incremental increase of 10 excess cancer cases per million, and the chronic and acute non-carcinogenic risks should not exceed a calculated Hazard Index (HI) value of 1.0. [43]

A conservative analysis of maximum potential exposures of sensitive receptors to carcinogenic risks assumes that residential exposures begin at birth, and exposures of children at schools is anticipated to begin at the lowest educational grade level. The OEHHA guidance (discussed in the Regulatory Framework above) provides recommended values that are specific to the age of the receptor and the type of activity in which the receptor would be engaged during exposure, which are evaluated on a case-by-case basis. The San Joaquin Valley Air Pollution Control District that has adopted guidelines to implement the 2015 OEHHA HRA guidelines.[44]

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43 The hazard index (HI) is only an approximation of the aggregate effect on the target organ (e.g., the lungs) because some of the substances might cause irritation by different (i.e., non-additive) mechanisms. As with the hazard quotient, aggregate exposures below an HI of 1.0 derived using target organ specific hazard quotients likely will not result in adverse non-cancer health effects over a lifetime of exposure and would ordinarily be considered acceptable. An HI equal to or greater than 1.0, however, does not necessarily suggest a likelihood of adverse effects. Additional information and full definition can be found at: https://www.epa.gov/national-air-toxics-assessment/nata-glossary-terms

44 San Joaquin Valley Unified Air Pollution Control District, Final Staff Report, Update to District's Management Policy to Address OEHHA's Revised Risk Assessment Guidance Document, May 2015 available at: https://www.valleyair.org/busind/pto/staff-report-5-28-15.pdf

The specific locations of future construction activity within the TCAG region was not known when the air quality analysis was completed, and therefore many project-specific variables could not be determined, such as proximity to the emissions sources and duration of exposure. A construction health risk analysis would be speculative given unknown construction locations, construction activities, and local meteorology. However, it is reasonable to assume that some level of construction activity would occur near sensitive receptors (e.g., residences and schools). The significant construction emissions identified above could result in adverse health effects to sensitive receptors. As such, it is likely that intense construction activities (e.g., from development projects that involve a high volume of haul trucks) would exceed the health risk significance thresholds due to equipment and truck exhaust emissions, and short-term impacts of TAC emission would be significant.

Disturbance of rock and soil during construction activities which contains naturally occurring asbestos can result in consequent exposure to the public. Asbestos most commonly occurs in serpentine rock, and its parent material, ultramafic rock. As discussed above, naturally occurring asbestos (NOA) has been identified in Tulare County. Construction activities in areas known to contain ultramafic rocks may expose workers and the general public to naturally occurring asbestos. The Tulare County General Plan includes a policy that requires compliance with all provisions of the state's Air Toxic Control Measure for control of airborne asbestos emissions relating to construction, road maintenance, and grading activities. This policy would reduce exposure to NOA and associated health risks. However, additional mitigation would be required to reduce impacts to the maximum extent feasible. This impact is considered significant.

Long-Term Emissions in General

The 2018 RTP/SCS would result in increased vehicular traffic (both light-duty vehicles and trucks), which as discussed above, can cause increased local TAC concentrations. TACs resulting from vehicle traffic include DPM, benzene, 1,3-butadiene, formaldehyde, acetaldehyde, acrolein, polycyclic organic matter (POM), and naphthalene. These TACs are generally components of vehicle exhaust, though a small portion occur as fugitive emissions that are emitted during fueling or fuel transport. TAC emissions present in vehicle exhaust are typically ROGs, and are included in the estimates of ROG emissions from mobile sources discussed in **Impact AIR-1** above. As shown in **Table 4.3-5**, emissions of ROG would be substantially reduced under the Plan. This would then reflect a general reduction of TACs in vehicle exhausts as well.

Freeways and other heavily travelled roads are generally considered sources of elevated cancer risk due to high concentrations of TACs along these roadways. CARB recommends that local governments avoid

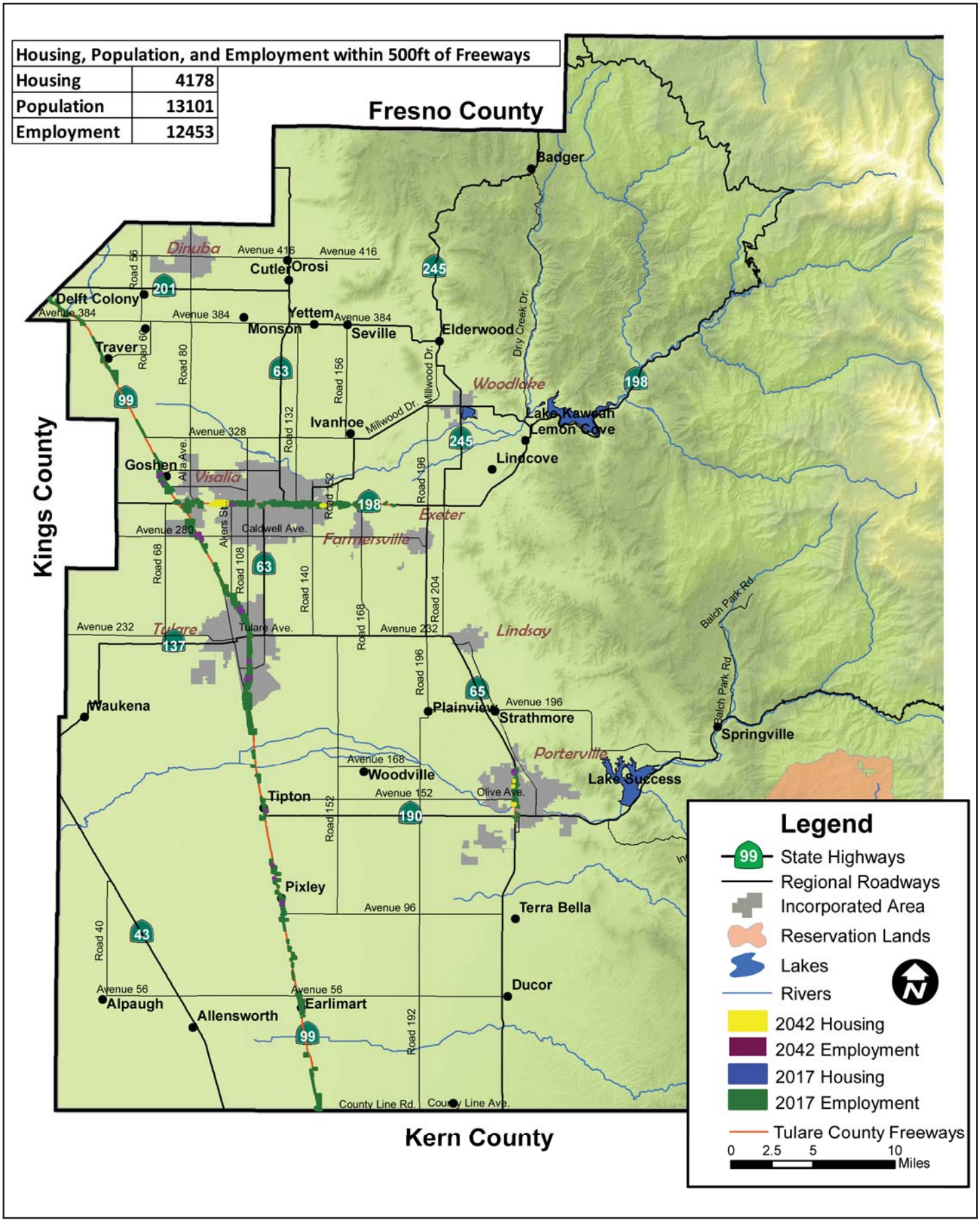
locating new sensitive land uses within 500 feet of freeways.[45] CARB based its 500-foot buffer recommendation on a review of several studies and air dispersion modeling using year 2000 truck and automobile information that included higher DPM emissions rates.

Sensitive land uses/receptors include schools, hospitals, daycare centers, nursing homes, parks and playgrounds, and residences. As shown in **Table 4.9-4 in Section 4.9, Population and Housing**; **Figure 4.3-3 Housing and Employment within 500 Feet of Freeways under the Project (2042);** and **Figure 4.3-4 Housing and Employment within 500 Feet of Freeways under the No Project Alternative**, the 2018 RTP/SCS would place more households and people within 500 feet of high volume roadways than under existing conditions and under the No Project Alternative.

While the 2018 RTP/SCS would significantly decrease emissions of TACs from vehicles as a result of future emission controls, SCS policies to densify development in urban areas could encourage more people to move into areas that could have higher concentrations of TACs. However, as discussed above, emission controls would substantially reduce emissions of all types, which would tend to reduce health risks. The two opposing trends (generally cleaner vehicles, but more people located closer to transportation facilities) will result in cleaner air in the region, but health risks at any given location could increase, and therefore the exposure of sensitive receptors to localized concentrations of TACs could increase above significance thresholds for sensitive receptors.

Another substantial source of TACs is stationary sources, such as diesel generators, industrial processes, operation of oil fields, and dry cleaners. The 2018 RTP/SCS does not have any direct effect on these types of sources, but overall growth could lead to an overall increase in these sources. However, there is no available data on possible new stationary sources that would be in operation in 2042. As such, it is not possible to determine what contribution these sources would have to sensitive receptors, and how the 2018 RTP/SCS would influence any such contribution. While sources of TACs would likely increase, emission control technology and regulations would increase, and therefore, given the lack of data regarding industrial and other stationary sources of TACs, it is not possible to project whether these sources would result in increased health risks in 2042 compared to existing conditions. Consequently, as a conservative approach, this impact is considered significant.

45 California Air Resources Board, *Air Quality and Land Use Handbook: A Community Health Perspective.* April 2005



SOURCE: Tulare County Association of Governments, 2018

FIGURE **4.3-3**

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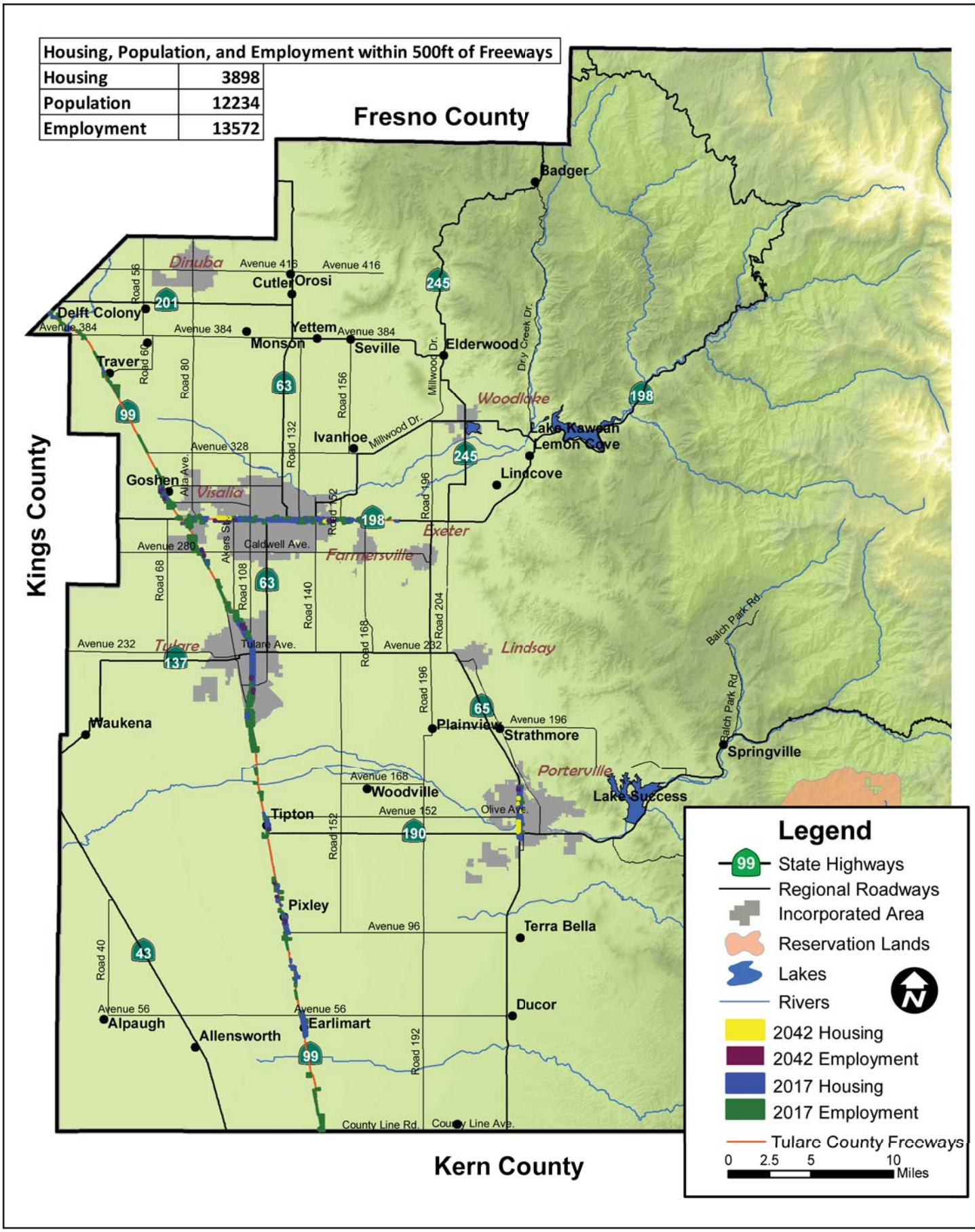
Housing and Employment within 500 Feet of Freeways Under the Project (2042)



SOURCE: Tulare County Association of Governments, 2018

FIGURE **4.3-4**

IMPACT SCIENCES

Housing and Employment within 500 Feet of Freeways Under the No Project Alternative (2042)

Long-Term Emissions: Diesel Exhaust

DPM is part of diesel exhaust, and is often found in higher concentrations in areas with significant truck traffic, such as ports, freeways, and distribution centers. However, other areas such as industrial sites can also result in high local concentrations of DPM. DPM is primarily very fine particles, with more than 90 percent of DPM being less than 1 micron in diameter. Since particles less than 2.5 microns in diameter are categorized as PM2.5, this means that over 90 percent of DPM is in the form of PM2.5, with less than 10 percent existing as PM10. PM10 emissions from mobile sources mainly result from tire wear, brake dust, road dust being re-entrained rather than fuel combustion;[46] Because there is a lack of DPM specific data, and most DPM also qualifies as PM2.5, PM2.5 exhaust emissions will be used as a proxy for DPM emissions in this analysis. As shown in **Table 4.3-6**, emissions of PM2.5 for all mobile sources would be reduced under the 2018 RTP/SCS.

In order to more closely evaluate DPM emissions, PM2.5 emissions from heavy-duty diesel vehicles were evaluated. These emissions under existing conditions as compared to 2042 emissions for the Plan and No Project are shown in **Table 4.3-6, PM2.5 Exhaust Emissions from Heavy-Duty Diesel Vehicles.**

Table 4.3-6
PM2.5 Exhaust Emissions from Heavy-Duty Diesel Vehicles (tons/day)

Existing 2017	2042 RTP/SCS	2042 No Project
0.0643	0.0428	0.0425

Source: TCAG 2018

PM2.5 emissions from heavy-duty diesel vehicles in 2042 would be less than the emissions under existing conditions for both the 2018 RTP/SCS and the No Project Alternative, Further, CARB has several programs and regulations in place to further reduce DPM emissions statewide.[47] This includes enforced retrofit of diesel particulate filters, replacement of older trucks and buses, requirements for lower emissions on new diesel vehicles, inspection programs, idling restrictions, and other programs for marine and off-road diesel vehicles. These programs and regulations would reduce DPM emissions over the period of the 2018 RTP/SCS. Consequently, it can be assumed that the reductions in PM2.5 emissions include reductions in DPM emissions region-wide.

46 CARB, *Overview: Diesel Exhaust and Health*, April 2016. https://www.arb.ca.gov/research/diesel/diesel-health.htm

47 Ibid.

While in general DPM emissions in the future would be substantially reduced, 2018 RTP/SCS transportation improvements could bring sources of DPM closer to some sensitive receptors through construction of new facilities or widened roadways, and/or sensitive receptors could be constructed close to DPM sources, all of which could increase exposure of individual sensitive receptors (see above discussion of long-term emissions in general). To provide a measure of this impact, highways in Tulare County were given an Air Quality Index (AQI), based on three factors: (1) average daily traffic (2) percentage of truck traffic and (3) level of service (which is a measure of traffic delays). A 'high' index indicates that a roadway has a relatively high amount of traffic and percentage of trucks, with a low level of service. A "low" index reflects a relatively low amount of traffic, with fewer trucks, and a "high level of service. "Medium" would be somewhere between high and low. In this way, a "high" index qualitatively shows a higher health risk as well, since roadways with a 'high' index would tend to have higher DPM concentrations due to the higher number of trucks and lower traffic speeds.

The AQI for highways in Tulare County for Existing, 2042 Plan and 2042 No Project conditions are shown in **Figures 4.3-5** through **4.3-7 (Figure 4.3-5, Existing Sensitive Receptors within 0.25 Mile of Transportation Air Quality Ranking**; **Figure 4.3-6, Plan Sensitive Receptors within 0.25 Mile of Transportation Air Quality Ranking [2042]; and Figure 4.3-7, No Project Sensitive Receptors within 0.25 Mile of Transportation Air Quality Ranking [2042])**.[48] Sensitive receptors, including the number of schools, hospitals, and households within a quarter mile of each highway, are listed and sorted by AQI. The figures show that in 2042 under the 2018 RTP/SCS, more highways are identified as having a higher AQI rank than under existing conditions.

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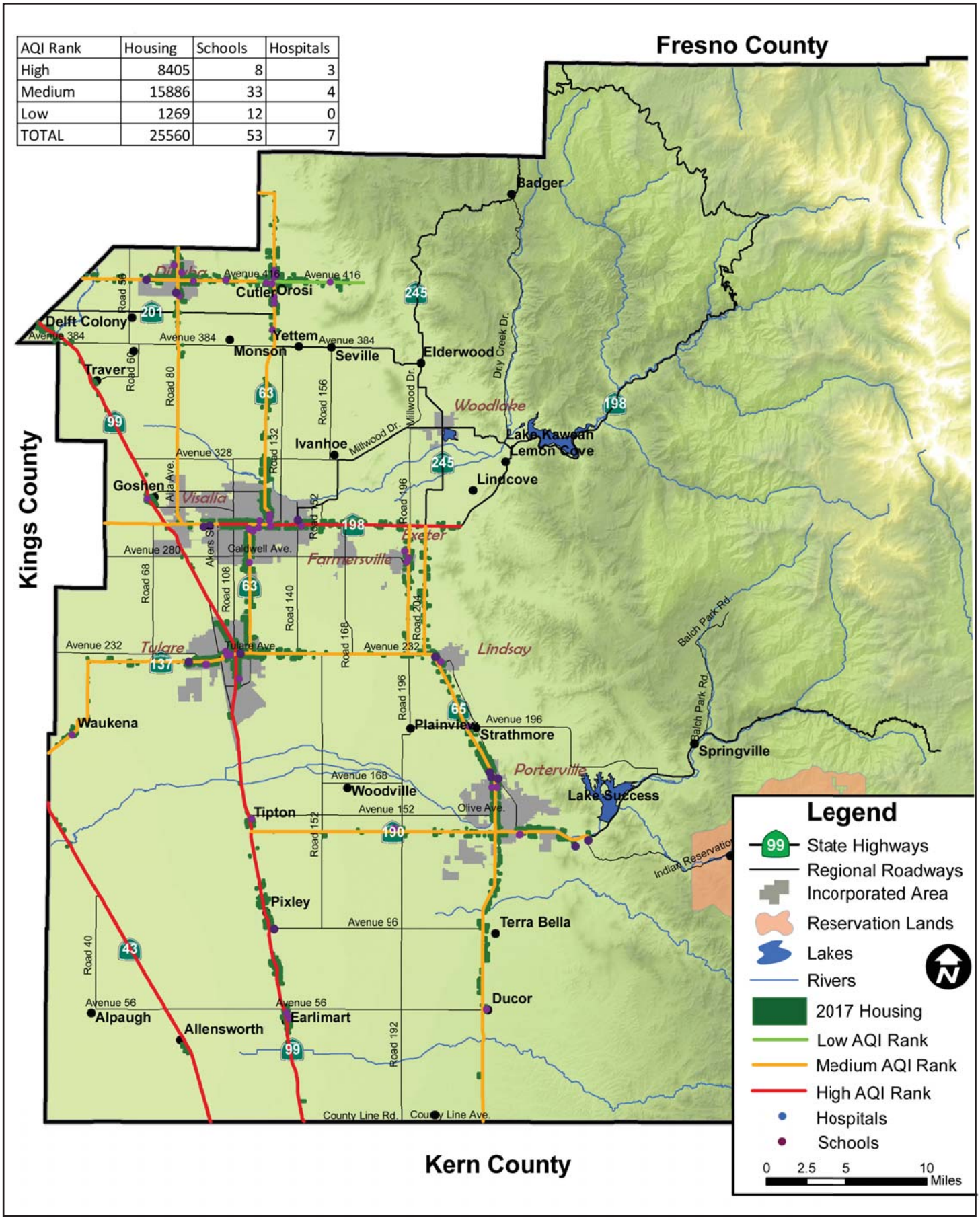
48 The CARB *Air Quality and Land Use Handbook: A Community Health Perspective*, 2005, states that the California Education Code section 17213 and the California Public Resources Code section 21151.8 require school districts to consult with administering agencies and local air districts when performing environmental assessment. Such consultation is required to identify both permitted and non-permitted facilities that might significantly affect health at the new site. These facilities include freeways and other busy traffic corridors, large agricultural operations, and rail yards that are within one-quarter mile of the proposed school site and that might emit hazardous air emissions, or handle hazardous or acutely hazardous materials, substances, or waste. One-quarter mile distance from sensitive receptors to these transportation corridors were chosen to reflect consistency with the CARB handbook.



AQI Rank	Housing	Schools	Hospitals
High	8405	8	3
Medium	15886	33	4
Low	1269	12	0
TOTAL	25560	53	7

SOURCE: Tulare County Association of Governments, 2018

FIGURE **4.3-5**

Existing Sensitive Receptors within 0.25 Mile of Transportation Air Quality Ranking

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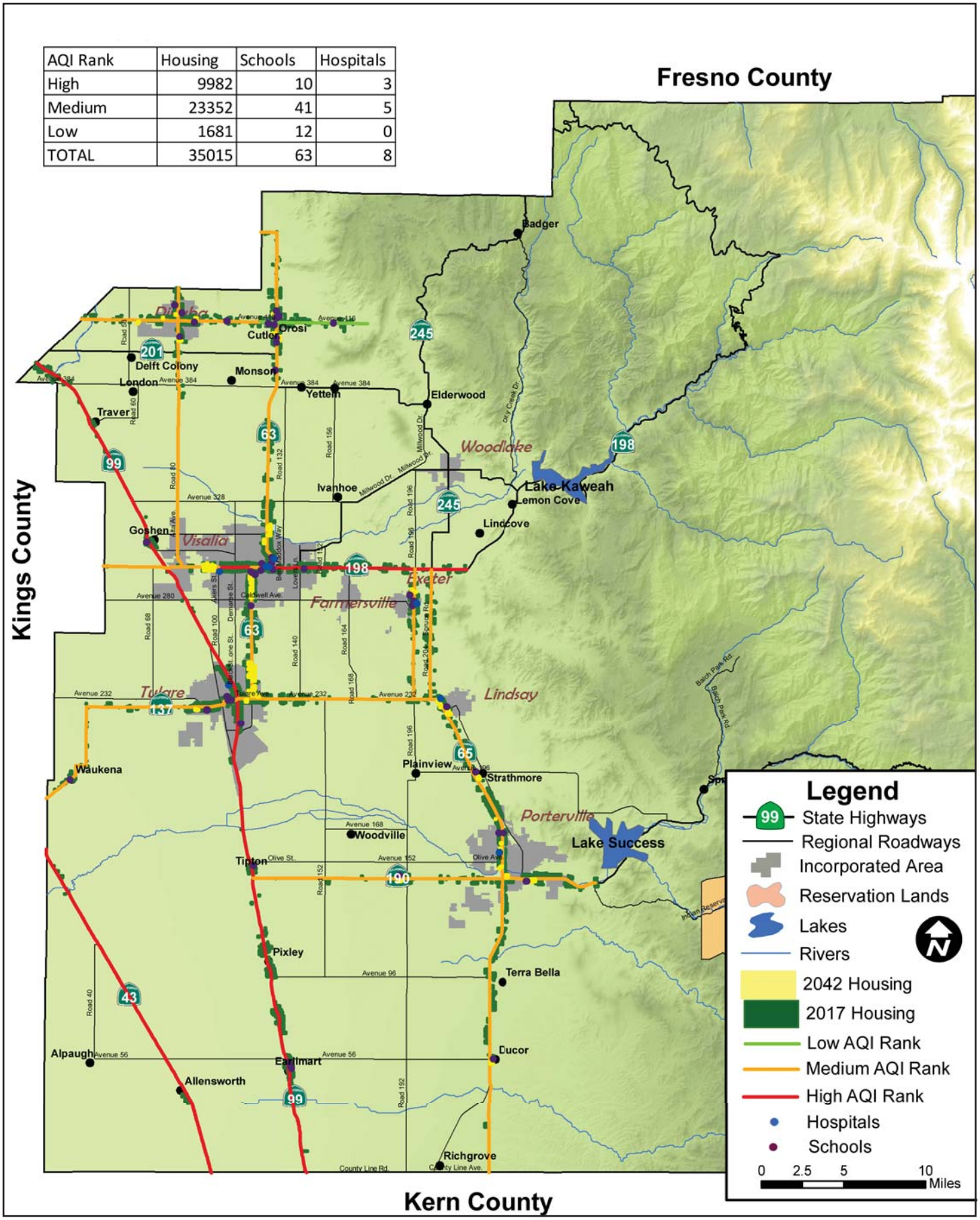
AQI Rank	Housing	Schools	Hospitals
High	9982	10	3
Medium	23352	41	5
Low	1681	12	0
TOTAL	35015	63	8

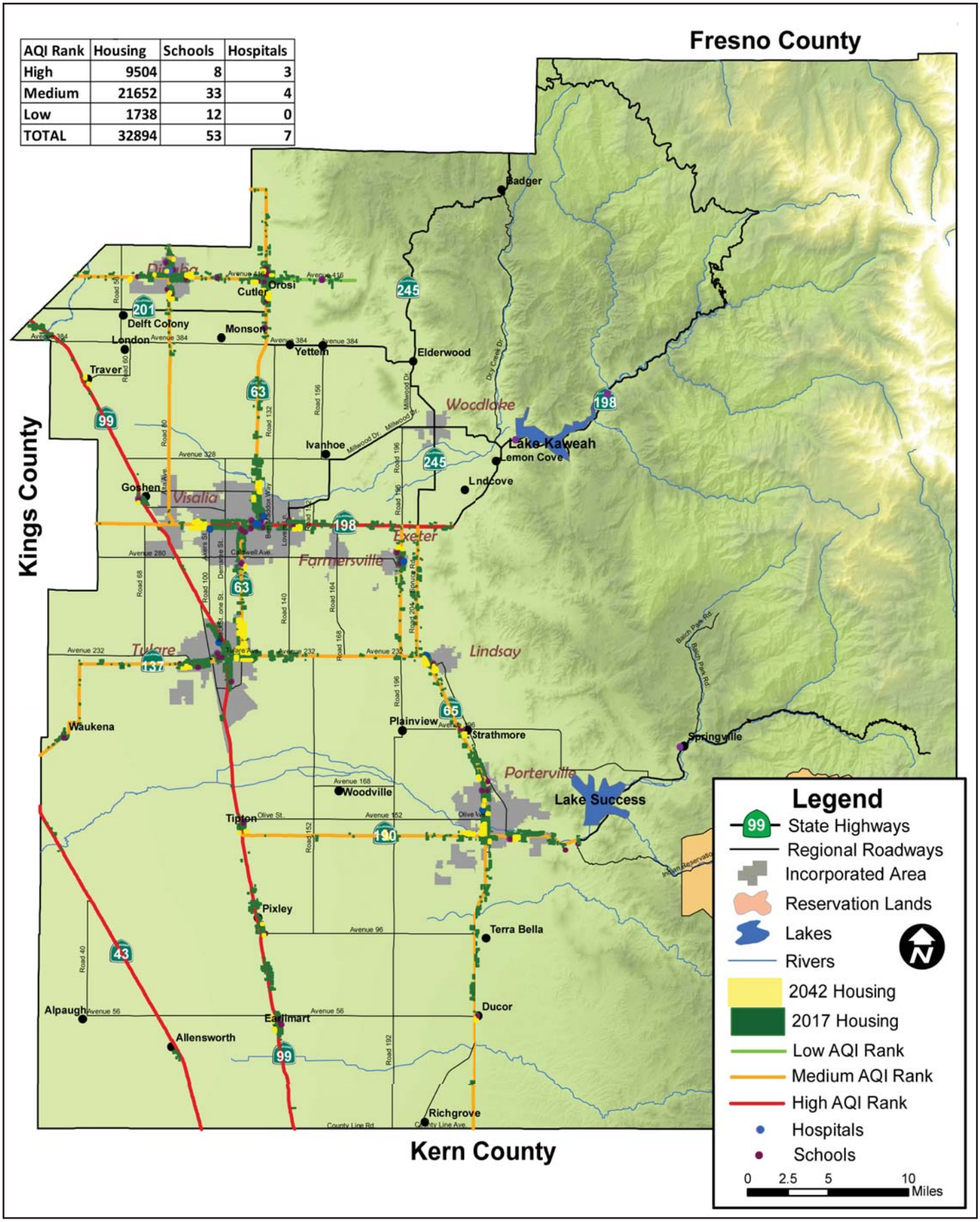


SOURCE: Tulare County Association of Governments, 2018

FIGURE **4.3-6**

IMPACT SCIENCES

Plan Sensitive Receptors within 0.25 Mile of Transportation Air Quality Ranking (2042)



AQI Rank	Housing	Schools	Hospitals
High	9504	8	3
Medium	21652	33	4
Low	1738	12	0
TOTAL	32894	53	7

SOURCE: Tulare County Association of Governments, 2018

FIGURE **4.3-7**

No Project Sensitive Receptors within 0.25 Mile of Transportation Air Quality Ranking (2042)

The increased number of highways showing a higher AQI (**Figures 4.3-5** through **4.3-7**) is reflective of the fact that there would be higher truck traffic in 2042, and that more sensitive receptors would be located within a quarter mile of Tulare County highways. These sensitive receptors would be located nearer to vehicles emitting TACs, and are exposed to greater concentrations of TACs as compared to receptors located at greater distances from high volume roadways. Comparing the conditions in 2042 between the 2018 RTP/SCS and the No Project Alternative, the overall AQIs would be similar for both. Regarding sensitive receptor locations, the 2018 RTP/SCS and No Project Alternative would both result in the same number of schools and hospitals within a quarter mile of highways, but under the 2018 RTP/SCS slightly more households would be within this distance. Compared to existing conditions, an increased heath risk impact could result from implementation of the 2018 RTP/SCS as more sensitive receptors would be located relatively close to increased truck traffic. However, as noted above PM2.5 would in general decrease, so while there would be more truck traffic on local highways, emissions from these vehicles would decrease.

To determine general risk, a screening risk assessment prepared by the Southern California Association of Governments (SCAG) was used. While the metrological data would be different between the two regions, the screening risk assessment prepared by SCAG can provide helpful information on overall risk trends. SCAG performed a screening risk assessment[49] of freeway corridors in the South Coast region. The assessment analyzed traffic on freeway segments in each of the counties in the SCAG region, for a total of 16 freeway corridors. Cancer risks were estimated to decrease between 2015 and 2042 substantially in all scenarios for residents and workers along the freeway corridors.

As part of the RTP/SCS, TCAG estimates Average Daily Traffic (ADT) on major roadways in the TCAG region. The count includes 2017 and 2042. The highest traffic volume segment was along SR 99 between SR 198 and SR 137, where traffic volumes are projected to increase from 73,126 ADT in 2017 to 94,974 ADT in 2042, for an increase of 21,848 or 30 percent. The SR 99 segment has similar traffic volume to the Interstate-15 (I-15) corridor segment through Victorville in San Bernardino County in the SCAG screening assessment. The I-15 was projected to increase from 96,339 ADT in 2015[50] (existing conditions) to 124,973 ADT in 2040 (RTP/SCS) (an increase of approximately 30 percent). Because the I-15 corridor traffic volumes are greater than the SR 99, this comparison is considered a worst-case scenario. The SCAG study found that residential 30-year cancer risk along the I-15 would decrease from 524 additional cases in a million in 2015 to 64 additional cases in a million in 2040 under their proposed project. The maximum

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49 South Coast Association of Governments, *Final Program Environmental Impact Report 2016-2040 Regional Transportation Plan/Sustainable Communities Strategy, Appendix D.* December 2015.

50 The VMT data for the existing conditions simulation was prepared by using the 2012 base year, but includes projects from the 2015 FTIP, as well as projects in the 2012-2035 RTP/SCS.

exposed individual worker cancer risk along I-15 would decrease from 22 additional cases in a million in 2015 to 3 case in a million in 2040 under their proposed project.

While it is not possible to say that results along SR 99 in Tulare County would be identical, the two segments have similar vehicle counts and similar percentage increases (though, as discussed above, the SR 99 traffic volumes increase at a similar rate to the I-15, but with lesser total volumes) and years of analysis. Further, SCAG's analysis showed a decrease in risk across all segments regardless of increase in ADT. Therefore, a conclusion can be drawn that risk is generally going down due to a number of factors. Further, other freeway and highway segments would likely see reductions regardless of increased traffic, as did all segments and corridors assessed in the SCAG study.[51] However, the majority of the segments in the SCAG study, despite reductions in risk, still exceeded the threshold of 10 in a million. Based on the fact that more sensitive receptors would be located in proximity to highways (including those with an AQI index of "high") and that it is likely that overall cancer risk would still exceed the threshold of 10 in a million, this impact would remain significant.

Level of Significance Before Mitigation

Short-term emissions: Significant.

Long-term emissions: Significant.

Mitigation Measures

MM-AIR-2(a): TCAG shall pursue the following activities in reducing the impact associated with health risk within 500 feet of freeways and high-traffic volume roadways:

- Participate in on-going statewide deliberations on health risks near freeways and high-traffic volume roadways. This involvement includes providing available data and information such as the current and projected locations of sensitive receptors relative to transportation infrastructure;
- Work with air agencies including CARB and the air districts in the TCAG region to support their work in monitoring the progress on reducing exposure to emissions of PM10 and PM2.5 for sensitive receptors, including schools, hospitals, and residences within 500 feet of high-traffic volume roadways;
- Work with stakeholders to identify planning and development practices that are effective in reducing health impacts to sensitive receptors; and

[51] South Coast Association of Governments, *Final Program Environmental Impact Report 2016-2040 Regional Transportation Plan/Sustainable Communities Strategy, Appendix D.* December 2015.

- Share information on all of the above efforts with stakeholders, member cities, counties and the public.

MM-AIR-2(b): Consistent with the provisions of Section 15091 of the *State CEQA Guidelines*, TCAG has identified mitigation measures capable of avoiding or reducing the significant effects regarding exposure of sensitive receptors to substantial pollutant concentrations that are within the jurisdiction and responsibility of local agencies (land use projects) and implementing agencies (transportation projects). Where the Lead Agency has identified that a project has the potential for significant effects, the Lead Agency can and should consider the measures that have been identified by SJVAPCD, CARB, and air district(s), or other comparable measures (such as those included in General Plans or other land use regulations), to reduce health risks below SJVAPCD significance thresholds.

Lead agencies can and should identify appropriate measures, to be incorporated into project building design for residential, school, and other sensitive uses located within 500 feet (or other appropriate distance as may be identified by CARB) of freeways, heavily travelled arterials, railways and other sources of DPM and known or suspected carcinogens. The measures should include but not be limited to the following:

- The project sponsor should retain a qualified air quality consultant to prepare a health risk assessment (HRA) in accordance with CARB and OEHHA requirements to determine the exposure of project residents/occupants/users to stationary source and mobile source emissions prior to issuance of a demolition, grading, or building permit. The HRA should be submitted to the Lead Agency for review and approval. The sponsor should implement the approved HRA recommendations, if any.

- The project sponsor should implement the following features that have been found to reduce the air quality risk to sensitive receptors and should be included in the project construction plans. These should be submitted to the appropriate agency for review and approval prior to the issuance of a demolition, grading, or building permit and ongoing.

  - Do not locate sensitive receptors near distribution center's entry and exit points.
  - Do not locate sensitive receptors in the same building as a perchloroleythene dry cleaning facility.
  - Maintain a 50-foot buffer from a typical gas dispensing facility (under 3.6 million gallons of gas per year).
  - Install, operate, and maintain in good working order a central heating and ventilation (HV) system or other air take system in the building, or in each individual residential unit, that meets the efficiency standard of the MERV 13. The HV system should include the following features: Installation of a high efficiency filter and/or carbon filter-to-filter particulates and other chemical

matter from entering the building. Either HEPA filters or ASHRAE 85 percent supply filters should be used.

- Retain a qualified HV consultant or HERS rater during the design phase of the project to locate the HV system based on exposure modeling from the mobile and/or stationary pollutant sources.
- Maintain positive pressure within the building.
- Achieve a performance standard of at least one air exchange per hour of fresh outside filtered air.
- Achieve a performance standard of at least 4 air exchanges per hour of recirculation
- Achieve a performance standard of 0.25 air exchanges per hour of in unfiltered infiltration if the building is not positively pressurized.
- Maintain, repair and/or replace HV system or prepare an Operation and Maintenance Manual for the HV system and the filter. The manual should include the operating instructions and maintenance and replacement schedule. This manual should be included in the CC&R's for residential projects and distributed to the building maintenance staff. In addition, the sponsor should prepare a separate Homeowners Manual. The manual should contain the operating instructions and maintenance and replacement schedule for the HV system and the filters. It should also include a disclosure to the buyers of the air quality analysis findings.
- Private (individual and common) exterior open space areas, including playgrounds, patios, and decks, should either be shielded from stationary sources of air pollution by buildings or otherwise buffered to further reduce air pollution exposure for project occupants.

Level of Significance After Mitigation

Because this PEIR evaluates impacts at the programmatic level, all project circumstances are not foreseeable and therefore, even with implementation of **Mitigation Measure AIR-2(a)** and **AIR-2(b**), impacts would remain significant and unavoidable and these mitigation measures may not be feasible or effective for some projects. No additional feasible mitigation measures are available to reduce significant and unavoidable impacts beyond those identified in this PEIR.

Impact AIR-3 **Conflict with or obstruct implementation of the applicable air quality plan: Projected long-term emissions from all sources (stationary and mobile) would be considered significant if they are not consistent with the applicable air quality management plans and state implementation plan.**

The 2018 RTP/SCS would result in a less than significant impact to air quality related to the potential to conflict with or obstruct implementation of the adopted SIP/AQMPs/Attainment Plans because the projected long-term emissions are in alignment with the local SIP/AQMPs as demonstrated in the transportation conformity analysis, found in the appendices to the 2018 RTP/SCS.[52] The emissions resulting from the Plan are within the applicable emissions budgets as stated in the SIP/AQMPs for each nonattainment or maintenance area for all milestone, attainment, and planning horizon year. See conformity discussion in **Impact AIR-1** for further details. Therefore, impacts would be less than significant.

Level of Significance Before Mitigation

Less than significant.

Mitigation Measures

None required.

Level of Significance After Mitigation

Less than significant.

Impact AIR-4 **Expose a substantial number of people to objectionable odors.**

Odor sources such as wastewater treatment facilities, landfills, and agricultural operations, are controlled by county and city odor ordinances and air district rules that prohibit nuisance odors and identify enforcement measures to reduce odor impacts to nearby receptors. These ordinances and rules are enforced by the air pollution control districts and local law enforcement. As such impacts would be less than significant.

52 2018 Tulare County Regional Transportation Plan/Sustainable Communities Strategy. Appendix 41.

Mitigation Measures

None required.

Level of Significance After Mitigation

Less than significant.

4.3.4 CUMULATIVE EFFECTS

The 2018 RTP/SCS is a cumulative plan by design that integrates transportation investments with land use strategies for an entire region. As such, the analysis of air quality impacts presented above is inherently a cumulative analysis compliant with the requirements of CEQA. However, 2018 RTP/SCS would contribute to additional air quality impacts beyond Tulare County. The cumulative analysis impact area for air quality consists of the San Joaquin Valley Air Basin.

Within the cumulative impact analysis area, implementation of the 2018 RTP/SCS combined with cumulative development outside the region has the potential to result in significant air quality impacts occurring outside Tulare County, which would be considered a significant cumulative impact. As discussed above, implementation of the 2018 RTP/SCS would have significant air quality impacts (**Impact AIR-1** and **Impact AIR-2**). Air emissions from other counties in the San Joaquin Valley Air Basin would add to these significant cumulative impacts.

The 2018 RTP/SCS contribution to these impacts would be cumulatively considerable. Implementation of **Mitigation Measures MM-AIR-1(a)** and **MM-AIR 2(a)** through **MM-AIR-2(b)** would reduce the 2018 RTP/SCS contribution to cumulative transportation impacts; however, the Plan's contribution to these impacts would remain cumulatively considerable.

4.4 BIOLOGICAL RESOURCES

This section describes the current biological resources within the region and evaluates the significance of the changes in biological resources that would result from implementation of the proposed RTP/SCS. In addition, this PEIR provides a framework of mitigation measures for subsequent, site-specific environmental review documents prepared by lead agencies to reduce identified impacts. Information sources utilized in this discussion include the US Fish and Wildlife Service (USFWS), the California Native Plant Society (CNPS), the California Natural Diversity Database (CNDDB) and the California Department of Fish and Wildlife (CDFW).

4.4.1 ENVIRONMENTAL SETTING

Tulare County encompasses an area of varied topography and diverse ecosystems. An ecosystem is the dynamic complex of plant and animal communities and their associated non-living environment. The exceptionally diverse plant and animal communities in the Plan region call for a broad approach to their description.

4.4.1.1 Terrestrial Biota and Habitats

Tulare County contains a wide diversity of tree (hardwood and coniferous forests, oak woodlands), shrub (chaparrals) and herbaceous (grasslands) habitat types. Forty-one habitat types are mapped within Tulare County using the California Department of Fish and Wildlife's (CDFW) California Wildlife Habitat Relationships (CWHR) habitat classification system.[1] A description of each of the habitats adapted from *A Guide to Wildlife Habitats of California*[2] is presented in **Appendix 4.4.** Nine of the forty-one habitat types are designated aquatic types and are discussed in 4.4.1.2 below. The vegetation classifications from *A Manual of California Vegetation, Second Edition* (Sawyer et al., 2009) that most closely resemble those classified by the CWHR are also presented in each description. It should be noted that these habitats are generalized and that site-specific variation is likely present. Also note that the CWHR classification system maps habitats from a broad perspective, and in many areas, it is expected that two or more habitats may blend with one another. Habitats which occur within populated areas can also show variation because of a greater exposure to anthropogenic influences, such as the introduction of exotic plant species and manufactured growing conditions.

1 California Department of Fish and Wildlife (CDFW). 2008. *California Wildlife Habitat Relationships.*

2 Mayer, K.E. and Laudenslayer, W.F. Jr..1988. *A Guide to Wildlife Habitats in California*.

Tree-Dominated Habitats

Tulare County is home to a variety of hardwood, coniferous, and mixed woodlands and forests. These tree-dominated habitats can support diverse wildlife populations. Riparian habitats are generally the terrestrial areas adjacent to fresh water bodies forming a vegetated corridor from stream edge to floodplain edge. Riparian habitats occur in and along the county's four major rivers (Kings River; Kaweah River; Tule River; and White River/Deer Creek), as well as along the many creeks, streams, arroyos, and ravines in the County. Riparian areas are rich in wildlife species, providing foraging, migration, roosting, and nesting/breeding habitat. The following are descriptions of types of tree-dominated habitats that could be impacted by development (transportation projects and land use changes) as proposed under the 2018 RTP/SCS.

Shrub Dominated Habitats

Shrub-dominated habitats, such as various chaparral communities, are comprised primarily of woody, evergreen shrubs, and occur predominantly along the foothills of the Sierra Nevada Range in eastern Tulare County. The following are descriptions of shrub-dominated habitats that could be impacted by development (transportation projects and land use changes) under the 2018 RTP/SCS.

Herbaceous Dominated Habitats

These habitats are generally comprised of areas dominated by grasses and other non-woody species. The majority of this habitat in Tulare County is comprised of non-native grasslands. Native perennial grasslands which are dominated by perennial bunch grasses such as purple needlegrass (*Nassella pulchra*) were historically abundant within Tulare County but are now currently patchy in distribution. The following are descriptions of the herbaceous dominated habitats that could be impacted by development (transportation projects and land use changes) under the 2018 RTP/SCS.

Developed and Sparsely/Non-Vegetated Habitats

Developed and sparsely/non-vegetated habitats are abundant in Tulare County. Developed habitats are usually sparsely or non-vegetated, are associated with urban and agricultural areas, and are highly disturbed. Species that occur in these areas are typically adapted to anthropogenic disturbance and/or comprised of ornamental species. Sparsely vegetated habitats also tend to be associated with rock outcrops and cliffs. The following are descriptions of developed and sparsely/non-vegetated habitats that could be impacted by development (transportation projects and land use changes) under the 2018 RTP/SCS.

Sensitive Vegetation Communities

Sensitive vegetation communities are natural communities and habitats that are either unique, of relatively limited distribution in the region, of particularly high wildlife value, or provide habitat to Rare or Endangered Species. These resources have been defined by federal, state, and local government conservation programs. The California Natural Diversity Database[3] was used to identify sensitive vegetation communities located in the County. Sensitive vegetation communities known to occur within the County are included in **Table 4.4-1, Sensitive Communities and Critical Habitats Documented within Tulare County,** below.

Table 4.4-1
Sensitive Communities and Critical Habitats Documented within Tulare County

Communities Considered Sensitive by the CDFW
Big Tree Forest
Central Valley Drainage Hardhead/Squawfish Stream
Great Valley Oak Riparian Forest
Northern Claypan Vernal Pool
Northern Hardpan Vernal Pool
Southern Interior Cypress Forest
Sycamore Alluvial Woodland
Valley Sacaton Grassland
Valley Saltbush Scrub
Valley Sink Scrub
USFWS-Designated Critical Habitat for Identified Species
California condor (*Gymnogyps californianus)*
California tiger salamander (*Ambystoma californiense*)
Hoover's spurge (*Chamaesyce hooveri)*
Keck's checker mallow (*Sidalcea keckii)*
Little Kern golden trout (*Oncorhynchus aguabonita whitei)*
San Joaquin orcutt grass (*Orcuttia inaequalis)*
Sierra Nevada big horn sheep (*Ovis canadensis sierrae)*
Vernal pool fairy shrimp (*Branchinecta lynchi)*
Vernal pool tadpole shrimp (*Lepidurus packardi)*

Sources: CNDDB (CDFW, 2018); USFWS, Critical Habitat Portal (2017)

3 CDFW. 2017. California Natural Diversity Database (CNDDB).

4.4.1.2 Drainages and Wetlands

Tulare County covers a diverse region that includes several types of waters and wetlands. These waters range from concrete-lined urban streams, reservoirs, and agricultural ditches, to natural rivers, desert washes, and mountain lakes. Lakes, rivers, streams, and other water bodies are termed "jurisdictional waters" when they are protected by federal and/or state law. Special aquatic sites, which include wetlands, are considered an important subset of jurisdictional waters. State and federal resource agencies regulate activities that take place within or could affect jurisdictional waters and associated riparian resources. In order to identify jurisdictional features and define the jurisdictional limits, state and federal resource agencies have developed regulations (discussed below), which serve as legal definitions for jurisdictional waters and wetlands.

Drainages

The County contains four principal rivers and their watersheds: Kings River; Kaweah River; Tule River; and White River/Deer Creek. Several creeks and tributaries are associated with each one of these watersheds and generally flow from the Sierra Nevada Mountains westwards towards the San Joaquin Valley. The drainages within these watersheds are of biological importance as they provide valuable foraging habitat, breeding habitat, and movement habitat for a wide variety of animal species, including sensitive species such as Little Kern golden trout (*Oncorhynchus aguabonita whitei*), California red-legged frog (*Rana draytonii*), and pacific pond turtle (*Actinemys marmorata*). Information regarding each watershed is provided below:[4]

- *Kings River Watershed*: This watershed encompasses 1,742 square miles, ranging in elevation from 500 to 14,000 feet.
- *Kaweah Watershed*: The Kaweah Watershed is south of the Kings River Watershed. The Kaweah River is a tributary to the Tule River and drains 561 square miles of the Sierra Nevada Mountains.
- *Tule River Watershed*: the Tule River Watershed is primarily supplied by the Tule River, which drains 390 square miles above Lake Success (capacity 82,300 acre-feet).
- *Deer Creek/White River Watershed*: this watershed is in the southern portion of the County. Surface supplies emanate from a low-elevation stream group.

4 Tulare County. 2010. *Tulare County General Plan Recirculated Draft EIR*. February.

Canals

The County also contains a network of waterways, such as the Friant-Kern Canal and Tulare Irrigation District Canal, which transports water through the County for use in irrigation and flood control.

Wetlands

Wetlands are regarded as important biological resources, both because of their rarity and because they serve a variety of functional values. The County includes numerous wetlands mapped by the U.S. Fish and Wildlife Service (USFWS) National Wetlands Inventory.[5] Some wetlands may not have been mapped. A general description of each of the classifications is provided below. Of those wetland types mapped by the NWI, freshwater emergent wetland, riverine and lacustrine habitats are also mapped by the CWHR.

Vernal Pools

These seasonal wetlands are small depressions that fill with water during the winter, gradually drying during the spring, and becoming completely dry in the summer. These pools are found in only a few places in the world outside of California. Vernal pool vegetation is characterized by herbaceous plants that begin their growth as aquatic or semi-aquatic plants and transition to a dry land environment as the pool dries. Most vernal pool plants are annual herbs. Wildlife species supported by vernal pools include the California tiger salamander (*Ambystoma californiense*) and vernal pool fairy shrimp (*Branchinecta lynchi*).

Freshwater Emergent Wetlands

Freshwater emergent wetlands include all non-tidal waters dominated by emergent herbaceous plant species, mosses, and/or lichens. Wetlands of this type are also low in salinity. Wetlands which lack vegetation can be included in this class if they are less than 20 acres, do not have an active wave-formed or bedrock shoreline feature, and have a low water depth of less than 6.6 feet. This wetland type is also mapped by the CWHR. Freshwater emergent wetlands are characterized by erect, rooted herbaceous hydrophytes. Dominant vegetation is generally perennial monocots. All emergent wetlands are flooded frequently, enough so that the roots of the vegetation prosper in an anaerobic environment. The vegetation may vary in size from small clumps to vast areas covering several kilometers. The acreage of Fresh Emergent Wetlands in California has decreased dramatically since the turn of the century due to drainage and conversion to other uses, primarily agriculture.

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5 United States Fish and Wildlife Service. 2018. *National Wetlands Inventory*.

Freshwater Forested/Shrub Wetlands

These wetlands include non-tidal waters which are dominated by trees and shrubs, with emergent herbaceous plants, mosses, and/or lichens. Wetlands which lack vegetation can be included in this class if they also exhibit the same criteria as described for freshwater emergent wetlands. The vegetation found in freshwater forested/shrub wetlands are generally dominated by woody vegetation such as shrubs and trees.

Freshwater Ponds

Freshwater ponds include non-tidal waters with vegetative cover along its edges such as trees, shrubs, emergent herbaceous plants, mosses, and/or lichens. Freshwater ponds can be man-made or natural, and typically consist of an area of standing water with variable amounts of shoreline. These wetlands and deep water habitats are dominated by plants that grow on or below the surface of the water. This wetland type is also mapped by the CWHR and categorized as lacustrine habitat, which includes vernal pools.

Lakes

Lakes are a lacustrine system which includes wetlands and deep water habitats that are located in a topographic depression or dammed river channel. These areas tend to be greater than 20 acres. Vegetation cover within this habitat is generally less than 30 percent and often occurs in the form of emergent or surface vegetation. Substrates are composed of at least 25 percent cover of particles smaller than stones. This wetland type is also mapped by the CWHR and categorized as lacustrine habitat, which also includes vernal pools.

Riverine

Riverine habitats are a riverine system, which includes all wetlands and deep water habitats contained in natural or artificial channels that contain periodically or continuously flowing water. This system may also form a connecting link between two bodies of standing water. Substrates generally consist of rock, cobble, gravel or sand.

4.4.1.3 Sensitive Natural Communities

Sensitive natural communities are those listed by the CDFW due to the rarity of the community in the state or throughout its entire range (globally). **Table 4.4-1, Sensitive Communities and Critical Habitats Documented within Tulare County,** provides a list of sensitive communities designated by the CDFW found in Tulare County. Critical habitat is a specific geographic area(s) that is essential for the conservation of a threatened or endangered species and that may require special management and

protection. In Tulare County, there is approximately 428,800 acres of critical habitat, most of which is located along the Tulare/Inyo County border in Sequoia National Park.[6]

4.4.1.4 Special Status Species

Special-status species are generally defined as: (1) species listed as a candidate, threatened, or endangered under the federal or state Endangered Species Act; (2) species considered rare or endangered under the California Environmental Quality Act; (3) plants considered "Rare, Threatened, or Endangered in California" by the California Native Plant Society (Lists 1B and 2); (4) animal listed as "species of special concern" by the state; and (5) animals fully protected in California by the Fish and Game Code.

The following discussion is based on a background search of special-status species that are documented in the CNDDB, the California Native Plant Society's (CNPS) Inventory of Rare and Endangered Plants, and the US Fish and Wildlife Service's (USFWS) Endangered and Threatened species list. The background search was regional in scope and focused on the documented occurrences within the boundaries of Tulare County.

The search revealed 248 special status species within the region: 175 plants and 73 wildlife.[7] [8] [9] **Appendix 4.4** includes **Table 2, Special Status Animal Species Known to Occur or with Potential to Occur within Tulare County**. In addition to these special-status species, the search revealed 10 sensitive natural communities (see **Table 4.4-1). Appendix 4.4** also includes **Table 3, Special Status Plant Species Known to Occur or with Potential to Occur within Tulare Count**y.

4.4.1.5 Wildlife Movement Corridors

Wildlife movement corridors, or habitat linkages, are generally defined as connections between habitat patches that allow for physical and genetic exchange between otherwise isolated animal populations. Such linkages may serve a local purpose, such as providing a linkage between foraging and denning areas, or they may be regional in nature. Some habitat linkages may serve as migration corridors, wherein animals periodically move away from an area and then subsequently return. Others may be important as

6 US FWS. 2017. *Critical Habitat for Threatened and Endangered Species.*

7 California Natural Diversity Database (CNDDB). 2018. *Biogeographic Information and Observation System (BIOS).*

8 California Native Plant Society (NPS). 2018. *Inventory of Rare and Endangered Plants.*

9 USFWS. 2018. *Endangered and Threatened Species Search*

dispersal corridors for young animals. A group of habitat linkages in an area can form a wildlife corridor network. [10]

The habitats within the link do not necessarily need to be the same as the habitats that are being linked. Rather, the link merely needs to contain sufficient cover and forage to allow temporary inhabitation by ground-dwelling species. Typically habitat linkages are contiguous strips of natural areas, though dense plantings of landscape vegetation can be used by certain disturbance-tolerant species. Depending upon the species using a corridor, specific physical resources (such as rock outcroppings, vernal pools, or oak trees) may need to be located within the habitat link at certain intervals to allow slower-moving species to traverse the link. For highly mobile or aerial species, habitat linkages may be discontinuous patches of suitable resources spaced sufficiently close together to permit travel along a route in a short period of time. [11]

Wildlife movement corridors can be both large and small scale. The mountainous regions of Tulare County may support wildlife movement on a regional scale, while riparian corridors, waterways, flood control channels, canals, contiguous habitat, and upland habitat on levees may provide more local scale opportunities for wildlife movement throughout the County.

The CDFW BIOS (2018) mapped four essential connectivity areas within Tulare County. Two are located in the southwestern portion of the County, one is in the center, and the largest runs down through the center and eastern portions of Tulare County from the north. In western Tulare County, one essential connectivity area is associated with Lakeland and Homeland Canals and a portion of the Tule River while the other occurs in the vicinities of Deer Creek and the White River. Essential connectivity areas in western Tulare County show considerable overlap with the Pixley National Wildlife Refuge. The most essential connectivity area in eastern Tulare County occurs along the Sierra Nevada Range in eastern Tulare County.

Seven important movement corridors are also identified from the report, *Missing Linkages: Restoring Connectivity to the California Landscape.*[12] These areas are identified as important movement corridors for species such as San Joaquin kit fox, steelhead, beaver, riparian birds, and other small carnivores.

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10 Bennett, Andrew, 2003. *Linkages in the Landscape.*

11 Ibid.

12 Penrod, K., R. Hunter, and M. Merrifield. 2001. *Missing Linkages: Restoring Connectivity to the California Landscape, Conference Proceedings*. Cosponsored by California Wilderness Coalition, The Nature Conservancy, U.S. Geological Survey, Center for Reproduction of Endangered Species, and California State Parks.

4.4.1.6 Habitat Conservation Plans (HCP) and Recovery Plans

There are two habitat conservation plans (HCPs) located in Tulare County.

The Kern Water Bank Habitat Conservation Plan applies to Tulare County, but is restricted to one area in Allensworth. Created in 1997 with the intention of protecting wetland habitats, the Kern Water Bank HCP establishes a land management system that allows the land to be used primarily as a water bank, but also encourages the re-emergence of native habitat. [13]

The PG&E San Joaquin Valley Operations & Maintenance HCP applies to portions of Tulare County, as well as nine other counties in the Central Valley, covering a total of 276,350 acres. Beginning in 2007 with a duration of 30 years, the HCP intends to mitigate and minimize any adverse impacts on species by operations and maintenance activities by PG&E in the area.[14]

The Recovery Plan for Upland Species of the San Joaquin Valley is not an HCP but is an important plan regarding species conservation in Tulare County. It covers 34 plant and animal species, including 11 listed species that are important in the San Joaquin Valley. With the goal to delist threatened species and protect habitat remnants from human activities and non-native plants, the Recovery Plan is intended to recover species within 20 years. The six elements of the Recovery Plan that comprise the ecosystem approach to community-level recovery include: recovery criteria, habitat protection, umbrella and keystone species, a monitoring and research program, adaptive management, and economic and social considerations.[15]

4.4.2 REGULATORY FRAMEWORK

4.4.2.1 Federal

Federal Endangered Species Act (16 USC Section 1531 et seq.)

The USFWS and National Marine Fisheries Service (for marine species), under the auspices of the Federal Endangered Species Act of 1973 (FESA), manage and protect species listed as Endangered or Threatened. The USFWS can issue a permit for incidental "take" of listed species that can result from otherwise lawful activities. Take, under the federal definition, means to harass, harm (including habitat modification), pursue, hunt, shoot, wound, kill, trap, capture, or collect, or attempt to engage in any such conduct. Under federal regulation (50 CFR Sections 17.3, 222.102) "harm" is further defined to include habitat

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13 Kern Water Bank Authority. 1997. KWBA *Habitat Conservation Plan.*

14 Pacific Gas and Electric Company (PG&E). 2018. *Habitat Conservation Plans.*

15 US FWS. 1998. *The Recovery Plan for Upland Species of the San Joaquin Valley.*

modification or degradation where it would be expected to result in death or injury to listed wildlife by significantly impairing essential behavioral patterns, including breeding, feeding, or sheltering. FESA Section 10(a) allows USFWS to permit the incidental take of listed species if such take is accompanied by an HCP that includes components to minimize and mitigate impacts associated with the take.

Critical habitat is a specific geographic area(s) that is essential for the conservation of a threatened or endangered species and that may require special management and protection. The listing process for individual species may include designation of critical habitat. Critical habitat may include an area that is not currently occupied by the species but that will be needed for its recovery.

FESA Section 7 outlines procedures for federal interagency cooperation to conserve federally listed species and designated critical habitat. Section 7(a)(2) and its implementing regulations require federal agencies to consult with USFWS to ensure that they are not undertaking, funding, permitting, or authorizing actions likely to jeopardize the continued existence of listed species, or result in the destruction or adverse modification of critical habitat. For projects where federal action is not involved and take of a listed species may occur, the project proponent may seek to obtain an incidental take permit under FESA Section 10(a).

Candidate species do not have the full protection of the FESA; however, the USFWS advises applicants that candidate species could be elevated to listed species at any time.

Migratory Bird Treaty Act (16 USC Section 703-711)

The Migratory Bird Treaty Act (MBTA) of 1918, implemented by the USFWS, is an international treaty that makes it unlawful to take, possess, buy, sell, purchase, or barter any migratory bird listed in 50 CFR Part 10, including feathers or other parts, nests, eggs, or products, except as allowed by implementing regulations (50 CFR Part 21). The MBTA requires that project-related disturbance at active nesting territories be reduced or eliminated during critical phases of the nesting cycle (1 February to 31 August, annually).

Bald and Golden Eagle Protection Act (16 USC Section 668)

The Bald and Golden Eagle Protection Act provides for the protection of the bald eagle (the national emblem) and the golden eagle by prohibiting, except under certain specified conditions, the taking, possession, and commerce of such birds. If compatible with the preservation of bald and golden eagles, the Secretary of the Interior may permit the taking, possession and transportation of bald and golden eagles and nests for scientific or religious purposes, or for the protection of wildlife, agricultural, or other interests. The Secretary of the Interior may authorize the take of golden eagle nests, which interfere with

resource development or recovery operations. Bald eagles may not be taken for any purpose unless the Secretary issues a permit prior to the taking.

Clean Water Act (33 USC Sections 1252-1376)

Under Section 404 of the CWA, the US Army Corps of Engineers (USACE) has jurisdiction over "waters of the United States," including "wetlands." The term "waters of the US" includes (1) all waters that are or may be used in interstate or foreign commerce (including sightseeing or hunting), including all waters subject to the ebb and flow of the tide; (2) wetlands; (3) all waters such as interstate lakes, rivers, streams, mudflats, sand flats, wetlands, sloughs, prairie potholes, wet meadows, playa lakes, or natural ponds, the use, degradation or destruction of which could affect interstate or foreign commerce; (4) all impoundments of water mentioned above; (5) all tributaries of waters mentioned above; (6) the territorial seas; and (7) all wetlands adjacent to the waters mentioned above.

Section 404 permits are required for discharges of dredged or fill materials into waters of the United States, including wetlands.. Permits authorized by USACE under the CWA typically involve mitigation to offset unavoidable impacts on wetlands and other waters of the United States in a manner that achieves no net loss of wetland acres or values.

The use of an authorized Nationwide Permit or issuance of an individual permit requires the project applicant to demonstrate compliance with the USACE's Final Compensatory Mitigation Rule. USACE requires mitigation for impacts to regulated resources. The concept of "no let loss" of wetlands functions and values is an important aspect of USACE's outlook on mitigation. The goal of no net loss has evolved; the most current national direction is available in the Final Compensatory Mitigation Rule.[16] This compensatory mitigation process seeks to replace the loss of existing aquatic resource functions and area. Project proponents required to complete mitigation are encouraged to use a watershed approach and watershed planning information. The Compensatory Mitigation Rule establishes performance standards, sets timeframes for decision making, and to the extent possible, establishes equivalent requirements and standards for the three sources of compensatory mitigation:

- Permittee-responsible mitigation
- Contribution of in-lieu fees (second in preference)
- Use of mitigation bank credits (preferred)

16 US Army Corps of Engineers (USACE). 2015. *Final Compensatory Mitigation Rule.*

In accordance with Section 401 of the CWA, applicants for a Section 404 permit must obtain water quality certification from the appropriate Regional Water Quality Control Board (RWQCB), in this case Central Valley RWQCB, indicating that the discharge will not violate California water quality standards.

Executive Order 11990, Protection of Wetlands (May 24, 1977)

This Executive Order establishes a national policy to avoid adverse impacts on wetlands whenever there is a practicable alternative. On projects with federal actions or approvals, impacts on wetlands must be identified in the environmental document. Alternatives that avoid wetlands must be considered. If wetland impacts cannot be avoided, then all practicable measures to minimize harm to those wetlands must be included. This can be documented in a specific Wetlands Only Practicable Alternative Finding in the final environmental document for a proposed individual improvement project.

Section 10 of the Rivers and Harbors Act (33 USC 401 et seq.)

Section 10 of the Rivers and Harbors Act is administered by the USACE. This Section requires permits in "navigable waters" of the United States for all structures such as riprap and activities such as dredging. Navigable waters are defined as those subject to the ebb and flow of the tide and susceptible to use in their natural condition or by reasonable improvements as means of interstate transport or foreign commerce. The USACE grants or denies permits based on the effects on navigation. Most activities covered under this act are also covered under Section 404 of the CWA, and the USACE administers Section 10 and Section 404 permitting in a coordinated fashion.

National Environmental Policy Act

The National Environmental Policy Act (NEPA) is implemented by regulations included in the Code of Federal Regulations (40 CFR § 1500 *et seq*.), which require careful consideration of the harmful effects of federal actions or plans, including projects that receive federal funds, if they may have a significant adverse effect on the environment. NEPA mandates that all federal agencies carry out their regulations, policies, and programs in accordance with NEPA's policies of environmental protection. NEPA encourages the protection of all aspects of the environment and requires federal agencies to utilize a systematic, interdisciplinary approach to agency decision-making that will ensure the integrated use of natural sciences such as geology. While NEPA compliance is not required for the 2018 RTP/SCS, NEPA compliance will be required for transportation improvement projects that will be financed using federal funds. Some development projects (such as low-income housing) also use federal funds and are subject to NEPA.

4.4.2.2 State

California Endangered Species Act (State Fish and Game Code Section 2050 et seq.).

Pursuant to CESA, a permit from CDFW is required for projects that could result in the taking of a plant or animal species that is state listed as threatened or endangered. Under CESA, "take" means hunt, pursue, catch, capture, or kill, or attempt to hunt, pursue, catch, capture, or kill. The CESA definition of take does not include "harm" or "harass," as the FESA definition does. As a result, the threshold for take is higher under CESA than under FESA. Authorization for take of state-listed species may be obtained through a Section 2080.1 consistency determination (for applicants who have already obtained a federal incidental take statement or permit for the same species) or a Section 2081 Incidental Take Permit.

Native Plant Protection Act (Fish and Game Code Sections 1900-1913)

This Act establishes a listing process and protections for "rare" or "endangered" plants. When CESA was enacted in 1984, the list of endangered plants from the Native Plant Protection Act was included in CESA's list of endangered plants. Rare plants receive no CESA protection. Plants are no longer proposed for listing under the Native Plant Protection Act, and the Act today has little regulatory effect compared to CESA.

Fish and Game Code Sections 1600–1616

The CDFW, through provisions of the Fish and Game Code Sections 1600–1616, is empowered to issue agreements (Lake or Streambed Alteration Agreements) for projects that would "divert or obstruct the natural flow of, or substantially change or use any material from the bed, channel, or bank of, any river, stream, or lake, or deposit or dispose of debris, waste, or other material containing crumbled, flaked, or ground pavement where it may pass into any river, stream, or lake" (Fish and Game Code Section 1602[a]). Streams and rivers are defined by the presence of a channel bed and banks, and subject to water flow. The limits of CDFW jurisdiction are also based on riparian habitat and may include riparian areas that do not meet USACE criteria for wetlands soils and/or hydrology (e.g., where riparian woodland canopy extends beyond the banks of a stream away from frequently saturated soils).

Natural Community Conservation Planning Act (Fish and Game Code Section 2800 et seq.)

The Natural Community Conservation Planning (NCCP) Act of 2003 provides for the preparation and approval of NCCPs. NCCPs identify and provide for the regional or area-wide protection of plants and animals, including their habitats, and are intended to preserve local and regional biological diversity,

reconcile urban development and wildlife needs, as well as "conserve" state-listed species to the point where they can be delisted, and maintain or enhance conditions for covered species such that listing will not become necessary. The NCCP Act was amended in 2011 to allow CDFW to authorize incidental take of "fully protected" species if they are "covered species" under an approved NCCP.

Fully Protected Species (Fish and Game Code Sections 3511, 4700, 5050, and 5515)

Protection of fully protected species is described in Fish and Game Code Sections 3511, 4700, 5050, and 5515. These statutes prohibit take or possession of fully protected species. Incidental take of fully protected species may only be authorized under an approved NCCP.

Protection of Birds, Nests, and Raptors (Fish and Game Code Sections 3503 and 3503.5)

Fish and Game Code Section 3503 states that it is unlawful to take, possess, or needlessly destroy the nest or eggs of any bird. Section 3503.5 specifically states that it is unlawful to take, possess, or destroy any raptors (i.e., species in the orders *Falconiformes* and *Strigiformes*), including their nests or eggs. Typical violations of these codes include destruction of active nests resulting from removal of vegetation in which the nests are located. Violation of Section 3503.5 could also include failure of active raptor nests resulting from disturbance of nesting pairs by nearby project construction. These code sections do not provide for the issuance of any type of incidental take permit.

4.4.2.3 Local

Tulare County General Plan

The Tulare County General Plan includes policies for protection of biological resources in Tulare County. The General Plans of the smaller cities contain similar policies regarding environmental protections such as the preservation of natural open space, habitat linkages, and native vegetation.

The County's General Plan includes an Environmental Resources Management Chapter, which includes a goal to protect biological resources. Policies applicable to the implementation of the 2018 RTP/SCS include the following:

Tulare County General Plan 2030 Update

- **ERM-1.1 Protection of Rare and Endangered Species:** The County shall ensure the protection of environmentally sensitive wildlife and plant life, including those species designated as rare, threatened, and/or endangered by State and/or Federal government, through compatible land use development.

- **ERM-1.2 Development in Environmentally Sensitive Areas:** The County shall limit or modify proposed development within areas that contain sensitive habitat for special status species and direct development into less significant habitat areas. Development in natural habitats shall be controlled so as to minimize erosion and maximize beneficial vegetative growth.

- **ERM-1.3. Encourage Cluster Development:** When reviewing development proposals, the County shall encourage cluster development in areas with moderate to high potential for sensitive habitat.

- **ERM-1.4 Protect Riparian Areas:** The County shall protect riparian areas through habitat preservation, designation as open space or recreational land uses, bank stabilization, and development controls.

- **ERM-1.5 Riparian Management Plans and Mining Reclamation Plans:** The County shall require mining reclamation plans and other management plans to include measures that protect, maintain, and restore riparian resources and habitats.

- **ERM-1.6 Management of Wetlands:** The County shall support the preservation and management of wetland and riparian plant communities for passive recreation, groundwater recharge, and wildlife habitats.

- **ERM-1.7 Planting of Native Vegetation:** The County shall encourage the planting of native trees, shrubs, and grasslands in order to preserve the visual integrity of the landscape, provide habitat conditions suitable for native vegetation and wildlife, and ensure that a maximum number and variety of well-adapted plants are maintained.

- **ERM-1.8 Open Space Buffers:** The County shall require buffer areas between development projects and significant watercourses, riparian vegetation, wetlands, and other sensitive habitats and natural communities. These buffers should be sufficient to assure the continued existence of the waterways and riparian habitat in their natural state.

- **ERM-1.9 Coordination of Management on Adjacent Lands:** The County shall work with other government land management agencies (such as the Bureau of Land Management, US Forest Service, National Park Service) to preserve and protect biological resources while maintaining the ability to utilize and enjoy the natural resources in the County.

- **ERM-1.10 Appropriate Access for Recreation:** The County shall encourage appropriate access to resource-managed lands.

- **ERM-1.11 Hunting and Fishing:** The County shall provide opportunities for hunting and fishing activities within the County pursuant to appropriate regulations of the California Fish & Game Code.

- **ERM-1.12 Management of Oak Woodland Communities:** The County shall support the conservation and management of oak woodland communities and their habitats.

- **ERM-1.13. Pesticides:** The Tulare County Agricultural Commissioner/Sealer will cooperate with State and Federal agencies in evaluating the side effects of new materials and techniques in pesticide controls to limit effects on natural resources.

- **ERM-1.14 Mitigation and Conservation Banking Program:** The County shall support the establishment and administration of a mitigation banking program, including working cooperatively with TCAG, Federal, State, not-for-profit and other agencies and groups to evaluate and identify appropriate lands for protection and recovery of threatened and endangered species impacted during the land development process.

- **ERM-1.15 Minimize Lighting Impacts:** The County shall ensure that lighting associated with new development or facilities (including street lighting, recreational facilities, and parking) shall be designed to prevent artificial lighting from illuminating adjacent natural areas at a level greater than one foot candle above ambient conditions.

- **ERM-1.16 Cooperate with Wildlife Agencies:** The County shall cooperate with State and federal wildlife agencies to address linkages between habitat areas.

- **ERM-1.17 Conservation Plan Coordination:** The County shall coordinate with local, State, and federal habitat conservation planning efforts (including Section 10 Habitat Conservation Plan) to protect critical habitat areas that support endangered species and other special-status species.

4.4.3 ENVIRONMENTAL IMPACTS

4.4.3.1 Thresholds of Significance

For the purposes of this PEIR, TCAG has determined that implementation of the proposed 2018 RTP/SCS would result in significant impacts to biological resources, if any of the following could occur:

- Have a substantial adverse effect, either directly or through habitat modification, on any species identified as a candidate, sensitive, or special-status species in local or regional plans, policies, or regulations or by CDFW or USFWS.

- Have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, or regulations, or by the California CDFW or USFWS.
- Have a substantial adverse effect on federally protected wetlands, as defined by CWA Section 404 (including, but not limited to marsh and vernal pools) through direct removal, filling, hydrological interruption, or other means.
- Interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites.
- Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance.
- Conflict with the provisions of an adopted HCP, NCCP, or other approved local, regional, or state habitat conservation plan.

4.4.3.2 Methodology

This section summarizes the methodology used to evaluate the impacts of implementation of the 2018 RTP/SCS on biological resources in the TCAG region. The 2018 RTP/SCS transportation projects and growth projections are regional, cumulative, and long-term in nature, and provide a conservative estimate of environmental impacts.

Determination of Significance

The impact assessment for biological resources focuses on significant effects of the Plan on biological resources contained within the County. The methodology for determining the significance of these impacts compares a regional-level analysis of the future Plan conditions to existing biological resources.

As noted above, areas within the region contain extensive biological resources. Generally, with regard to biological impacts, the greater the change from existing conditions, the more significant the impact to the biological resources. For example, the construction of a new roadway generally has a greater impact on biological resources than the widening of an existing one. Road widening, however, can have significant local impacts, especially when requiring the removal of trees and existing biological habitats, or when construction of noise barriers is necessary.

The development of new transportation facilities may affect biological resources, either by directly affecting a habitat or through indirect effects to adjacent areas. The region contains numerous biological resources; therefore, the potential for impacts to biological resources exists. Improvements within existing rights-of-way are less likely to substantially affect existing biological resources; however, new highway segments near biological resources would constitute a significant impact. In addition, reducing buffer

zones between transportation corridors and reduction of biological resources through lane widening could cause significant impacts.

4.4.3.3 Impacts and Mitigation Measures

Impact BIO-1 **Have a substantial adverse effect, either directly or through habitat modification, on any species identified as a candidate, sensitive, or special-status species in local or regional plans, policies, or regulations or by CDFW or USFWS**

The CNDDB search identified several documented special- status species, listed in **Table 4.4-1**, occurring in Tulare County. Most of the transportation improvements proposed under the 2018 RTP/SCS consist of minor expansions of existing facilities that would likely not involve construction in habitats for candidate, sensitive, or special-status species.. As mentioned above, there are 248 special status species known to occur or with potential to occur within Tulare County, the majority of which are plant species. Thirty six of these species (25 animal species and 11 plant species) are given high levels of protection by the federal government through listing under FESA and/or by the State government through listing under CESA. The remaining species are protected through local ordinances. Most special-status species have very limited ranges and have specific habitat requirements. Special status species may also tend to be associated with sensitive habitats, such as riparian habitats and drainages.

Some species require localized microhabitats, while others are highly mobile and may occur throughout the County. Impacts to sensitive species would not necessarily be limited to those recorded or mapped by the CNDDB. The CNDDB system relies on reported sightings of sensitive species, and is not a complete inventory of all sensitive species or their habitats. Special-status species may be directly or indirectly affected by RTP projects if the improvements are to encroach on their habitat or movement corridors. Below is a brief description of the special status species that are present in the region and their habitat requirements. (Refer to Biological Resources Appendix 4.4 for additional information.

Wildlife. There are 73 special-status wildlife species that have the potential to occur in Tulare County. Of these 73 species, 11 are classified as Endangered.[17]

Plants. There are 175 special-status plant species that have the potential to occur in Tulare County.[18]

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17 California Natural Diversity Database (CNDDB). 2018. *Biogeographic Information and Observation System (BIOS*).

18 Ibid.

Construction and maintenance activities associated with transportation and land use projects developed in accordance with the 2018 RTP/SCS could result in the direct loss or indirect disturbance of special-status plant species that grow or could grow in the region. Project-related construction and maintenance could also result in loss or disturbance of special-status animal species or their habitats. Impacts on special-status plant species could result in a substantial reduction in local population size, lowered reproductive success, or habitat fragmentation. Impacts on special-status wildlife or their habitat could result in a substantial reduction in local population size, lowered reproductive success, or habitat fragmentation.

Significant impacts on special-status wildlife associated with transportation projects can include:

- direct mortality from the collapse of underground burrows, resulting from soil compaction;
- direct mortality resulting from the movement of equipment and vehicles through the project area;
- increased mortality caused by higher numbers of automobiles on new or widened roads in migration corridors;
- loss of breeding and foraging habitat resulting from the filling of seasonal or perennial wetlands;
- loss of breeding, foraging, and refuge habitat resulting from the permanent removal of riparian vegetation;
- abandoned eggs or young and subsequent nest failure for special-status nesting birds, including raptors, as a result of construction-related noises;
- loss of suitable foraging habitat for special-status raptor species; and
- loss of migration corridors resulting from the construction of permanent building structures or features.

Projects such as those that occur over or in the vicinity of rivers and creeks are within suitable habitat for species such as California red-legged frog (*Rana draytonii*) (Federally Threatened and State Species of Special Concern) and Little Kern golden trout (*Oncorrhynchus aguabonita whitei*) (Federally Threatened).

In addition to the rivers and creeks that may be impacted, future transportation projects under the 2018 RTP/SCS could impact upland habitats and the sensitive plant and animal species that may occupy them. For example, coast horned lizards (Phrynosoma blainvillii), a State Species of Special Concern, may be present in scrub, grassland and some woodland habitats near roads where projects could occur. Several special status bat species may be affected by proposed projects where they occur under bridges or similar structures, or in native habitat adjacent to construction areas. Furthermore, the wide variety of habitats within the 2018 RTP/SCS area can support many species of nesting birds, including sensitive species such

as the State-threatened Swainson's hawk (*Buteo swainsoni*) and the State Species of Special Concern burrowing owl (*Athene cunicularia*). Disturbance of special-status plants such as the federal and state Endangered California jewel-flower (*Caulanthus californicus*) could result in reductions in local population size, habitat fragmentation, or lower reproductive success.

Direct impacts to special status species include injury or mortality occurring during implementation and/or operation of projects under the 2018 RTP/SCS. TCAG estimates that implementation of the RTP would result in the loss of 144 acres of critical habitat. These impacts would occur as a direct result of implementation of RTP projects and the SCS land use pattern. Direct impacts also include habitat modification and loss such that it results in the mortality or otherwise alters the foraging and breeding behavior substantially enough to cause injury. Indirect impacts could be caused by the spread of invasive non-native species that out-compete native species and/or alter habitat towards a state that is unsuitable for special status species. For example, the spread of certain weed species can reduce the biodiversity of native habitats, potentially eliminating special status plant species and reducing the availability of suitable forage and breeding sites for special status animal species. Indirect impacts could also result from increased access by humans and domestic animals, particularly in areas where trails may be planned. Increased human and domestic animal (especially dogs) presence foster the spread of non-native invasive plant species and disrupt the normal behaviors of animal species.

In addition to direct and indirect impacts that may result from transportation improvement projects, the 2018 RTP/SCS also envisions increased development in urbanized areas.TPAs are those areas that offer high quality transit. TPAs are generally developed and generally would not support sensitive habitats or species. This 2018 RTP/SCS focuses future development within existing urbanized areas.. However, it is possible that sensitive plant and animal species could be located in TPAs. As a result, infill development could impact plant and animal species that may be present on or in proximity to undeveloped infill parcels. Many special status animal species are associated with creeks and could be located even in the most densely developed urban areas. Both native and non-native trees and shrubs throughout urban areas may support nesting birds and other sensitive species.

Based upon the general nature of the 2018 RTP/SCS, development of detailed, project-specific information on this impact is not feasible. Each implementing agency and/or lead agency would conduct appropriate project-level environmental review and be responsible for identification of mitigation measures for any significant effects on the environment. Based on the above analysis, impacts on sensitive or special status species related to land use and transportation changes from construction and ongoing operations resulting from implementation of the proposed 2018 RTP/SCS are considered significant for **Impact BIO-1**. Mitigation is required. **Mitigation Measures MM-BIO-1(a)** through **MM-BIO-1(b)** are described below.

Level of Significance Before Mitigation

Significant.

Mitigation Measures

MM-BIO-1(a): Consistent with the provisions of Section 15091 of the *State CEQA Guidelines*, TCAG has identified mitigation measures capable of avoiding or reducing the significant effects on threatened and endangered species and other special status species that are in the jurisdiction and responsibility of local agencies (land use projects) and implementing agencies (transportation projects). Where the Lead Agency has identified that a project has the potential for significant effects, the Lead Agency can and should consider mitigation measures to minimize impacts to sensitive and special status species, ensuring compliance with Sections 7, 9, and 10(a) of the federal Endangered Species Act; the California Endangered Species Act; the Native Plant Protection Act; and the State Fish and Game Code; and related applicable implementing regulations, as applicable and feasible. Such measures include but are not limited to the following:

- Redesign or modify projects to avoid direct and indirect impacts on special status plants, if feasible.
- Protect special-status plants near project sites by installing environmentally sensitive area fencing (orange construction barrier fencing) around special-status plant populations. The environmentally sensitive area fencing should be installed at least 20 feet from the edge of the population.
- Where avoidance is determined to be infeasible, provide conservation measures to fulfill the requirements of the applicable authorization for incidental take pursuant to Section 7 or 10(a) of the federal Endangered Species Act or Section 2081 of the California Endangered Species Act to support issuance of an Incidental take permit. A wide variety of conservation strategies have been successfully used to protect the survival and recovery in the wild of federally and state-listed endangered species, including:
  - Avoidance strategies
  - Contribution of in-lieu fees
  - Use of mitigation bank credits
  - Funding of research and recovery efforts
  - Habitat restoration

  - Conservation easements
  - Permanent dedication of habitat
  - Other comparable measures

- Develop and implement a Worker Awareness Program (environmental education) to inform project workers of their responsibilities in regard to avoiding and minimizing impacts on sensitive biological resources.
- Appoint an Environmental Inspector to monitor implementation of mitigation measures.
- Schedule construction activities to avoid sensitive times for biological resources (e.g. steelhead spawning periods during the winter and spring, nesting bird season) and to avoid the rainy season when erosion and sediment transport is increased.
- Conduct pre-construction monitoring to delineate occupied sensitive species' habitat to facilitate avoidance. Where projects are determined to be within suitable habitat of listed or sensitive species that have specific field survey protocols or guidelines outlined by the USFWS, CDFW, or other local agency, conduct preconstruction surveys that follow applicable protocols and guidelines and are conducted by qualified and/or certified personnel.

Level of Significance After Mitigation

Because this PEIR evaluates impacts at the programmatic level, all project circumstances are not foreseeable, and this mitigation measure may not be feasible or effective for some projects. Therefore, even with implementation of **Mitigation Measures MM-BIO-1(a)**, impacts would remain significant and unavoidable. No additional feasible mitigation measures are available to reduce significant and unavoidable impacts beyond those identified in this PEIR.

Impact BIO-2 **Have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, regulations, or by CDFW or USFWS;**

Impact BIO-3 **Have a substantial adverse effect on federally protected wetlands, as defined by CWA Section 404 (including, but not limited to, marsh, and vernal pools) through direct removal, filling, hydrological interruption, or other means.**

Projects that may be implemented under the 2018 RTP-SCS have the potential to impact sensitive natural communities. Some examples of potential impacts include, but are not limited to, construction and

reconstruction/widening of bridges over rivers and creeks, such as the Tule River and Porter Slough. These types of projects would have potential to impact riparian areas, as well as water bodies.

In addition, projects in the vicinity of rivers and creeks may involve development along riparian corridors. Riparian areas provide wildlife habitat and movement corridors, enabling both terrestrial and aquatic organisms to move along river systems between areas of suitable habitat. Construction of transportation and land use projects implementing the 2018 RTP/SCS could have both direct impacts associated with the disturbance of riparian flora and fauna, and indirect impacts caused by increased erosion and sedimentation.

Some of the terrestrial and wetlands resources found within the project area are of global as well as regional significance, and are therefore considered sensitive natural communities. Wetlands, including vernal pools scattered throughout Tulare County, and riparian habitat along rivers and tributaries, provide essential habitat for a host of Endangered and Threatened plant and animal species. Many other organisms, without official status, depend upon these sensitive natural communities to complete their lifecycles. The sensitive natural communities within the area that are currently rare enough to be listed in the CNDDB are included in **Table 4.4-1**.

Direct impacts to sensitive natural communities include loss of habitat during construction of projects. Indirect impacts include habitat degradation caused by the introduction of invasive plant species incidentally from construction equipment and through selection of invasive landscape plants, as well as erosion of disturbed areas. Based on GIS analysis performed by TCAG, under the 2018 RTP/SCS 144 acres of critical habitat would be consumed by 2042, a 0.03% reduction of the 428,800 acres estimated to be present in Tulare County.

Development of land use projects that would occur as a result of implementation of the 2018 RTP/SCS would also have the potential to result in the loss of riparian habitat. However, much of the development under the Plan would be in urbanized areas that do not have substantial amounts of high quality sensitive natural communities. Nevertheless, development would occur outside infill areas as well, and could affect sensitive natural communities..

Due to the number of transportation projects that would be implemented as a result of the proposed 2018 RTP/SCS, and the large area affected by land use development, the Plan could substantially affect riparian and wetland habitat.

As discussed above, TPAs generally aim to encourage compact development that consumes less land, and therefore, less habitat than traditional development. TPAs will also be concentrated in urbanized areas where fewer sensitive natural community resources are present. As a result, future infill projects are likely to result in only limited impacts riparian habitat or sensitive natural communities, though some parcels that have been relatively free of ground disturbance may contain remnants of sensitive native habitats such as valley saltbush scrub and northern hardpan vernal pool. Furthermore, some areas of disturbed habitats, such as annual grasslands, may be considered sensitive natural communities due to the unique assemblage of native plants, such as areas dominated by native wildflowers..

Impacts on riparian habitat or other sensitive natural communities and federal-protected wetlands, related to land use and transportation changes from construction and ongoing operations resulting from implementation of the 2018 RTP/SCS are considered significant for **Impact BIO-2 and Impact BIO-3.** Mitigation is required. **Mitigation Measures MM-BIO-1(a) MM-BIO-1(b)** are applicable as well as **MM-BIO-2(a) and MM BIO-3(a)** described below.

Level of Significance Before Mitigation

Significant.

Mitigation Measures

MM-BIO-2(a): Consistent with the provisions of Section 15091 of the *State CEQA Guidelines*, TCAG has identified mitigation measures capable of avoiding or reducing the significant impacts on designated sensitive natural communities, including riparian habitats, that are in the jurisdiction and responsibility of local agencies (land use projects) and implementing agencies (transportation projects). Where the Lead Agency has identified that a project has the potential for significant effects, the Lead Agency can and should consider mitigation measures to minimize impacts to sensitive natural communities, ensuring compliance with Section 1600 of the State Fish and Game Code; implementing regulations of the U.S. Fish and Wildlife Service, the National Marine Fisheries Service, and the California Department of Fish and Wildlife; and other related federal, state, and local regulations, as applicable and feasible. Such measures include but are not limited to the following:

- Consult with the USFWS, NMFS, and CDFW where such designated sensitive natural communities, including riparian habitats, provide potential or occupied habitat for federally- and state-listed rare, threatened, and endangered species afforded protection pursuant to the federal Endangered Species Act and/or birds under the Migratory Bird Treaty Act.

- Comply with CDFW requirements for Lake and Streambed Alteration Agreements pursuant to the provisions of Section 1600 of the State Fish and Game Code.
- Require project design to avoid sensitive natural communities and riparian habitats, wherever practicable and feasible.
- Where avoidance is determined to be infeasible, develop sufficient conservation measures through coordination with regulatory agencies (i.e., USFWS or CDFW) to protect sensitive natural communities and riparian habitats.
- Install fencing and/or mark sensitive natural communities to be avoided during construction activities.
- Salvage and stockpile topsoil (the surface material from 6 to 12 inches deep) and perennial plants for use in restoring native vegetation to all areas of temporary disturbance within the project area.
- Revegetate with appropriate native vegetation following the completion of construction activities.
- Complete habitat enhancement (e.g., through removal of non-native invasive wetland species and replacement with more ecologically valuable native species).
- Use Best Management Practices (BMPs) at construction sites to minimize erosion and sediment transport from the area. BMPs include encouraging growth of vegetation in disturbed areas, using straw bales or other silt-catching devices, and using settling basins to minimize soil transport.

MM-BIO-3(a): Consistent with the provisions of Section 15091 of the *State CEQA Guidelines*, TCAG has identified mitigation measures capable of avoiding or reducing the significant impacts on federally-protected wetlands that are in the jurisdiction and responsibility of local agencies (land use projects) and implementing agencies (transportation projects).. Where the Lead Agency has identified that a project has the potential for significant effects, the Lead Agency can and should consider mitigation measures to minimize impacts on federally-protected wetlands, ensuring compliance with Section 404 of the Clean Water Act and regulations of the USACE, and other applicable federal, state and local regulations, as applicable and feasible. Such measures include but are not limited to the following:

- Require review of construction drawings by a certified wetland delineator as part of each project-specific environmental analysis to determine whether wetlands will be affected and, if necessary, perform a formal wetland delineation.

- Require project design to avoid federally protected wetlands consistent with the provisions of Section 404 of the Clean Water Act, wherever practicable and feasible.

- Where avoidance is determined to be infeasible, develop sufficient compensatory mitigation measures, consistent with EPA's and USACE's Final Compensatory Mitigation Rule to fulfill the requirements of the applicable authorization for impacts to federally protected wetlands to support issuance of a permit or other authorization under Section 404 of the Clean Water Act, ensuring no net loss of wetlands functions or values.

Level of Significance After Mitigation

Because this PEIR evaluates impacts at the programmatic level, all project circumstances are not foreseeable and this mitigation measure may not be feasible or effective for some projects. Therefore, even with implementation of **Mitigation Measures MM-BIO-1(a), MM-BIO-1(b), MM BIO 2(a)**, and **MM BIO 3(a)** impacts would remain significant and unavoidable. No additional feasible mitigation measures are available to reduce significant and unavoidable impacts beyond those identified in this PEIR.

Impact BIO-4 **Interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites.**

Most transportation projects in the 2018 RTP/SCS involve expansion of existing facilities in urbanized or already developed areas, rather than the construction of new or extension of existing infrastructure into undeveloped portions of Tulare County. Several individual projects could, however, increase human activity in areas where sensitive biological resources could occur. In particular, proposed bridge, trail and bikeway, and new road construction projects could increase human activity in the vicinity of migratory wildlife corridors.

Direct impacts to wildlife movement include increased noise and human presence during construction, as well as increased trash, which may attract predators to the project site and discourage wildlife use of surrounding natural habitat. The effect of bridge construction may produce similar results with regards to the disruption of migratory fish patterns, although the operation of such bridges is not anticipated to influence fishes, once built. Increased roadway traffic, due to the division of habitat and corridors, may affect surrounding wildlife and lead to increased wildlife mortality. Indirect impacts include invasion of natural habitats by non-native species and increased presence of humans and domestic animals over the

long-term. In addition, transportation improvement projects could include new segments of fencing or walls, both temporary and permanent, that that could hinder wildlife movement.

The 2018 RTP/SCS land use scenario would encourage infill development, but development would occur outside infill areas as well, and could affect wildlife movement. The majority of the future infill would be on parcels that provide limited or no wildlife movement. However, areas that provide even limited movement can be critical for many species, as development continues to shrink natural spaces and isolate native habitat occupied by both sensitive and common native wildlife species. Therefore, impacts on wildlife movement, corridors, or nurseries related to land use and transportation changes resulting from implementation of the proposed 2018 RTP/SCS are considered significant for **Impact BIO-4.** Mitigation is required. **Mitigation Measure MM BIO-4(a)** and **MM BIO-4(b)** are described below.

Level of Significance Before Mitigation

Significant.

Mitigation Measures

MM-BIO-4(a): Consistent with the provisions of Section 15091 of the *State CEQA Guidelines*, TCAG has identified economically-viable mitigation measures capable of avoiding or reducing the significant impacts on migratory fish or wildlife species or within established native resident and/or migratory wildlife corridors, and native wildlife nursery sites that are in the jurisdiction and responsibility of local agencies (land use projects) and implementing agencies (transportation projects). Where the Lead Agency has identified that a project has the potential for significant effects, the Lead Agency can and should consider mitigation measures to ensure compliance with regulations of the USFWS, USFS, CDFW, and related regulations, as well as the goals and polices of counties and cities, as applicable and feasible. Such measures may include may include the following:

- Consult with the USFWS, USFS, CDFW, Tulare County and cities in the County, where impacts to birds afforded protection pursuant to the Migratory Bird Treaty Act during the breeding season may occur.
- Prohibit construction activities within 500 feet of occupied breeding areas for wildlife afforded protection pursuant to Title 14 § 460 of the California Code of Regulations protecting fur-bearing mammals, during the breeding season.
- Conduct a survey to identify active raptor and other migratory nongame bird nests by a qualified biologist at least two weeks before the start of construction at project sites from February 1 through August 31.

- Prohibit construction activities with 250 feet of occupied nest of birds afforded protection pursuant to the Migratory Bird Treaty Act, during the breeding season.

- Ensure that suitable nesting sites for migratory nongame native bird species protected under the Migratory Bird Treaty Act and/or trees with unoccupied raptor nests should only be removed prior to February 1, or following the nesting season.

- Conduct site-specific analyses of opportunities to preserve or improve habitat linkages with areas on- and off-site. Analyze habitat linkages/wildlife movement corridors on a broader and cumulative impact analysis scale to avoid adverse impacts from linear projects that have potential for impacts on a broader scale, and to avoid critical narrow choke points that could reduce function of recognized movement corridors on a larger scale. Require review of project designs and habitat connectivity mapping provided by the CDFW or CNDDB by a qualified biologist to determine the risk of habitat fragmentation.

- Pursue mitigation banking to preserve habitat linkages and corridors (opportunities to purchase, maintain, and/or restore offsite habitat).

- Design projects to avoid adverse effects on the movement of native resident or migratory fish or wildlife species, wildlife movement corridors, or wildlife nursery, wherever practicable and feasible.

- Install wildlife fencing where appropriate to minimize the probability of wildlife injury due to direct interaction between wildlife and roads or construction.

- Where avoidance is determined to be infeasible, design sufficient conservation measures through coordination with local agencies and the regulatory agency (i.e., USFWS or CDFW) and in accordance with applicable general plans to establish plans to mitigate for the loss of fish and wildlife movement corridors and/or wildlife nursery sites. The consideration of conservation measures may include the following measures**.** where applicable:

  – Wildlife movement buffer zones

  – Corridor realignment

  – Appropriately spaced breaks in center barriers

  – Stream rerouting

  – Culverts

  – Creation of artificial movement corridors such as freeway under- or overpasses

  – Other comparable measures

Level of Significance After Mitigation

Because this PEIR evaluates impacts at the programmatic level, all project circumstances are not foreseeable and this mitigation measure may not be feasible or effective for some projects. Therefore, even with implementation of **Mitigation Measure MM-BIO-4(a),** impacts to wildlife movement would remain significant and unavoidable. No additional feasible mitigation measures are available to reduce significant and unavoidable impacts beyond those identified in this PEIR.

Impact BIO-5 **Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance;**

Impact BIO-6 **Conflict with the provisions of an adopted habitat conservation plan (HCP), natural communities conservation plan (NCCP), or other approved local, regional, or state habitat conservation plan.**

Construction and maintenance activities associated with projects in the 2018 RTP/SCS could result in conflicts with local policies or ordinances, such as existing HCPs, UWMPs, and Valley Oak Ordinances that protect locally-significant biological resources.

Individual 2018 RTP/SCS transportation and development projects must comply with the habitat conservation plans discussed above. Projects will be reviewed by lead agencies to ensure that the biological impacts are within the parameters established by the applicable specific plan(s). The 2018 RTP/SCS transportation and land use projects will be reviewed on a project-by-project basis. The review may include, but is not limited to, a preliminary biological resource screening and/or a biological resources assessment.

Individual projects under the 2018 RTP/SCS will be reviewed by lead agencies to ensure compliance with existing HCPs and carefully monitored so that they do not inhibit the progress of conservation planning initiatives. However, despite future projects being evaluated under CEQA and by lead agencies on an individual basis, it is still possible that they would present conflicts with existing policies, ordinances, or plans regarding biological conservation and protections. As such, the impact is considered to be significant and unavoidable.

Level of Significance Before Mitigation

Significant.

Mitigation Measures

MM-BIO-5(a): Consistent with the provisions of Section 15091 of the *State CEQA Guidelines*, TCAG has identified mitigation measures capable of avoiding or reducing the significant effects on biological resources protected by local ordinance that are in the jurisdiction and responsibility of local agencies (land use projects) and implementing agencies (transportation projects). Where the Lead Agency has identified that a project has the potential to significantly affect such biological resources, the Lead Agency can and should consider mitigation measures to minimize such impacts by encouraging compliance with the applicable ordinance and by facilitating mitigation as feasible at the regional level for example by facilitating mitigation banks.

MM-BIO-6(a): Consistent with the provisions of Section 15091 of the *State CEQA Guidelines*, TCAG has identified mitigation measures capable of avoiding or reducing the significant effects on areas within an HCP or NCCP that are in the jurisdiction and responsibility of local agencies (land use projects) and implementing agencies (transportation projects). Where the Lead Agency has identified that a project has the potential to significantly affect such areas, the Lead Agency can and should consider mitigation measures to minimize such impacts by encouraging avoidance of conservation areas and where avoidance is infeasible facilitating appropriate mitigation such as in kind land replacement and mitigation banking.

Level of Significance After Mitigation

Because this PEIR evaluates impacts at the programmatic level, all project circumstances are not foreseeable and this mitigation measure may not be feasible or effective for some projects. Therefore, even with implementation of **Mitigation Measure MM-BIO-5(a)** and **Mitigation Measure MM-BIO-6(a)**, impacts to resources protected by ordinance and the potential to conflict with provisions of an HCP or NCCP are considered significant and unavoidable. No additional feasible mitigation measures are available to reduce significant and unavoidable impacts beyond those identified in this PEIR.

4.4.4 CUMULATIVE IMPACTS

Species Identified As A Candidate, Sensitive, Or Special-Status Species

The 2018 RTP/SCS would result in significant impacts to sensitive and special status species. The 2018 RTP/SCS, in combination with other regional projects (i.e., RTP/SCS plans of adjacent jurisdictions), has the potential to result in similar impacts to sensitive and special status species within and outside Tulare

County. This could occur directly through habitat modification, or indirectly through urbanization. Therefore, the 2018 RTP/SCS would have a cumulatively considerable significant impact related to sensitive and special status species that would add to cumulative impacts Valley-wide and statewide. Implementation of **Mitigation Measure MM-BIO-1(a)** would reduce impacts. However, project impacts would remain cumulatively considerable.

Sensitive Natural Communities and Federally-Protected Wetlands

The 2018 RTP/SCS would result in a significant impact to sensitive natural communities and federally-protected wetlands. The 2018 RTP/SCS in combination with other regional projects such as RTP/SCS plans of adjacent jurisdictions), has the potential to result in similar impacts to riparian habitat within and outside Tulare County. This could occur directly through habitat modification or indirectly through urbanization of previously undeveloped areas. Therefore, the 2018 RTP/SCS would have a significant impact on sensitive natural communities and federally-protected wetlands that would add to cumulative impacts Valley-wide and statewide. Implementation of **Mitigation Measures MM-BIO-2(a)** and **MM-BIO-3(a)** would reduce impacts; however, project impacts would remain significant.

Wildlife Movement

The 2018 RTP/SCS would result in a significant impact to wildlife movement and corridors. The 2018 RTP/SCS in combination with other regional projects (such as RTP/SCS plans of adjacent jurisdictions), has the potential to result in similar impacts to wildlife movement and corridors within and outside Tulare County. This could occur directly through road construction, increased roadway traffic, habitat modification or indirectly through urbanization of previously undeveloped areas. Therefore, the 2018 RTP/SCS would have a significant impact that would add to Valley-wide and statewide impacts related to wildlife movement and corridors. Implementation of **Mitigation Measure MM-BIO-4(a)** would reduce impacts. However, project impacts would remain significant.

Preservation Plans

Impacts related to preservation plans would be significant, as future individual projects cannot be properly evaluated at the time of the 2018 RTP/SCS. Projects developed under the 2018 RTP/SCS, in combination with other projects could result in impacts to preservation plans and could require close monitoring and evaluation at the local level, prior to implementation**.** As such, the 2018 RTP/SCS would result in a significant impact to preservation plans that could add to Valley-wide and statewide impacts. **Mitigation Measures MM-BIO-5(a)** and **MM-BIO-6(a)** would reduce impacts but not to a less than significant level.

4.5 CULTURAL RESOURCES

This section addresses the existing cultural resources (including Tribal Cultural Resources) within the region and evaluates the significance of the changes in cultural resources that could result from development of the 2018 RTP/SCS. In addition, as appropriate and feasible, mitigation measures are identified to reduce significant impacts.

4.5.1 ENVIRONMENTAL SETTING

Tulare County contains a rich array of cultural resources, including prehistoric and historical archaeological sites, paleontological sites, historical buildings, and structures associated with agriculture, mining, and petroleum development. Properties important to Native American communities and other ethnic groups, including tangible properties possessing intangible traditional cultural values, also are present. Such resources may exist individually, in groupings of modest size, or in districts covering substantial geographies. **Table 4.5-1, Historical Resources in Tulare County,** provides a list of known historical resources in Tulare County.

Table 4.5-1
Historical Resources in Tulare County

Name (Landmark/Plaque Number)	National Register	California Historical Landmark	California Points of Historical Resource	City/Census Designated Place
Allen I. Russell Tree			X	Springville
Allensworth Historic District/N158	X			Allensworth
Artesian Well, Pixley			X	Pixley
Ash Mountain Entrance Sign/N595	X			Three Rivers
Bank of Italy Building/N1086	X			Visalia
Barton-Lackey Cabin/N573	X			Mineral King
Butterfield Stage Route/471		X		Lindsay
Butterfield Overland Mail Route			X	Ducor
Cabin Creek Ranger Residence and Dormitory/N596	X			Wilsonia
Cairns Corner			X	Visalia
Cattle Cabin/N518	X			Three Rivers
Charter Oak or Election Tree/410		X		Visalia
Elster, C.A., Building/N1082	X			Springville
Exeter Public Library	X			Exeter
Father Daniel F. Dade Academy of the Nativity			X	Visalia
First Congregational Church/N2043	X			Porterville

Name (Landmark/Plaque Number)	National Register	California Historical Landmark	California Points of Historical Resource	City/Census Designated Place
First Tule River Indian Reservation/388		X		Porterville
Fountain Springs/648		X		Fountain Springs
Fremont Trail			X	Lindsay
Generals' Highway Stone Bridges/N663	X			Mineral King
George S. Berry Marker			X	Lindsay
Giant Forest Lodge Historic District/N603	X			Three Rivers
Giant Forest Village-Camp Kaweah Historic District/N619	X			Three Rivers
Groenfeldt Site/N574	X			Three Rivers
Hockett Meadow Ranger Station/N597	X			Silver City
Hog Wallow Preserve			X	Exeter
Hospital Rock/N515	X			Three Rivers
Hyde House/N770	X			Visalia
Ina Stiner Home			X	Porterville
Jordan Trail			X	Exeter
Kaweah Post Office, Kaweah Colony/389		X		Kaweah
Klink Station Marker			X	Ivanhoe
Liberty Elementary School			X	Visalia
Lone Oak Cemetery			X	Ivanhoe
Mineral King Road Cultural Landscape/N2217	X			Mineral King
Mooney Grove			X	Visalia
Moro Rock Stairway/N736	X			Three Rivers
Old State Road	X			Fountain Springs
Orosi Branch Library/N1230	X			Orosi
Pear Lake Ski Hut/N604	X			Mineral King
Plano Marker			X	Porterville
The Pioneer/N493	X			Visalia
Porterville Flour Mill			X	Porterville
Pogue Hotel/N1718	X			Lemoncove
Quinn Ranger Station/N488	X			Mineral King
Redwood Meadow Ranger Station/N587	X			Three Rivers
Sequoia Field—Visalia-Dinuba School of Aeronautics/N2097	X			Visalia
Squatter's Cabin/N476	X			Three Rivers
Tailholt/413		X		Fountain Springs
Temporary Detention Camps for Japanese Americans-Tulare Assembly Center/934		X		Tulare
Tenalu/N1460	X			Porterville
Tharp's Log/N477	X			Porterville
Tulare Union High School Auditorium and Administration Building/N2078	X			Tulare
Tule River Stage Station/473		X		Porterville
US Post Office—Porterville Main/N1339	X			Porterville

Name (Landmark/Plaque Number)	National Register	California Historical Landmark	California Points of Historical Resource	City/Census Designated Place
US Post Office—Visalia Town Center Station/N1340	X			Visalia
Wilcox Family Monument			X	Porterville
Wilsonia Historic District/N1938	X			Wilsonia
Woodville School Marker			X	Tulare
Zalud House/N1494	X			Porterville

Source: California Office of Historic Preservation, website, 2013; Tulare County General Plan 2030 Update EIR

4.5.1.1 Prehistory

Tulare County was first inhabited by California Native American tribes consisting of the Foothill Yokuts, Southern Valley Yokuts, Tubatulabal, and Monache. The largest amount of territory was that of the Southern Valley Yokuts.[1]

At the time of European contact, it is estimated that the Yokuts population numbered between 11,000 and 31,000 individuals. They were primarily concentrated along waterways and on the eastern side of the San Joaquin River.[1,2] Their settlements consisted of single-family dwellings, sweathouses, and ceremonial structures. The Yokuts' subsistence was centered on the water resources of the San Joaquin Valley. Yokut technology included coiled basketry, stone and bone tools, and tule rafts.[1]

The Tubatulabal people lived along the southern Sierra Nevada foothills, close to the drainages of both the Kern and South Fork Kern rivers. They subsisted primarily on fishing, supplementing their diets with hunting and gathering. Tubatulabal material culture consisted of baskets of tule reeds, tree yucca roots, and deer grass, pottery made from red clay, bow and arrow, nets, traps, snares, and various stone and bone tools.[3]

The Monache people lived along the western slopes of the Sierra Nevada in what is today Tulare County. Their settlements tended to be small, and they focused on hunting, fishing, and plant gathering. Deer

1 Wallace, William J. 1978. Southern Valley Yokuts. In California, edited by Robert F. Heizer, pp. 448-461. *Handbook of North American Indians*, Vol. 8, William C. Sturtevant, general editor, Smithsonian Institution, Washington.

2 Latta, Frank F. 1999. *Handbook of Yokuts Indians*. Coyote Press, Salinas, California.

3 Smith, Charles R. 1978. Tubatulabal. In *California,* edited by Robert F. Heizer, pp. 437-445. Handbook of North American Indians, Vol. 8, William C. Sturtevant, general editor, Smithsonian Institution, Washington.

were a primary staple, along with acorns and pine nuts. Monache technology consisted of stone tools, particularly those of obsidian, bow and arrow, coiled basketry, and pottery.[4]

History

The first Europeans to explore California's coast were Spanish and Russian military expeditions during the late 1500s. However, European settlement did not occur until the arrival into southern California of land-based expeditions originating in Spanish Mexico. The early groups arrived during the 1760s, and consisted of Spanish military, Mexican Indian, Franciscan missionary, and citizen colonists. Thus, began what is today known as the Spanish Period (1769-1822). This period includes the establishment of a chain of 21 Franciscan missions, constructed in old California, from San Diego to Sonoma. With the establishment of the missions came the exertion of Spanish religious and military authority over California's indigenous population, and the development of presidios, civilian ranchos, and pueblos throughout California. Although the region known today as Tulare County did not come under the jurisdiction of a mission proper, periodically small numbers of indigenous tribal members fleeing the control of distant missions would enter the valley.[5]

In 1822, the colonial territory of Mexico won its independence from Spain, and established a republic. Because it lay strategically situated within the new republic's northern frontier, California remained a territory of Mexico, and home to a new group of ranchers and settlers that arrived to take advantage of large land grants being offered by the new government. During the 1840s, Mexico awarded five grants (known as ranchos) on what later became Tulare County lands.[6]

In 1846, hostilities between Mexico and the United States led to war. Two years later (1848), war ended, and the United States and Mexico signed the Treaty of Guadalupe Hidalgo. As part of the post-war arrangements, Mexico ceded California and the Southwest to the United States. In 1848- 1849, the discovery of gold in northern California brought to the state tens of thousands of itinerant miners, merchants, and speculators. By 1850, the huge influx of prospective citizens allowed California to skip the usual stage of territorial status, and enter the union as a state. Two years later (1852), Tulare County was formed from the southern portion of Mariposa County. And, although Tulare County is listed today as the seventh largest of California's 58 counties by land size (containing approximately 4,840 square miles), several other counties were carved from Tulare after its formation, including Fresno (1856), Kern (1860), Inyo (1866), and Kings Counties (1893).[6]

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4 Spier, Robert F. G. 1978. Monache. In California, edited by Robert F. Heizer, pp. 426-436. Handbook of North American Indians, Vol. 8., William C. Sturtevant, general editor, Smithsonian Institution, Washington.

5 Tulare County. Tulare County General Plan Recirculated Draft EIR (p 3.12-9). February, 2010.

In the mid-nineteenth century, settlement in the Tulare County area focused on ranching. In 1872, the Southern Pacific Railroad entered Tulare County, connecting the San Joaquin Valley with markets in the north and east. About the same time, valley settlers constructed a series of water conveyance systems (canals, dams, and ditches) across the San Joaquin Valley. With ample water supplies and the assurance of rail transport for commodities such as grain, row crops, and fruit, a number of farming colonies soon appeared throughout the region. Colonies such as Mt. Whitney, Orosi, Oakview, Holliday, Vina, and McCall's offered affordable farmland, water, and modern transportation. The colonies grew to become cities such as Tulare, Visalia, Porterville, and Hanford. Visalia, the county seat, became the service, processing, and distribution center for the growing number of farms, dairies, and cattle ranches. By 1900, Tulare County boasted a population of about 18,000. New transportation links such as Highway 99 (completed during the 1950s), affordable housing, light industry, and agricultural commerce brought steady growth to the entire San Joaquin Valley area.[6]

Archaeology and Historic Sites

Information on Tulare County archaeology and historic sites was gathered from the State Office of Historic Preservation as well as the Tulare County Historical Society. Sensitive sites include burial grounds, important village sites, and other buried historical resources protected under State and federal laws. The San Joaquin Valley is rich in such sites, and part of a local government's cultural resources program should include the education of project participants, agency representatives, and concerned citizens as to the laws, codes, and ordinances that forbid the collecting of items such as grave goods, arrowheads, glass, and pottery associated with archaeological sites of any kind.

Table 4.5-1 shows historical resources in the County. The table includes sites listed on the National Register of Historic Places, State Historic Landmarks, and Historical Sites as identified by the Tulare County Historical Society. The resources listed in **Table 4.5-1** are only those that are available to the general public. Tulare County includes 35 National Historic Register listings, 8 California Historical Landmarks, and an additional 18 Historical Sites as identified by the county historical society.

Tule River Reservation

The Tule River Tribe has an established reservation within Tulare County. The Tule River Reservation was established by Executive Order of President Ulysses S. Grant on January 9, 1873. The Tule River Indian Reservation is estimated to cover around 85 square miles of the foothill region in Tulare County.[6] The reservation is located in a rural area approximately 20 miles east of Porterville. The reservation is

6 Tule River Tribe. http://www.tulerivertribe-nsn.gov/. Accessed: March 2018

accessible only by one winding paved road.[7] As seen in **Table 4.5-1**, a list of historical resources in the County includes the First Tule River Indian Reservation (California Historical Landmark No. 473) established in 1873 and located in Porterville, before it was moved to its present location.[8]

4.5.1.5 Paleontological Resources

Generally, scientifically significant paleontological resources are identified sites or geologic deposits containing individual fossils or assemblages of fossils that are unique or unusual, diagnostically or stratigraphically important, and add to the existing body of knowledge in specific areas, stratigraphically, taxonomically, or regionally. Particularly important are fossils found in situ (undisturbed) in primary context (e.g., fossils that have not been subjected to disturbance subsequent to their burial and fossilization). As such, they aid in stratigraphic correlation, particularly those offering data for the interpretation of tectonic events, geomorphological evolution, paleoclimatology, the relationships between aquatic and terrestrial species, and evolution in general.

Discovery of in situ fossil bearing deposits is rare for many species, especially vertebrates. Terrestrial vertebrate fossils are often assigned greater significance than other fossils because they are rare relative to other types of fossils. This is primarily due to the fact that the best conditions for fossil preservation include little or no disturbance after death, and quick burial in oxygen depleted, fine-grained sediments. These conditions often exist in marine settings, but they are relatively rare in terrestrial settings because of pyroclastic flows, flashflood events, and various other factors. This has ramifications on the amount of scientific study needed to adequately characterize an individual species, and therefore, affects how relative sensitivities are assigned to formations and rock units.

Note that significance may also be stated for a particular rock unit, predicated on the research potential of fossils suspected to occur in that unit. Such significance is often stated as "sensitivity" or "potential." In most cases, decisions about how to manage paleontological resources must be based on this potential because the actual situation cannot be known until construction excavation for the project is underway. The following tripartite scale has been used by Caltrans[9] in assessing resources in Tulare County:

- **High Potential** - Rock units which, based on previous studies, contain or are likely to contain significant vertebrate, significant invertebrate, or significant plant fossils. These units include, but are not limited to, sedimentary formations that contain significant nonrenewable paleontological resources anywhere within their geographical extent, and sedimentary rock units temporally or

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7 Tule River Reservation. History. http://www.tulerivertribe-nsn.gov/index.php/history/. Accessed: March 2018.

8 California Office of Historic Preservation. Historical Landmark: First Tule River Indian Reservation. http://ohp.parks.ca.gov/ListedResources/Detail/388. Accessed: March 2018.

9 California Department of Transportation (Caltrans). Standard Environmental Reference, Chapter 8 Paleontology. http://www.dot.ca.gov/ser/vol1/sec3/physical/Ch08Paleo/chap08paleo.htm. Accessed: April 2018.

lithologically suitable for the preservation of fossils. These units may also include some volcanic and low-grade metamorphic rock units. Fossiliferous deposits with very limited geographic extent or an uncommon origin (e.g., tar pits and caves) are given special consideration and ranked as highly sensitive. High sensitivity includes the potential for containing (1) abundant vertebrate fossils; (2) a few significant fossils (large or small vertebrate, invertebrate, or plant fossils) that may provide new and significant taxonomic, phylogenetic, ecologic, and/or stratigraphic data; (3) areas that may contain datable organic remains older than Recent, including Neotoma (sp.) middens; or (4) areas that may contain unique new vertebrate deposits, traces, and/or trackways. Areas with a high potential for containing significant paleontological resources require monitoring and mitigation.

- **Low Potential** - This category includes sedimentary rock units that (1) are potentially fossiliferous, but have not yielded significant fossils in the past; (2) have not yet yielded fossils, but possess a potential for containing fossil remains; or (3) contain common and/or widespread invertebrate fossils if the taxonomy, phylogeny, and ecology of the species contained in the rock are well understood. Sedimentary rocks expected to contain vertebrate fossils are not placed in this category because vertebrates are generally rare and found in more localized stratum. Rock units designated as low potential generally do not require monitoring and mitigation.

- **No Potential** - Rock units of intrusive igneous origin, most extrusive igneous rocks, and moderately to highly metamorphosed rocks are classified as having no potential for containing significant paleontological resources. For projects encountering only these types of rock units, paleontological resources can generally be eliminated as a concern.

Fossils are the remains or imprints of once-living organisms that have been preserved in sediments or rocks. Because one of the most common locations where fossils are found is in sedimentary rock deposits, many fossils have been identified in cliffs, ledges, or terraces where large sections of vertical or near-vertical rock has been exposed.

Invertebrate and vertebrate fossil sites are examined in different ways by professional paleontologists. Examples of invertebrates discovered in fossil sites include foraminifera and diatoms. These are usually marine in origin, fairly widespread, well-preserved, and largely predictable in location. Vertebrate fossils are more often associated with continental material, and when compared to invertebrate fossils, are relatively rare and localized.

There are 12 paleontological resources that have been recorded in Tulare County, most of which are in the valley area.[10] These include invertebrate, vertebrate, and plant fossils.

4.5.2 REGULATORY FRAMEWORK

Cultural resources are regulated at the federal, state, and local levels as discussed below.

10 Tulare County, Tulare County Revised General Plan 2030 Update, August, 2012.

4.5.2.1 Federal

National Environmental Policy Act

The National Environmental Policy Act (NEPA) is implemented by regulations included in the Code of Federal Regulations (40 CFR § 1500.), which require careful consideration of the harmful effects of federal actions or plans, including projects that receive federal funds, if they may have a significant adverse effect on the environment. NEPA mandates that all federal agencies carry out their regulations, policies, and programs in accordance with NEPA's policies of environmental protection. NEPA encourages the protection of all aspects of the environment and requires federal agencies to utilize a systematic, interdisciplinary approach to agency decision-making that will ensure the integrated use of natural sciences such as geology.

NEPA addresses a wide range of environmental issues including the documentation of, and evaluation of potential impacts to, cultural and historic properties. Compliance includes an on-site survey by a qualified archaeologist prior to construction. A report of findings may be submitted to the State Historic Preservation Office (SHPO) for further consultation. While NEPA compliance is not required for the adoption of the 2018 RTP/SCS, NEPA compliance will be required for transportation improvement projects that will be financed using federal funds. Some development projects (such as low-income housing) also use federal funds and are subject to NEPA.

United States Department of Transportation Act of 1966 (Section 4[f])

Section 4(f) of the United States Department of Transportation (USDOT) Act of 1966 affords special protection to public recreational lands and facilities, including: local parks and school facilities that are open and available to the general public for recreational purposes; significant cultural resources; historical resources; and natural wildlife refuges. Federally funded transportation improvement projects are prohibited from the encroachment (direct or constructive use, or a take) of Section 4(f) lands unless it can be demonstrated that no feasible and prudent alternative exists.

National Register of Historic Places (National Register)

The National Register recognizes properties that are significant at the national, state, and/or local levels. Although administered by the National Park Service, the federal regulations explicitly provide that National Register listing of private property "does not prohibit under federal law or regulation any actions which may otherwise be taken by the property owner with respect to the property." Listing in the National Register assists in preservation of historic properties through: recognition that a property is of significance to the nation, the state, or the community; consideration in the planning for federal or

federally-assisted projects; eligibility for federal tax benefits; consideration in the decision to issue a surface coal mining permit; and qualification for federal assistance for historic preservation, when funds are available. In addition, for projects that receive federal funding, a clearance process must be completed in accordance with Section 106 of the National Historic Preservation Act (NHPA). Furthermore, state and local regulations may apply to properties listed in the National Register.

The criteria for listing in the National Register follow the standards for determining if properties, sites, districts, structures, or landscapes of potential significance are eligible for nomination. In addition to meeting any or all of the following criteria, properties nominated must also possess integrity of location, design, setting, feeling, workmanship, association, and materials that:

- Are associated with events that have made a significant contribution to the broad patterns of our history;
- Are associated with the lives of persons significant in our past;
- Embody the distinctive characteristics of a type, period, or method of construction or that represent the work of a master, or that possess high artistic values, or that represent a significant and distinguishable entity whose components may lack individual distinction; or
- Yield, or may be likely to yield, information important in prehistory or history.

"Historic integrity" is the ability of a property to convey its significance and is defined as "the authenticity of a property's historic identity, evidenced by the survival of physical characteristics that existed during the property's historic period." The National Register recognizes seven aspects or qualities that comprise integrity: location, design, setting, materials, workmanship, feeling, and association. These qualities are defined as follows:

- Location is the place where the historic property was constructed or the place where the historic event occurred;
- Design is the combination of elements that create the form, plan, space, structure, and style of a property;
- Setting is the physical environment of a historic property;
- Materials are the physical elements that were combined or deposited during a particular period of time and in a particular pattern or configuration to form a historic property;
- Workmanship is the physical evidence of the crafts of a particular culture or people during any given period in history or prehistory;
- Feeling is a property's expression of the aesthetic or historic sense of a particular period of time; and
- Association is the direct link between an important historic event or person and a historic property.

National Historic Preservation Act of 1966 (NHPA)

The NHPA, as amended (54 U.S.C. section 470 *et seq*.), established guidelines to "preserve important historic, cultural, and natural aspects of our national heritage, and to maintain, wherever possible, an environment that supports diversity and a variety of individual choice." The NHPA includes requirements (Section 106) which pertain to all projects that are funded, permitted, or approved by any federal agency and which have the potential to affect cultural resources. Under the Section 106 consultation process (36 CFR section 800 *et seq*.), federal agencies taking such actions are required to consult with the Advisory Council on Historic Preservation (ACHP), State Historic Preservation Officer (SHPO), local agencies, and Indian tribes, and avoid or mitigate adverse effects on National Register-listed or -eligible properties. Provisions of NHPA establish a National Register of Historic Places (National Register); see above for details.

Archaeological and Historic Preservation Act of 1974

Passed and signed into law in 1974, The Archaeological and Historic Preservation Act of 1974 (AHPA), 16 USC Section 469 *et seq*.) amended and expanded the Reservoir Salvage Act of 1960. The AHPA as amended requires that federal agencies provide for the preservation of historical and archaeological data (including relics and specimens) which might otherwise be irreparably lost or destroyed as the result of any alteration of the terrain caused by any federal construction project or federally-licensed activity or program.

Archaeological Resources Protection Act of 1979

The ARPA (16 USC Section 470aa *et seq*.) applies when a project may involve archaeological resources located on federal or tribal land. ARPA requires that a permit be obtained before excavation of an archaeological resource on such land can take place.

The American Indian Religious Freedom Act of 1978

The American Indian Religious Freedom Act of 1978 (AIRFA), 42 USC Section 1996, proclaims that the US Government will respect and protect the rights of Indian tribes to the free exercise of their traditional religions; the courts have interpreted this as requiring agencies to consider the effects of their actions on traditional religious practices.

Native American Graves Protection and Repatriation Act of 1990

The Native American Graves Protection and Repatriation Act of 1990 (NAGPRA), 25 USC Section 3001 *et seq*.), also applies if human remains of Native American origin are discovered on federal or tribal land.

NAGPRA requires federal agencies and federally-assisted museums to return "Native American cultural items" to the federally recognized Indian tribes or Native Hawaiian groups with which they are associated. Regulations (43 CFR Part 10) stipulate the following procedures be followed. If Native American human remains are discovered, the following provisions would be followed to comply with regulations:

- Notify, in writing, the responsible federal agency;
- Cease activity in the area of discovery and protect the human remains;
- Certify receipt of the notification;
- Take steps to secure and protect the remains;
- Notify the Native American tribes or tribes likely to be culturally affiliated with the discovered human remains within one working day; and
- Initiate consultation with the Native American tribe or tribes in accordance with regulations described in 43 CFR, Part 10, Subpart B, Section 10.5.

Archaeology and Historic Preservation; Secretary of the Interior's Standards and Guidelines

Offers non-regulatory technical advice about the identification, evaluation, documentation, study, and other treatment of cultural resources. Notable in these Guidelines are the Standards for Archaeological Documentation, Professional Qualifications Standards for Archaeology, and Standards for the Treatment of Historic Properties.

4.5.2.2 State

California Environmental Quality Act

Under the California Environmental Quality Act (CEQA) a "project that may cause a substantial adverse change in the significance of a historic resource is a project that may have a significant effect on the environment."[11] This statutory standard involves a two-part inquiry. The first involves a determination of whether the project involves a historical resource. If so, then the second part involves determining whether the project may involve a "substantial adverse change in the significance" of the resource. To

11 Public Resources Code Section 21084.1

address these issues, the *State CEQA Guidelines* provide that for the purposes of CEQA compliance, the term "historical resources" shall include the following:[12]

- A resource listed in, or determined to be eligible by the State Historical Resources Commission, for listing in the California Register;

- A resource included in a local register of historical resources, as defined in Section 5020.1(k) of the Public Resources Code or identified as significant in a historical resource survey meeting the requirements in Section 5024.1(g) of the Public Resources Code, shall be presumed to be historically or culturally significant. Public agencies must treat such resources as significant for purposes of CEQA unless the preponderance of evidence demonstrates that it is not historically or culturally significant; and

- Any object, building, structure, site, area, place, record, or manuscript which a lead agency determines to be historically significant or significant in the architectural, engineering, scientific, economic, agricultural, educational, social, political, military, or cultural annals of California may be considered to be a historical resource, provided the lead agency's determination is supported by substantial evidence in light of the whole record. Generally, a resource shall be considered by the lead agency to be 'historically significant' if the resource meets one of the criteria for listing on the California Register.

Section 15064.5 of the *State CEQA Guidelines* also provides that "[s]ubstantial adverse change in the significance of an historical resource means physical demolition, destruction, relocation, or alteration of the resource or its immediate surroundings such that the significance of an historical resource would be materially impaired."[13] Material impairment occurs when a project alters or demolishes in an adverse manner "those physical characteristics of an historical resource that convey its historical significance and that justify its inclusion" in a state or local historic registry.[14]

According to the *CEQA Guidelines* § 15126.4(b)(3) public agencies should, whenever feasible, seek to avoid damaging effects on any historical resource of an archaeological nature. The following factors shall be considered for a project involving such an archaeological site:

- Preservation in place (avoidance) is the preferred manner of mitigating impacts to archaeological sites. Preservation in place maintains the relationship between artifacts and the archaeological context. Preservation may also avoid conflict with religious or cultural values of groups associated with the site.

- Preservation in place may be accomplished by, but is not limited to, the following:

12 *State CEQA Guidelines* Section 15064.5(a)
13 *State CEQA Guidelines* Section 15064.5 (b)(1)
14 *State CEQA Guidelines* Section 15064.5 (b)(2)(A-C)

  - Planning construction to avoid archaeological sites;
  - Incorporation of sites within parks, greenspace, or other open space;
  - Covering the archaeological sites with a layer of chemically stable soil before building tennis courts, parking lots, or similar facilities on the site; and
  - Deeding the site into a permanent conservation easement.

- When data recovery through excavation is the only feasible mitigation, a data recovery plan, which makes provision for adequately recovering the scientifically consequential information from and about the historical resource, shall be prepared and adopted prior to any excavation being undertaken. Such studies shall be deposited with the California Historical Resources Regional Information Center. Archaeological sites known to contain human remains shall be treated in accordance with the provisions of Section 7050.5 Health and Safety Code.
- Data recovery shall not be required for an historical resource if the lead agency determines that testing or studies already completed have adequately recovered the scientifically consequential information from and about the archaeological or historical resource, provided that the determination is documented and that the studies are deposited with the California Historical Resources Regional Information Center.

Office of Historic Preservation

As an office of the California Department of Parks and Recreation, the Office of Historic Preservation (OHP) implements the policies of the NHPA on a statewide level. The OHP also carries out the duties set forth in the Public Resources Code and maintains the California Historic Resources Inventory.

The State Historic Preservation Officer (SHPO) is an appointed official who implements historic preservation programs within the state's jurisdiction.

California Register of Historical Resources (California Register)

The California Register is "an authoritative listing and guide to be used by state and local agencies, private groups, and citizens in identifying the existing historical resources of the state and to indicate which resources deserve to be protected, to the extent prudent and feasible, from substantial adverse change."[15] The criteria for eligibility for the California Register are based upon National Register criteria. These criteria are:

- Criterion 1 – Associated with events that have made a significant contribution to the broad patterns of local or regional history or the cultural heritage of California of the United States;
- Criterion 2 – Associated with the lives of persons important to local, California or national history;

15 Public Resources Code Section 50241 (e)

- Criterion 3 – Embodies the distinctive characteristics of a type, period, region or method of construction or represents the work of a master or possesses high artistic values; and
- Criterion 4 – Has yielded, or has the potential to yield, information important to the prehistory or history of the local area, California or the nation.

The California Register consists of resources that are listed automatically and those that must be nominated through an application and public hearing process. The California Register automatically includes the following:

- California properties listed in the National Register of Historic Places (Category 1 in the State Inventory of Historical Resources) and those formally Determined Eligible for listing in the National Register of Historic Places (Category 2 in the State Inventory);
- California Registered Historical Landmarks from No. 0770 onward; and
- Those California Points of Historical Interest that have been evaluated by the Office of Historic Preservation (OHP) and have been recommended to the State Historical Resources Commission for inclusion in the California Register.

Other resources which may be nominated for listing in the California Register include:

- Historical resources with a significance rating of Categories 3 through 5 in the State Inventory. (Categories 3 and 4 refer to potential eligibility for the National Register, while Category 5 indicates a property with local significance);
- Individual historical resources;
- Historical resources contributing to historic districts; and
- Historical resources designated or listed as a local landmark.

Additionally, a historic resource eligible for listing in the California Register must meet one or more of the criteria of significance described above and retain enough of its historic character or appearance to be recognizable as a historic resource and to convey the reasons for its significance. Historical resources that have been rehabilitated or restored may be evaluated for listing.

California Public Resources Code, Sections 5097.5, 5097.9, 5097.98–99, and 50907.9

Section 5097.5 of the Public Resources Code defines as a misdemeanor the unauthorized disturbance or removal of archaeological, historical, or paleontological resources located on public lands. This Section also prohibits the knowing destruction of objects of antiquity without a permit (expressed permission) on public lands, and provides for criminal sanctions. In 1987, the Code was amended to require consultation

with the California Native American Heritage Commission whenever Native American graves are found. It also established that violations for taking or possessing remains or artifacts are felonies.

Public Resources Code Section 5097.9 establishes the California Native American Heritage Commission to make recommendations to encourage private property owners to protect and preserve sacred places in a natural state and to allow appropriate access to Native Americans for ceremonial or spiritual activities. The Commission is authorized to assist Native Americans in obtaining appropriate access to sacred places on public lands, and to aid state agencies in any negotiations with federal agencies for the protection of Native American sacred places on federally-administered lands in California.

Public Resources Code sections 5097.98 through 5097.99 require that the Governor's California Native American Heritage Commission be consulted whenever Native American graves are found. According to these sections, it is illegal to take or possess remains or artifacts taken from Native American graves; however, it does not apply to materials taken before 1984. Violations occurring after January 1, 1988 are felonies.

Public Resources Code Section 50907.9 (Section 7050 of the Health and Safety Code) authorizes the Native American Heritage Commission (NAHC) to regulate Native American concerns regarding the excavation and disposition of Native American cultural resources. Among its duties, the Commission is authorized to resolve disputes relating to the treatment and disposition of Native American human remains and items associated with burials. Upon notification of the discovery of human remains by a county coroner, the Commission notifies the Native American group or individual most likely descended from the deceased. PRC 5097.98(b) requires that landowners ensure that the immediate vicinity (according to generally accepted cultural or archaeological standards of practices) are not damaged or disturbed by further development until the landowner has discussed and conferred with most likely descendants.

AB 52 and Tribal Cultural Resources

Approved by Governor Brown on September 25, 2014, Assembly Bill 52 (AB 52) establishes a formal notification and, when requested, consultation process for California Native American Tribes to identify significant impacts to Tribal Cultural Resources (TCRs), as defined in Public Resources Code (PRC) section 21074, as part of CEQA. No tribe has requested that TCAG provide formal notification of its proposed projects. Therefore, formal AB 52 consultation was not required for the 2018 RTP/SCS. Tribal cultural resources impacts must nevertheless be considered in this PEIR. Tribal cultural resources are defined in PRC section 21074, subdivision (a), as either: (1) sites, features, places, cultural landscapes, sacred places, and objects with cultural value to a California Native American tribe that are included or determined to be eligible for inclusion in the California Register of Historical Resources, or included in a

local register of historical resources (as defined by statute); or (2) resources determined by the lead agency, and supported by substantial evidence, to be significant pursuant to subdivision (c) of Section 5024.1. If the following resources meet the requirements of subdivision (a), the they also be considered "tribal cultural resources": (1) a cultural landscape that is geographically defined in terms of the size and scope of the landscape; or (2) a historical resource described in Section 21084.1, or a unique archaeological resource defined in subdivision (g) of Section 21083.2, or a "nonunique archaeological resource" as defined in subdivision (h) of Section 21083.2.

4.5.2.3 Local

Tulare County General Plan

The County General Plan's policies relating to historic preservation include the following:

Policy ERM 6.1 The County shall participate in and support efforts to identify its significant cultural and archaeological resources using appropriate State and Federal standards.

Policy ERM 6.2 The County shall protect cultural and archaeological sites with demonstrated potential for placement on the National Register of Historic Places and/or inclusion in the California State Office of Historic Preservation's California Points of Interest and California Inventory of Historic Resources. Such sites may be of Statewide or local significance and have anthropological, cultural, military, political, architectural, economic, scientific, religious, or other values as determined by a qualified archaeological professional.

Policy ERM 6.3 When planning any development or alteration of a site with identified cultural or archaeological resources, consideration should be given to ways of protecting the resources. Development can be permitted in these areas only after a site-specific investigation has been conducted pursuant to CEQA to define the extent and value of resource, and mitigation measures proposed for any impacts the development may have on the resource.

Policy ERM 6.4 If preservation of cultural resources is not feasible, every effort shall be made to mitigate impacts, including relocation of structures, adaptive reuse, preservation of facades, and thorough documentation and archival of records.

Policy ERM 6.6 The County shall support public and private efforts to preserve, rehabilitate, and continue the use of historic structures, sites, and parks. Where applicable, preservation

efforts shall conform to the current Secretary of the Interior's Standards for the Treatment of Historic Properties and Guidelines for Preserving, Rehabilitating, Restoring, and Reconstructing Historic Buildings.

Policy ERM 6.7 The County should encourage the cooperation of property owners to treat cultural resources as assets rather than liabilities, and encourage public support for the preservation of these resources.

Policy ERM 6.8 The County shall continue to solicit input from the local Native American communities in cases where development may result in disturbance to sites containing evidence of Native American activity and/or to sites of cultural importance.

Policy ERM 6.9 The County shall, within its power, maintain confidentiality regarding the locations of archaeological sites in order to preserve and protect these resources from vandalism and the unauthorized removal of artifacts

Policy ERM 6.10 The County shall ensure all grading activities conform to the County's Grading Ordinance and California Code of Regulations, Title 20, § 2501 *et. seq*.

City of Tulare General Plan

The City General Plan's policies relating to historic preservation include the following:

Policy COS- P5.3 The City shall encourage the preservation of historic residences and neighborhoods wherever appropriate.

Policy COS- P5.6 The City shall encourage the protection of cultural and archaeological sites with potential for placement on the National Register of Historic Places and/or inclusion in the California State Office of Historic Preservation's California Points of Interest and California Inventory of Historic Resources. Such sites may be of statewide or local significance and have anthropological, cultural, military, political, architectural, economic, scientific, religious, or other values.

Policy COS- P5.8 The City shall ensure design compatibility of new development within close proximity to designated historic structures and neighborhoods.

Policy COS- P5.9 In the event that archaeological/ paleontological resources are discovered during site excavation, grading, or construction, the City shall require that work on the site be suspended within 100 feet of the resource until the significance of the features can be

determined by a qualified archaeologist/paleontologist. If significant resources are determined to exist, an archaeologist shall make recommendations for protection or recovery of the resource. City staff shall consider such recommendations and implement them where they are feasible in light of project design as previously approved by the City.

Policy COS- P5.11 If preservation of cultural/historical resources is not feasible, the City shall make every effort to mitigate impacts, including relocation of structures, adaptive reuse, preservation of facades, and thorough documentation and archival of records.

Policy COS- P5.12 The City shall develop standards for monitoring mitigation measures established for the protection of historical *resources* prior to development.

City of Visalia General Plan

The City of Visalia General Plan's objectives and policies relating to historic preservation include the following:

Objective H-0-1 Assure the recognition of the City's history through the preservation of historic sites, structures and featuring zoning overlay designation and discretionary review procedures for the Historic District.

Policy H-P-4 Continue to ensure that proposed new development within any Historic District or on any properties listed on the Local Register of Historic Structures is compatible with its surroundings, using criteria of height and scale; spacing of buildings; materials and textures; street walls; landscaping; and other elements which contribute to the historical neighborhood character.

Policy H-P-7 Continue to use the Historic Preservation Ordinance development review process to protect structures listed on the Local Register of Historic Structures or located within the Historic District.

4.5.3 ENVIRONMENTAL IMPACTS

4.5.3.1 Thresholds of Significance

For the purposes of this PEIR, TCAG has determined that the proposed 2018 RTP/SCS could result in significant impacts to archaeological, historical, and/or paleontological resources, if any of the following could occur:

- Cause a substantial adverse change in the significance of a historical structure that is an "historical resource" as defined in *State CEQA Guidelines* Section 15064.5;
- Cause a substantial adverse change in the significance of an archaeological resource pursuant to *State CEQA Guidelines* Section 15064.5;
- Directly or indirectly destroy a unique paleontological resource or site, or unique geologic feature; and
- Disturb any human remains, including those interred outside of formal cemeteries.

With regard to Tribal Cultural Resources, a significant impact would occur if the project would:

- Cause a substantial adverse change in the significance of a tribal cultural resource defined in Public Resources Code section 21074 as either a site, feature, place, cultural landscape that is geographically defined in terms of the size and scope of the landscape, sacred place, or object with cultural value to a California Native American tribe, and that is:
  - listed or eligible for listing in the California Register of Historical Resources, or in a local register of historical resources as defined in Public Resources Code section 5020.1(k), or
  - A resource determined by the lead agency, in its discretion and supported by substantial evidence, to be significant pursuant to criteria set forth in subdivision (c) of Public Resources Code Section 5024.1.

4.5.3.2 Methodology

The analysis assesses the impacts to cultural resources that could result from implementation of the proposed 2018 RTP/SCS. Impacts are assessed for both land use and transportation projects. By 2042, implementation of the proposed 2018 RTP/SCS would result in a land use pattern and transportation network that is different from existing conditions.

Determination of Significance

The methodology for determining the significance of cultural impacts compares the existing conditions to conditions in 2042 under the 2018 RTP/SCS, as required by *State CEQA Guidelines* Section 15126.2(a). The known historical, archaeological, and paleontological resources located within the region were evaluated using the criteria set forth by the OHP, the California Register of Historic Resources, and the *State CEQA Guidelines*. Within the County, the City of Visalia maintains a Local Register of Historical Resources.

Known as the Local Register of Historic Structures, it features approximately 400 buildings, located in the downtown Visalia area. It was most recently updated in 2012.[16]

As noted above, areas within the region contain archaeological localities that are rich with fossil bearing sedimentary formations. All areas within the region have the potential for yielding undiscovered archaeological resources, paleontological resources, and human remains. Known sites are documented at the Southern San Joaquin Valley Information Center (California State University, Bakersfield), which holds location information on archaeological sites in Tulare County. Paleontological sites are also numerous. The development of new transportation facilities as well as new development consistent with the SCS could affect archaeological and paleontological resources, primarily through the disturbance of buried resources. Frequently, these resources are previously unidentified. Therefore, any excavation in previously undisturbed soil or geologic formation has the potential to impact archaeological and paleontological resources.

The construction of new transportation facilities as well as new development consistent with the SCS could affect historical structures (structures 50 years or older are generally eligible for listing in the National Register), either through direct effects to buildings or through indirect effects to the area surrounding a resource through the creation of one or more visually incompatible structures adjacent to a historic structure.

Impacts to cultural resources generally fall into three categories (1) direct disturbance of buried resources; (2) direct impact or alteration of resources/structures; and (3) indirect impacts to structures, such as vibration and corrosive air contaminants, and/or creation of a visually incompatible environment. The County contains a large number of cultural resources; therefore, the potential for impacts to these resources is significant. Improvements within existing rights-of-way and that only affect previously disturbed soils are less likely to affect resources. New structures in historic districts are more likely to result in a significant impact. Similarly, excavation in previously undisturbed soils has a higher potential to impact resources, depending on the location and sensitivity. Also, reducing buffer zones between transportation corridors and historic resources through lane widening or construction of associated structures (such as noise walls) could cause significant impacts.

This PEIR analyzes impacts to cultural resources on a programmatic level; as details of project design and alternatives become available, project-level analysis of impacts is undertaken as appropriate.

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16 City of Visalia. Cultural Resources, Visalia General Plan Update. October 2014. http://www.visalia.city/civicax/filebank/blobdload.aspx?BlobID=30503

4.5.3.3 Impact Analysis

Impact CR-1 Cause a substantial adverse change in the significance of a historic structure that is a historical resource as defined in *CEQA Guidelines* Section 15064.5.

In general, the potential to impact historic structures that are CEQA-defined "historical resources" varies by location and type of project. Historic structures are most prevalent in areas that were initially developed more than 50 years ago. Concentrations of historic structures and the presence of historic districts are thus more likely in developed areas. However, historic structures can still be encountered in isolated areas of older development. Historic structures can also be encountered outside of urban areas in the form of historic mines, mining camps, rural residences, and other historic features.

Within Tulare County, numerous historic structures are listed in and eligible for the National Register of Historic Places (NRHP) or the California Register of Historic Resources (CRHR) (see **Table 4.5-1**), as well as recognized as locally significant under local governments. However, a number of properties containing buildings and structures 50 years old or older have not been formally recorded or evaluated for the NRHP or CRHR. Consequently, it is likely that there are additional historic structures located in the County that are eligible for listing in the NRHP, CRHR, or eligible as locally designated historical resources. For these reasons, the 2018 RTP/SCS plan area contains significant historic structures for the purposes of CEQA.

Construction due to land use and transportation changes may result in construction impacts to historical resources. Ground-disturbing and other activities associated with construction (including vibrations from construction) can result in damage, physical demolition, destruction, relocation, or alteration of historical buildings or structures. Such alterations could result in substantial adverse changes to historically significant resources. If historic structures cannot be completely avoided by project designs, impacts would be significant.

When land use or transportation improvements would disturb, modify, remove, or destroy a historic structure, significant impacts occur. In many cases, these impacts can be reduced to a less than significant level by designing or redesigning the project to avoid the resource, minimizing alterations to the resource and its environs, and/or designing the project to retain historic features, such as facades. In cases involving destruction or wholesale removal of a historic structure and/or loss of the character-defining features, this impact is significant and unavoidable.

After construction, historic structures could also be damaged by activities that result in increased vibrations in the area. Historic structures constructed of fragile materials such as unreinforced masonry, are more susceptible to damage from vibration than modern buildings depending on their materials and

structure. Commercial, residential, and light industrial uses do not routinely involve large vibration sources that affect neighboring buildings. Traffic on roadways is rarely the source of ground-borne vibration because vehicles are supported on spring suspension and pneumatic tires, although heavy trucks can result in vibration that is noticeable. Rail operations however can be a source of ground-borne vibration. Any new or expanded rail operations would have the potential to result in vibration that could expose historic structures to excessive ground-borne vibrations, however, there are no rail projects proposed by the 2018 RTP/SCS. Historic structures can also be impacted by adjacent development that affects the visual context of the structure.

Over the lifespan of the proposed 2018 RTP/SCS, some land use changes and transportation improvements that are located within proximity to one another could be developed concurrently, which can increase the potential for construction of these development projects to result in damage, destruction, or alteration of historic structures due to increased construction vibration. Impacts to structures that are CEQA-defined "historical resources" related to land use and transportation changes from construction projects and ongoing operations resulting from implementation of the proposed 2018 RTP/SCS are considered significant for **Impact CR-1**. Mitigation is required, see **Mitigation Measures MM-CR-1(a)** and **MM-CR-1(b)** described below.

Level of Significance Before Mitigation

Significant.

Mitigation Measures

MM-CR-1(a): Consistent with the provisions of Section 15091 of the *State CEQA Guidelines*, TCAG has identified mitigation measures capable of avoiding or reducing significant effects *on historic resources* that are in the jurisdiction and responsibility of local agencies (land use projects) and implementing agencies (transportation projects). Where the Lead Agency has identified that a project has the potential for significant effects, the Lead Agency can and should consider mitigation measures. Such measures include but are not limited to the following: As part of planning, design, and engineering for projects, implementing and local agencies should ensure that historic resources are treated in accordance with applicable federal, state, and local laws and regulations. When a project has been identified as potentially affecting a historical resource, a historical resources inventory should be conducted by a qualified architectural historian. The study should comply with *State CEQA Guidelines* section 15064.5(b), and, if federal funding or permits are

required, with section 106 of the National Historic Preservation Act (NHPA) of 1966 (16 USC Sec. 470). As applicable, the study should consist of the following elements:

- a records search at the Southern San Joaquin Valley Information Center (California State University, Bakersfield);
- contact with local historical societies, museums, or other interested parties as appropriate to help determine locations of known significant historical resources;
- necessary background, archival and historic research;
- a survey of built environment/architectural resources that are 50 years old or older that may be directly or indirectly impacted by project activities; and
- recordation and evaluation of built environment/architectural resources that are 50 years old or older that may be directly or indirectly impacted by project activities; and
- buildings should be evaluated under CRHR and/or NRHP Criteria as appropriate and recorded on California Department of Parks and Recreation 523 forms.

These elements should be compiled into a Historical Survey Report that should be submitted to the Southern San Joaquin Valley Information Center (California State University, Bakersfield) and should also be used for SHPO consultation if the project is subject to NHPA section 106.

If architectural resources are deemed as potentially eligible for the California Register of Historic Resources or the National Register of Historic Places, implementing and local agencies should consider avoidance through project redesign as feasible and appropriate. If avoidance is not feasible, implementing or local agencies should ensure that historic resources are formally documented through the use of large-format photography, measured drawings, written architectural descriptions, and historical narratives. The documentation should be entered into the Library of Congress, and archived in the California Historical Resources Information System. In the event of building relocation, implementing and local agencies should ensure that any alterations to significant buildings or structures conform to the Secretary of the Interior's Standards for Rehabilitation and Guidelines for Rehabilitating Historic Buildings.

In addition, implementing agencies and local agencies can and should consider the following measures:

- Employ design measures to avoid historical resources, and undertake adaptive reuse where appropriate and feasible, which may include, but is not limited to, preservation of facades. If resources are to be preserved, as feasible, carry out the maintenance, repair, stabilization, rehabilitation, restoration, preservation, conservation or reconstruction in a manner consistent with the Secretary of the Interior's Guidelines for Preserving, Rehabilitating, Restoring, and Reconstructing Historic Buildings. If resources would be impacted, impacts should be minimized to the extent feasible

- Where feasible, noise buffers/walls and/or visual buffers/landscaping should be constructed to preserve the contextual setting of significant built resources.

- Secure a qualified environmental agency and/or architectural historian, or other such qualified person to document any significant historical resource(s), by way of historic narrative, photographs, and architectural drawings, and archiving this information, as mitigation for the effects of demolition of a resource.

- Use construction techniques to reduce potential vibrations related to construction activities, when working near historic resources that may be damaged by vibrations.

- Erect temporary or permanent physical barriers or other protective devices to protect historical resources from disturbance, as appropriate.

- Ensure grading activities conform to local requirements.

- Change land use regulations as appropriate to preserve the value and character of the historic resource.

- Solicit input from tribes and Native American communities where development has a high likelihood of resulting in disturbance of sites containing Native American activity or sites of cultural importance.

Level of Significance After Mitigation

Because this PEIR evaluates impacts at the programmatic level, all project circumstances are not foreseeable and these mitigation measures may not be feasible or effective for some projects. Therefore, even with implementation of **Mitigation Measures MM-CR-1(a)** and **MM-CR-1(b)** impacts could remain significant and unavoidable. No additional feasible mitigation measures are available to reduce significant and unavoidable impacts beyond those identified in this PEIR.

Impact CR-2 Cause a substantial adverse change in the significance of an archaeological resource pursuant to *CEQA Guidelines* Section 15064.5.

The significance of an archaeological resource, and subsequently the significance of any impacts, is determined by whether or not that resource can increase our knowledge of the past. The determining

factors are site content and degree of preservation. A finding of significance follows the criteria established in the *State CEQA Guidelines*, Section 15064.5. Archaeological resources are considered significant when they are either a CEQA-defined "historical resource" or "unique archaeological resource."

Due to extensive agricultural development, prehistoric site probabilities would likely be lower in the southern and western portions of the County. However, it is possible to encounter archaeological deposits in almost any location throughout the County. [17] Therefore, it is possible to encounter known and unknown archaeological resources as a result of transportation improvement projects included in the 2018 RTP/SCS.

Many of the improvements proposed under the 2018 RTP/SCS consist of minor expansions of existing facilities or development in areas that would not involve construction in previously undisturbed areas. Depending on the location and extent of the proposed improvement and the level of ground disturbance, known and/or unknown cultural resources could be impacted. Several roadway connector projects or widenings could adversely impact archaeological resources. In particular, construction activities may damage, destroy, or otherwise disturb the resources, or cause them to be displaced from their original context and integrity. Furthermore, exposing new archaeological sites could speed their deterioration by subjecting such resources to the elements (rain, wind, snow, etc.), vandalism, or other human activities. If such resources are "significant" (i.e., a CEQA-defined "historical resource" or "unique archaeological resource), , this sort of disturbance would result in a significant impact to archaeological resources. Ground-disturbing and other activities associated with construction of land use and transportation projects, as a result of the proposed 2018 RTP/SCS, could result in damage, or destruction of significant archaeological resources.

The nature of project-specific impacts to archaeological resources cannot be fully evaluated without project details since the specific "Area of Potential Effect" for each transportation and land use project cannot be defined. Areas susceptible to potential impacts to archaeological resources include project areas adjacent to natural waterways such as rivers, creeks, and lakes and previously undisturbed lands. Each of the projects included in the 2018 RTP/SCS will require an independent CEQA review at which time the significance of the project-specific impact can be precisely determined. As discussed above, the proposed transportation improvements and the land use pattern envisioned by the 2018 RTP/SCS may impact known and/or unknown archaeological resources. Impacts to archaeological would be significant for **Impact CR-2**. Mitigation is required. See **Mitigation Measure MM-CR-2(a)**.

[17] Tulare County. Tulare County General Plan Recirculated Draft EIR (p 3.12-20). February, 2010.

Level of Significance Before Mitigation

Significant.

Mitigation Measures

MM-CR-2(a): Consistent with the provisions of Section 15091 of the *State CEQA Guidelines*, TCAG has identified mitigation measures capable of avoiding or reducing the significant effects of on archaeological resources within the jurisdiction and responsibility of local agencies (land use projects) and implementing agencies (transportation projects). . Where the Lead Agency has identified that a project has the potential for significant effects, the Lead Agency can and should consider mitigation measures consistent with Section 15064.5 of the *State CEQA Guidelines* capable of avoiding or reducing significant impacts on archaeological resources, to ensure compliance with the National Historic Preservation Act, Section 5097.5 of the Public Resources Code (PRC), state programs pursuant to Sections 5024 and 5024.5 of the PRC, adopted county and city general plans, and other federal, state and local regulations. Such measures include but are not limited to the following:

- Pursuant to CEQA Guidelines Section 15064.5, prior to construction activities, obtain a qualified archaeologist to conduct a record search at the appropriate Information Center to determine whether the project area has been previously surveyed and whether archaeological resources were identified.

- Consult with the NAHC to determine whether known sacred sites are in the project area, and identify the Native American Tribe(s) to contact to obtain information about the project site.

- Comply with Section 106 of the National Historic Preservation Act (NHPA) including, but not limited to, projects for which federal funding or approval is required for the individual project.

- Prior to construction activities, obtain a qualified archaeologist to conduct archaeological surveys as recommended by the Information Center. In the event the records indicate that no previous survey has been conducted, the Information Center will make a recommendation on whether a survey is warranted based on the sensitivity of the project area for archaeological resources.

- If a record search indicates that the project is located in an area rich with cultural materials, retain a qualified archaeologist to monitor any subsurface operations, including but not limited to grading, excavation, trenching, or removal of existing resources from the subject property.

- Design projects and conduct construction and excavation activities to avoid cultural resources (if identified). If avoidance is not feasible, further work may be needed to determine the importance of a resource. Retain a qualified archaeologist familiar with the local archaeology, who should make recommendations regarding the work necessary to determine importance. If the archaeological resource is determined to be important under state or federal guidelines, , impacts on the cultural resource should be mitigated consistent with the requirements of *CEQA Guideline*s § 15126.4(b)(3), which requires that preservation in place be the preferred mitigation strategy if feasible, and that any data recovery plans meet certain requirements.

- Stop construction and excavation activities in the area where cultural resources are found until a qualified archaeologist can determine the importance of these resources. Stabilize surface if necessary to preserve the resources until they can be evaluated.

- Determine if security will be necessary for the area (if theft and/or vandalism is likely). Erecting physical barriers or other protective devices to protect from theft/disturbance.

Level of Significance After Mitigation

Because this PEIR evaluates impacts at the programmatic level, all project circumstances are not foreseeable, and mitigation measures may not be feasible or effective for some projects. Therefore, even with implementation of **Mitigation Measure CR-2(a)**, impacts would remain significant and unavoidable. No additional feasible mitigation measures are available to reduce significant and unavoidable impacts beyond those identified in this PEIR.

Impact CR-3 Cause a substantial adverse change in the significance of a paleontological resource, pursuant to *CEQA Guidelines* Section 15064.5.

Paleontological resources are present throughout Tulare County. Excavation related to construction of transportation projects included in the 2018 RTP/SCS, as well as anticipated development undertaken consistent with the Plan could cause unearthing of buried paleontological resources or other impacts to paleontological resources. Construction occurring in previously undisturbed areas and deep excavation activities would have the greatest likelihood to affect paleontological resources. Excavation and soil removal of any kind, irrespective of depth, has the potential to impact resources of paleontological significance. The extensive distribution of resources makes it difficult to predict where impacts could occur. Construction and excavation activities relating to the RTP/SCS pose a potentially significant impact to paleontological resources.

The 2018 RTP/SCS encourages development in urbanized areas. As urbanized areas have existing transportation and commercial infrastructure, and are highly disturbed, the likelihood of disturbing

paleontological resources or a unique geologic feature during construction activities is low in these areas. Nevertheless, excavation and soil removal of any kind, irrespective of depth, has the potential to encounter paleontological resources.

Most of the RTP/SCS transportation improvements would be constructed within the existing rights-of-way, which is generally considered to have less potential to encounter previously unknown paleontological resources relative to projects in undisturbed/undeveloped areas. However, improvements and modifications within existing rights-of-way still have the potential to damage or destroy undiscovered paleontological resources especially during deeper excavations. Impacts on paleontological resources from the proposed 2018 RTP/SCS are considered significant for **Impact CR-3**. Mitigation is required; see **Mitigation Measure CR-3**.

Level of Significance Before Mitigation

Significant.

Mitigation Measure

MM-CR-3(a): **C**onsistent with the provisions of Section 15091 of the State CEQA Guidelines, TCAG has identified mitigation measures capable of avoiding or reducing the significant effects of on paleontological resources within the jurisdiction and responsibility of local agencies (land use projects) and implementing agencies (transportation projects). . Where the Lead Agency has identified that a project has the potential for significant effects, the Lead Agency can and should consider mitigation measures consistent with Section 15064.5 of the State CEQA Guidelines capable of avoiding or reducing significant impacts on paleontological resources, to ensure compliance with the National Historic Preservation Act, Section 5097.5 of the Public Resources Code (PRC), state programs pursuant to Sections 5024 and 5024.5 of the PRC, adopted county and city general plans, and other federal, state and local regulations. Such measures include but are not limited to the following**:**

During environmental review implementing and local agencies can and should retain a qualified paleontologist to identify, survey, and evaluate paleontological resources where potential impacts are considered high. All construction activities should avoid known paleontological resources, if feasible, especially if the resources in a particular lithologic unit formation have been determined to be unique or likely to contain paleontological resources. If avoidance is not feasible, paleontological resources should be excavated by a

qualified paleontologist and given to a local agency, State University, or other applicable institution, where they could be curated and displayed for public education purposes.

Level of Significance After Mitigation

Because this document evaluates impacts at the programmatic level, all project circumstances are not foreseeable and therefore, even with implementation of **Mitigation Measure CR-3(a)**, impacts are considered significant and unavoidable. No additional feasible mitigation measures are available to reduce significant and unavoidable impacts beyond those identified in this PEIR.

Impact CR-4 Disturb any human remains, including those interred outside of formal cemeteries.

Humans have occupied the Tulare County region for at least 10,000 years and it is not always possible to predict where human remains may occur outside of formal burials. Therefore, it is possible that excavation and construction activities, regardless of depth, may yield human remains that may not be interred in marked, formal burials. Construction activities for each transportation improvement would generally be within 150 feet on either side of any improvement and could result in a significant impact relative to the discovery of human remains. Similarly, construction of development projects throughout the region has the potential to encounter human remains. Under CEQA, human remains are protected under the definition of archaeological materials. Human remains are also protected under NAGPRA, which was enacted to provide protection to Native American graves, as well as culturally affiliated items, associated funerary objects, unassociated funerary objects, sacred objects, and objects of cultural patrimony.

2018 RTP/SCS land use and transportation projects have the potential to encounter previously undiscovered human remains, because some projects would take place in previously undisturbed areas, or areas with only little previous disturbance. Excavation and soil removal of any kind, irrespective of depth, has the potential to encounter human remains. Thus, construction impacts from implementation of the proposed 2018 RTP/SCS are considered significant for **Impact CR-3**. Mitigation is required to reduce this impact; see **Mitigation Measures MM-CR-2(a)** and **MM-CR-4(a)**.

Level of Significance Before Mitigation

Significant.

Mitigation Measure

Implementation of **Mitigation Measure MM-CR-2(a).**

MM-CR-4(a): Consistent with the provisions of Section 15091 of the *State CEQA Guidelines*, TCAG has identified mitigation measures capable of avoiding or reducing the significant effects to human remains that are within the jurisdiction and responsibility of local agencies (land use projects) and implementing agencies (transportation projects). Where the Lead Agency has identified that a project has the potential for significant effects, the Lead Agency should consider mitigation measures capable of avoiding or reducing significant impacts on human remains, to ensure compliance with the California Health and Safety Code, Section 7060 and Sections 18950-18961, and Native American Heritage Commission requirements, as applicable and feasible, and all other applicable federal, state, and local laws. Such measures include but are not limited to the following:

In the event of discovery or recognition of any human remains during construction or excavation activities, or any ongoing maintenance or operations, implementing and local agencies should cease further excavation or disturbance of the site or any nearby area reasonably suspected to overlie adjacent human remains until the following steps are taken:

- The Tulare County Coroner has been informed and has determined that no investigation of the cause of death is required.
- If the remains are determined or suspected by the County coroner to be of Native American origin, either of the following steps will be taken:
  - The coroner should contact the Native American Heritage Commission in order to ascertain the proper descendants from the deceased individual. The coroner should make a recommendation to the landowner or the person responsible for the excavation work, for means of treating or disposing of, with appropriate dignity, the human remains and any associated grave goods, which may include obtaining a qualified archaeologist or team of archaeologists to properly excavate the human remains.
  - Implementing or local agencies or authorized representatives should retain a Native American monitor, and an archaeologist, if recommended by the Native American monitor, and rebury the Native American human remains and any associated grave goods, with appropriate dignity, on the property and in a location that is not subject to further subsurface disturbance when any of the following conditions occurs:
    - The Native American Heritage Commission is unable to identify a descendent.
    - The descendant identified fails to make a recommendation.

- The implementing agency or its authorized representative rejects the recommendation of the descendant, and the mediation by the Native American Heritage Commission fails to provide measures acceptable to the landowner.

Level of Significance After Mitigation

Implementation of **Mitigation Measures CR-2(a) and MM-CR-4(a)** would reduce impacts related to the disturbance of human remains to a level less than significant as all local and regional agencies would enforce and abide by the Public Resources Code section 5097.9 *et seq's* rules and regulations detailed above.

Impact TCR-1 **Cause a substantial adverse change in the significance of a tribal cultural resource defined in Public Resources Code section 21074 that is listed or eligible for listing in the California Register of Historical Resources, or in a local register of historical resources as defined in Public Resources Code section 5020.1(k).**

Impact TCR-2 **Cause a substantial adverse change in the significance of a tribal cultural resource defined in Public Resources Code section 21074 that is a resource determined by the lead agency, in its discretion and supported by substantial evidence, to be significant pursuant to criteria set forth in subdivision (c) of Public Resources Code Section 5024.1.**

In general, the potential to impact tribal cultural resources listed or eligible for listing in the California Register of Historical Resources or in a local register would vary by location and type of project. As mentioned previously, consultation and compliance with AB 52 through the Native American Heritage Commission provides guidance for determining significance of resources and analysis on a project-specific level. Through the consultation process, California Native American Tribes have the opportunity to respond and identify potential significant impacts to tribal cultural resources, as defined in the Public Resources Code section 21074.

The significance of a tribal cultural resource can be determined at the discretion of the lead agency in consultation with local tribes. The 2018 RTP/SCS serves as a programmatic document for future projects that will need project-specific analysis. The process of determining significance of a tribal cultural resource is outlined by AB 52 and facilitated through the Native American Heritage Commission. Where the significance of a resource/site is unknown, it is presumed to be significant for the purpose of this PEIR. A finding of tribal cultural significance follows the criteria established in the *State CEQA Guidelines* and more specifically, PRC Section 5024.1.

Tribal cultural resources are likely to be encountered near areas of prior Native American occupation and activity, which includes areas both within and outside of areas of current development. Surficial archaeological deposits that are tribal cultural resources are more likely to be heavily disturbed within urban areas and more intact in rural settings; however, this does not preclude the presence of buried archaeological resources that may be significant in urban settings. For example, a tribal cultural resource that has been listed as a California Historical Landmark, First Tule River Indian Reservation (No. 388), is located in Porterville. Further project-specific analysis will need to be conducted on a project-level basis.

Tribal Cultural Resources may also include areas that remain in use and or have special significance to tribes. Development of transportation and land use development has the potential to temporarily and/or permanently limit access to such resources.

Therefore, project-specific impacts to tribal cultural resources cannot be fully evaluated without project details since the specific "Area of Potential Effect" for each project cannot be defined at this time. However, most if not all of the projects included in the 2018 RTP/SCS will require an independent review at which time the significance of the impact can be precisely determined. As discussed above, the proposed transportation improvements and the land use plan envisioned by the 2018 RTP/SCS may impact known and/or unknown cultural resources. Therefore, impacts to tribal cultural resources have the potential to be significant.

Development of detailed, site-specific analysis of tribal cultural impacts at the programmatic level is not feasible. However, in general, disturbance or damage to, or destruction of tribal cultural resources could occur as a result of RTP transportation projects or development patterns outlined by the SCS. Thus, impacts on tribal cultural resources related to implementation of the proposed 2018 RTP/SCS are considered significant for **Impact TCR-1** and **TCR-2**. Mitigation is required. See **Mitigation Measure CR-1(a), MM-CR-1(b), MM-CR-2(a), MM-CR-4(a)** and **MM-TCR-1(a)**.

Level of Significance Before Mitigation

Significant.

Project-Level Mitigation Measure

Implement **MM-CR-1(a), MM-CR-1(b), MM-CR-2(a)**, and **MM-CR-4(a)**.

MM-TCR-1(a): **C**onsistent with the provisions of Section 15091 of the State CEQA Guidelines, TCAG has identified mitigation measures capable of avoiding or reducing the significant effects of on tribal cultural resources within the jurisdiction and responsibility of local agencies (land use projects) and implementing agencies (transportation projects). . Where the Lead Agency has identified that a project has the potential for significant effects, the Lead Agency can and should consider mitigation measures consistent with Section 15064.5 of the State CEQA Guidelines capable of avoiding or reducing significant impacts on tribal cultural resources, to ensure compliance with the National Historic Preservation Act, Section 5097.5 of the Public Resources Code (PRC), state programs pursuant to Sections 5024 and 5024.5 of the PRC, adopted county and city general plans, and other federal, state and local regulations. Such measures include but are not limited to the following**:**

Where Tribal Cultural Resources have been identified (pursuant to the requirements of AB 52), appropriate mitigation should be identified in concert with local tribes. Where excavation could extend below previously disturbed levels, notification should be provided to California Native American tribes that are traditionally and culturally affiliated with the geographic area of the project site and have submitted a written request to the Department of City Planning to be notified of proposed projects in that area. If the potential for tribal resources exists, excavation in previously undisturbed soils can and should be monitored by a qualified Tribal Monitor. If tribal resources are discovered during excavation, grading, or construction activities, work should cease in the area of the find until an appropriate Tribal Representative has evaluated the find. Construction personnel should not collect or move any tribal resources. Construction activity may continue unimpeded on other portions of the project site. Any tribal resources should be treated with appropriate dignity and protected and preserved as appropriate.

Level of Significance After Mitigation

Because this PEIR evaluates impacts at the programmatic level, all project circumstances are not foreseeable, and therefore, even with implementation of **Mitigation Measures MM-CR-1(a), MM-CR1(b), MM-CR-2(a)**, **MM-CR-4(a)** and **MM-TCR-1(a)**, impacts would remain significant and

unavoidable. No additional feasible mitigation measures are available to reduce significant and unavoidable impacts beyond those identified in this PEIR.

4.5.4 CUMULATIVE EFFECTS

The 2018 RTP/SCS includes transportation projects and land use strategies that will shape the region over the next 24 years. These changes will include the extension of transportation-related infrastructure and other development that would impact cultural resources. Many of these transportation projects will facilitate access not only within the County, but also to areas outside the region. In addition, Plan projects will connect with projects outside the region, thereby facilitating and potentially inducing construction of transportation infrastructure outside the region. This additional infrastructure outside the County could lead to additional development, both inside and outside the region. The 2018 RTP/SCS impacts would add to cultural resource impacts of cumulative projects (transportation projects and development in accordance with RTP/SCS plans of adjacent jurisdictions). As discussed above, implementation of the 2018 RTP/SCS would result in significant impacts to historical resources, archaeological resources, paleontological resources and Tribal Cultural Resources and would contribute to significant cumulative impacts throughout the State of California as resources are impacted by new development and land is disturbed. The 2018 RTP/SCS contributions to these impacts would be cumulatively considerable. Implementation of **Mitigation Measures MM-CR-1(a**) through **MM-TCR-1(a)** would reduce impacts to cultural resources; however, impacts to historical resources, archaeological resources, paleontological resources and tribal cultural resources would remain cumulatively considerable after mitigation. Potential impacts to disturbance of human remains can be mitigated to a less than significant level that would not be cumulatively considerable.

4.6 GREENHOUSE GASES

This section discusses the existing state of global climate change, the contribution of greenhouse gases (GHG) to this change, and evaluates the GHG impacts from implementation of the 2018 RTP/SCS. The section provides a discussion of the applicable federal, state, regional, and local agencies that regulate, monitor, and control GHG emissions. In addition, this section provides regional-scale mitigation measures as well as mitigation measures for subsequent, site-specific environmental review documents prepared by lead agencies to reduce identified impacts.

4.6.1 ENVIRONMENTAL SETTING

Global climate change refers to any significant change in climate measurements, such as temperature, precipitation, or wind, lasting for an extended period (i.e., decades or longer).[1] Climate change may result from:

- natural factors, such as changes in the sun's intensity or slow changes in the Earth's orbit around the sun;
- natural processes within the climate system (e.g., changes in ocean circulation, reduction in sunlight from the addition of GHGs and other gases to the atmosphere from volcanic eruptions); and
- human activities that change the atmosphere's composition (e.g., through burning fossil fuels) and the land surface (e.g., deforestation, reforestation, urbanization, desertification).

According to scientists, human activities have resulted in a change in global climate. The primary manifestation of global climate change has been a rise in the average global tropospheric temperature of 0.2 degree Celsius (°C) per decade, determined from meteorological measurements worldwide between 1990 and 2005.

The natural process through which heat is retained in the troposphere[2] is called the greenhouse effect. The greenhouse effect traps heat in the troposphere through a threefold process: (1) short-wave radiation in the form of visible light emitted by the Sun is absorbed by the Earth as heat; (2) long-wave radiation is re-emitted by the Earth; and (3) GHGs in the upper atmosphere absorb or trap the long-wave radiation and re-emit it back towards the Earth and into space. This third process is the focus of current climate change policy because increased quantities of GHGs in the earth's atmosphere result in more of the long-wave radiation being trapped in the atmosphere.

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1 US Environmental Protection Agency, "Glossary of Climate Change Terms," http://www.epa.gov /climatechange/glossary.html#Climate_change. 2010

2 The troposphere is the bottom layer of the atmosphere, which varies in height from the Earth's surface from 6 to 7 miles.

While water vapor and carbon dioxide (CO_2) are the most abundant GHGs, other trace GHGs have a greater ability to absorb and re-radiate long-wave radiation. To gauge the potency of GHGs, scientists have established a Global Warming Potential (GWP) for each GHG based on its ability to absorb and re-emit long-wave radiation over a specific period. The GWP of a gas is determined using CO_2 as the reference gas, which has a GWP of 1 over 100 years.[3] For example, a gas with a GWP of 10 is 10 times more potent than CO_2 over 100 years. The use of GWP allows GHG emissions to be reported using CO_2 as a baseline. The sum of each GHG multiplied by its associated GWP is referred to as "carbon dioxide equivalents" (CO_2e). This essentially means that 1 metric ton of a GHG with a GWP of 10 has the same climate change impacts as 10 metric tons of CO_2.

The impacts of climate change have been documented by the Office of Environmental Health Hazard Assessment (OEHHA), which includes the following changes that are already occurring:[4,5]

- A recorded increase in annual average temperatures as well as increases in daily minimum and maximum temperatures;
- An increase in the occurrence of extreme events, including wildfire and heat waves;
- A reduction in spring runoff volumes, as a result of declining snowpack;
- A decrease in winter chill hours, necessary for the production of high-value fruit and nut crops; and
- Changes in the timing and location of species sightings, including migration upslope of flora and fauna, and earlier appearance of Central Valley butterflies.

In addition to this, California's recent drought incited land subsidence, pest invasions that killed over 100 million trees, and water shortages. The total statewide economic cost of the 2014 drought was estimated at $2.2 billion, with a total loss of 17,100 jobs.[6] An analysis of water usage between 1990 and 2012 showed that while California's energy policies have supported climate mitigation efforts, the performance of these policies have increased vulnerability to climate impacts.[7]

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3 All GWPs are given as 100-year GWP. Unless noted otherwise, all GWPs were obtained from the Intergovernmental Panel on Climate Change. *Climate Change 1995: The Science of Climate Change – Contribution of Working Group I to the Second Assessment Report of the IPCC*. Cambridge (UK): Cambridge University Press, 1996

4 OEHHA, *Indicators of Climate Change in California*. https://oehha.ca.gov/climate-change/document/indicators-climate-change-california

5 California Air Resources Board, *California's 2017 Climate Change Scoping Plan*. November 2017.

6 Howitt, R., Medellin-Azuara, J., MacEwan, D., Lund, J., and Summer, D. *Economic Analysis of 2014 Drought for California Agriculture*. 2014.

7 Fulton, J., and Cooley, H., *The Water Footprint of California's Energy System, 1990-2012*. 2015.

According to the U.S. Forest Service National Insect and Disease Forest Risk Assessment,[8] California is at risk of losing 12 percent of the total area of forests and woodlands in the State due to insects and disease, or over 5.7 million acres. While future climate change is not modeled within the risk assessment, and current drought conditions are not accounted for in these estimates, the projected climate changes over a 15-year period (2013-2027) are expected to significantly increase the number of acres at risk, and will increase the risk from already highly destructive pests such as the mountain pine beetle. A recent aerial survey by the U.S. Forest Service identified more than 100 million dead trees in California.[9]

The warming climate also causes sea level rise by warming the oceans which causes water to expand, and by melting land ice which transfers water to the ocean. Sea level rise is expected to magnify the adverse impact of any storm surge and high waves on the California coast. As temperatures warm and GHG concentrations increase more carbon dioxide dissolves in the ocean, making it more acidic. More acidic ocean water affects a wide variety of marine species, including species that people rely on for food.[10]

While more intense dry periods are anticipated under warmer conditions, increased extreme wet conditions are also expected to increase due to more frequent warm, wet atmospheric river events and a higher proportion of precipitation falling as rain instead of snow. In recent years, atmospheric rivers have also been recognized as the cause of the large majority of major floods in rivers all along the U.S. West Coast and as the source of 30-50 percent of all precipitation in the same region.[11] These extreme precipitation events, together with the rising snowline, often cause devastating floods in major river basins (e.g., California's Russian River). Looking ahead, the frequency and severity of atmospheric rivers on the U.S. West Coast will increase due to higher atmospheric water vapor that occurs with rising temperature, leading to more frequent flooding.[12,13]

As GHG emissions continue to accumulate and climate disruption grows, such destructive events will become more frequent. Several recent studies project increased precipitation within hurricanes over

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8 U.S. Forest Service, *2013-2027 National Insect and Disease Forest Risk Assessment.* January 2014.

9 U.S. Department of Agriculture, *New Aerial Survey Identifies More Than 100 Million Dead Trees in California.* November 2016.

10 California Air Resources Board, *California's 2017 Climate Change Scoping Plan.* November 2017.

11 American Meteorological Society, *Atmospheric Rivers as Drought Busters on the U.S. West Coast,* April 2013.

12 Hagos, S., Leung, L.R., Yoon, JH., Lu, J., and Gao, Y., *A projection of changes in landfalling atmospheric river frequency and extreme precipitation over western North America from the Large Ensemble CESM simulations.* January 2016.

13 Payne, Ashley and Magnusdottir, Gudrun, *An Evaluation of Atmospheric Rivers over the North Pacific in CMIP5 and their response to warming under RCP 8.5.* November 2015.

ocean regions.[14,15] The primary physical mechanism for this increase is higher water vapor in the warmer atmosphere, which enhances moisture convergence in a storm for a given circulation strength. Since hurricanes are responsible for many of the most extreme precipitation events, such events are likely to become more extreme. Anthropogenic warming by the end of the 21st century will likely cause tropical cyclones globally to become more intense on average. This change implies an even larger percentage increase in the destructive potential per storm, assuming no changes in storm size.[16,17] Thus, the historical record, which once set our expectations for the traditional range of weather and other natural events, is becoming an increasingly unreliable predictor of the conditions we will face in the future. Consequently, the best available science must drive effective climate policy.[18]

California is committed to further supporting new research on ways to mitigate climate change and how to understand its ongoing and projected impacts. California's Fourth Climate Change Assessment and Indicators of Change Report will further update our understanding of the many impacts from climate change in a way that directly informs State agencies' efforts to safeguard the State's people, economy, and environment.[19,20]

Together, historical data, current conditions, and future projections provide a picture of California's changing climate, with two important messages:

- Change is already being experienced and documented across California, and some of these changes have been directly linked to changing climatic conditions.
- Even with the uncertainty in future climate conditions, every scenario estimates further change in future conditions.

It is critical that California continue to take steps to reduce GHG emissions in order to avoid the worst of the projected impacts of climate change. At the same time, the State is taking steps to make the State more

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14 Easterling, D.R., Kunkel, K.E., Wehner, M.F., and Sun, L., *Detection and Attribution of Climate Extremes in the Observed Record*. March 2016.

15 National Academies of Sciences, Engineering, and Medicine, *Attribution of Extreme Weather Events in the Context of Climate Change*. 2016.

16 Sobel, A.H., Camargo, S.J., Hall, T.M., Lee, C-Y., Tippett, M.K., and Wing, A.A., *Human Influence on Tropical Cyclone Intensity*. 2016.

17 Kossin, James P., NOAA/National Centers for Environmental Information, *Past and Projected Changes in Western North Pacific Tropical Cyclone Exposure*. July 2016.

18 California Air Resources Board, *California's 2017 Climate Change Scoping Plan*. November 2017.

19 California's Fourth Climate Change Assessment. http://resources.ca.gov/climate/safeguarding/research/

20 OEHHA, *Indicators of Climate Change in California*. https://oehha.ca.gov/climate-change/document/indicators-climate-change-california

resilient to ongoing and projected climate impacts as laid out by the Safeguarding California Plan.[21] The Safeguarding California Plan is being updated in 2017 to present new policy recommendations and provide a roadmap of all the actions and next steps that state government is taking to adapt to the ongoing and inevitable effects of climate change. California's continuing efforts are vital steps toward minimizing the impact of GHG emissions and a three-pronged approach of reducing emissions, preparing for impacts, and conducting cutting-edge research can serve as a model for action.[22]

4.6.1.1 Greenhouse Gases

GHGs of most concern include the following compounds:

- Carbon Dioxide (CO_2). Anthropogenic CO_2 emissions are primarily generated by fossil fuel combustion from stationary and mobile sources. Over the past 200 years, the burning of fossil fuels such as coal and oil, deforestation, land-use changes, and other activities have caused the concentrations of heat-trapping GHGs to increase significantly in our atmosphere.[23] Carbon dioxide is also generated by natural sources such as cellular respiration, volcanic activity, decomposition of organisms, and forest fires. Carbon dioxide is the most widely emitted GHG and is the reference gas (GWP of 1) for determining the GWP of other GHGs.

- Methane (CH_4). Methane is emitted from biogenic sources (i.e., resulting from the activity of living organisms), incomplete combustion in forest fires, landfills, manure management, and leaks in natural gas pipelines. In the US, the top three sources of CH_4 are landfills, natural gas systems, and enteric fermentation.[24] Methane is the primary component of natural gas, which is used for space and water heating, steam production, and power generation. The GWP of CH_4 is 21.

- Nitrous Oxide (N_2O). Nitrous oxide is produced by natural and human-related sources. Primary human-related sources include agricultural soil management, animal manure management, sewage treatment, mobile and stationary combustion of fossil fuel, adipic acid production, and nitric acid production. The GWP of N_2O is 310.

- Hydrofluorocarbons (HFCs). HFCs typically are used as refrigerants in both stationary refrigeration and mobile air conditioning. The use of HFCs for cooling and foam blowing is growing particularly as the continued phase-out of chlorofluorocarbons (CFCs) and hydrochlorofluorocarbons (HCFCs) gains momentum. The GWP of HFCs ranges from 140 for HFC-152a to 6,300 for HFC-236fa.

- Perfluorocarbons (PFCs). Perfluorocarbons are compounds consisting of carbon and fluorine. They are primarily created as a byproduct of aluminum production and semiconductor manufacturing. Perfluorocarbons are potent GHGs with a GWP several thousand times that of carbon dioxide,

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21 California Natural Resources Agency, *Safeguarding California and Climate Change Adaption Policy*, http://resources.ca.gov/climate/safeguarding/

22 California Air Resources Board, *California's 2017 Climate Change Scoping Plan*. November 2017.

23 US Environmental Protection Agency, *Inventory of U.S. Greenhouse Gas Emissions and Sinks 1990-2016. 2018.*

24 US EPA, *Understanding the Inventory of U.S. Greenhouse Gas Emissions and Sinks and the Greenhouse Gas Reporting Program for Landfills: Methodologies, Uncertainties, Improvements and Deferrals.*

depending on the specific PFC. Another area of concern regarding PFCs is their long atmospheric lifetime of up to 50,000 years.[25] The global warming potentials (GWPs) of PFCs range from 5,700 to 11,900.

- Sulfur Hexafluoride (SF_6). Sulfur hexafluoride is a colorless, odorless, nontoxic, nonflammable gas. It is most commonly used as an electrical insulator in high voltage equipment that transmits and distributes electricity. Sulfur hexafluoride is the most potent GHG that has been evaluated by the Intergovernmental Panel on Climate Change with a GWP of 23,900.

4.6.1.2 Global Ambient CO2 Concentrations

To determine the global atmospheric variation of CO_2, CH_4, and N_2O from before the start of industrialization, air trapped by ice has been extracted from core samples taken from polar ice sheets. For the period from around 1750 to the present, global CO_2 concentrations increased from a pre-industrialization period concentration to 391 ppm in 2011, which represents an exceedance of 1750 levels by approximately 40 percent.[26] Global CH_4 and N_2O concentrations show similar increases for the same period (see **Table 4.6-1, Comparison of Global Pre-Industrial and Current GHG Concentrations**).

Table 4.6-1
Comparison of Global Pre-Industrial and Current GHG Concentrations

Greenhouse Gas	Early Industrial Period Concentrations[1]	Natural Range for Last 650,000 Years[1]	2011 Concentrations[2]
Carbon Dioxide (CO_2)	280 ppm	180 to 300 ppm	391 ppm
Methane (CH_4)	715 ppb	320 to 790 ppb	1,803 ppb
Nitrous Oxide (N_2O)	270 ppb	NA	324 ppb

Source: [1] Intergovernmental Panel on Climate Change (IPCC), Climate Change 2007: The Physical Science Basis, Summary for Policymakers 2007. 2 IPCC, Climate Change 2013 The Physical Science Basis. *2013.*
ppm=parts per million; ppb=parts per billion.

4.6.1.3 Contributions to Greenhouse Gas Emissions

Global

Worldwide anthropogenic GHG emissions for industrialized nations (referred to as Annex I) and developing nations (referred to as Non-Annex I) are tracked through the year 2014. The sum of the top five GHG producing nations (plus the European Union) totaled approximately 29,600 million metric tons

25 US Department of Energy, Energy Information Administration, "Other Gases: Hydrofluorocarbons, Perfluorocarbons, and Sulfur Hexafluoride," http://www.eia.doe.gov/oiaf/1605/gg00rpt/other_gases.html. n.d.

26 IPCC, *Climate Change 2013 The Physical Science Basis.* 2013.

of CO_2 equivalents ($MMTCO_2e$).[27,28] It should be noted that global emissions inventory data are not all from the same year and may vary depending on the source of the emissions inventory data.[29] The top five countries and the European Union accounted for approximately 55 percent of the total global GHG emissions according to the most recently available data (see **Table 4.6-2, Top Five GHG Producer Countries and the European Union [Annual]**). The GHG emissions in more recent years may differ from the inventories presented in **Table 4.6-2**; however, the data is representative of currently available global inventory data.

United States

As noted in **Table 4.6-2**, the US was the number two producer of global GHG emissions in 2010. The primary GHG emitted by human activities in the US was CO_2, representing approximately 82 percent of total GHG emissions. Carbon dioxide from fossil fuel combustion, the largest source of GHG emissions, accounted for approximately 76 percent of US GHG emissions.[30,31]

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27 World Resources Institute, "Climate Analysis Indicators Tool (CAIT)," https://www.climatewatchdata.org/ghg-emissions?breakBy=location&source=31&version=1

28 The CO_2 equivalent emissions commonly are expressed as "million metric tons of carbon dioxide equivalent ($MMTCO_2E$)." The carbon dioxide equivalent for a gas is derived by multiplying the tons of the gas by the associated GWP, such that $MMTCO_2E$ = (million metric tons of a GHG) x (GWP of the GHG). For example, the GWP for methane is 21. This means that the emission of one million metric tons of methane is equivalent to the emission of 21 million metric tons of CO_2.

29 The global emissions are the sum of Annex I and non-Annex I countries, without counting Land-Use, Land-Use Change and Forestry (LULUCF). For countries without 2005 data, the United Nations Framework Convention on Climate Change (UNFCCC) data for the most recent year were used. United Nations Framework Convention on Climate Change, "Annex I Parties – GHG total without LULUCF," http://unfccc.int/ghg_emissions_data/ghg_data_from_unfccc/time_series_annex_i/ items/3841.php and "Flexible GHG Data Queries" with selections for total GHG emissions excluding LULUCF/LUCF, all years, and non-Annex I countries, http://unfccc.int/di/FlexibleQueries/Event.do?event= showProjection. n.d.

30 US Environmental Protection Agency, *Inventory of U.S. Greenhouse Gas Emissions and Sinks,* April, 2016. https://www.epa.gov/sites/production/files/2018-01/documents/2018_complete_report.pdf

31 The troposphere is the bottom layer of the atmosphere, which varies in height from the Earth's surface from 6 to 7 miles.

Table 4.6-2
Top Five GHG Producer Countries and the European Union (Annual)

Emitting Countries	2014 GHG Emissions ($MMTCO_2e$)
China	12,000
United States	6,300
European Union (EU), 27 Member States	3,600
India	3,200
Indonesia	2,500
Russia	2,000

Source: World Resources Institute, "Climate Analysis Indicators Tool (CAIT)," https://www.climatewatchdata.org/ghg-emissions?breakBy=location&source=31&version=1. 2018

State of California

The California Air Resources Board (CARB) compiles GHG inventories for the State of California. Based on the 2017 GHG inventory data (i.e., the latest year for which data are available), California emitted 440 $MMTCO_2e$ including emissions resulting from imported electrical power in 2015.[32] Based on the GHG inventories compiled by the World Resources Institute,[33] California's total statewide GHG emissions rank second in the US (Texas is number one with 874 $MMTCO_2e$) with emissions of 455 $MMTCO_2e$ in 2017.[34]

The primary contributors to GHG emissions in California are transportation, electric power production from both in-state and out-of-state sources, industry, agriculture and forestry, and other sources, which include commercial and residential activities. **Table 4.6-3, GHG Emissions in California (2000 and 2015)**, provides a summary of GHG emissions reported in California in 2000 and 2015 by categories defined by the United Nations Intergovernmental Panel on Climate Change (IPCC).

32 California Air Resources Board, "California Greenhouse Gas 2000-2015 Inventory by IPCC Category - Summary," 2017. https://www.arb.ca.gov/cc/inventory/data/tables/ghg_inventory_ipcc_sum_2000-15.pdf.

33 World Resources Institute, *U.S. State Emissions Explorer Tool*, 2017. http://cait.wri.org/

34 Ibid.

Table 4.6-3
GHG Emissions in California (2000 and 2015)

Source Category	2000 ($MMTCO_2e$)	Percent of Total	2015 ($MMTCO_2e$)	Percent of Total
ENERGY	**408.9**	**87.52%**	**367.6**	**83.48%**
Energy Industries	401.83	86.01%	132.93	30.19%
Manufacturing Industries & Construction	22.75	4.87%	19.98	4.54%
Transport	175.29	37.52%	163.64	37.16%
Other Sectors (Residential/Commercial/Institutional)	44.67	9.56%	40.33	9.16%
Solid Fuels	0.04	0.01%	0.01	0.00%
Fugitive Emissions from Oil & Natural Gas	5.78	1.24%	7.51	1.71%
Fugitive Emissions from Geothermal Energy Production	1.13	0.24%	1.15	0.26%
Pollution Control Devices	0.11	0.02%	0.00	0.00%
INDUSTRIAL PROCESSES & PRODUCT USE	**19.6**	**4.20%**	**32.5**	**7.38%**
Mineral Industry	5.60	1.20%	5.23	1.19%
Chemical Industry	0.06	0.01%	0.03	0.01%
Non-Energy Products from Fuels & Solvent Use	2.46	0.53%	1.90	0.43%
Electronics Industry	0.52	0.11%	0.26	0.06%
Substitutes for Ozone Depleting Substances	6.10	1.31%	18.37	4.17%
Other Product Manufacture and Use	1.52	0.33%	1.39	0.32%
Other	3.31	0.71%	5.26	1.19%
AGRICULTURE, FORESTRY, & OTHER LAND USE	**29.4**	**6.29%**	**31.7**	**7.20%**
Livestock	19.62	4.20%	23.25	5.28%
Aggregate Sources & Non-CO_2 Sources on Land	9.76	2.09%	8.42	1.91%
WASTE	**9.3**	**1.99%**	**10.6**	**2.41%**
Solid Waste Disposal and Biological Treatment	7.22	1.55%	8.40	1.91%
Biological Treatment of Solid Waste	0.13	0.03%	0.33	0.07%
Wastewater Treatment & Discharge	1.93	0.41%	1.90	0.43%
EMISSIONS SUMMARY				
Gross California Emissions	467.19		440.36	

Source:
[1] *California Air Resources Board, "California Greenhouse Gas 2000-2015 Inventory by IPCC Category - Summary," https://www.arb.ca.gov/cc/inventory/data/tables/ghg_inventory_ipcc_sum_2000-15.pdf. 2017.*

California's GHG emissions have followed a declining trend since 2007. In 2015, emissions from routine emitting activities statewide were 1.5 million metric tons of CO_2e ($MMTCO_2e$) lower than 2014 levels, representing an overall decrease of 10 percent since peak levels in 2004.[35]

35 California Air Resources Board, "California Greenhouse Gas 2000-2015 Inventory by IPCC Category - Summary," 2017. https://www.arb.ca.gov/cc/inventory/data/tables/ghg_inventory_ipcc_sum_2000-15.pdf.

Tulare County

GHG emissions produced within unincorporated Tulare County in 2007 (the latest date for which data were available) were estimated to be 5.2 MMTCO2e.[36] The Tulare County General Plan EIR indicates that projected emissions for 2030 in unincorporated Tulare County are 6.1 million tonnes of MMTCO2e. In both 2007 and 2030, dairies/feedlots accounted for the largest portion of total emissions, making up 63 percent and 59 percent of total emissions, respectively. Mobile sources (on and off- road) accounted for the second largest portion of emissions, contributing 16 percent in 2007 and are projected to account for 20 percent in 2030. When normalized by population, total annual emissions equate to 36 tonnes of MMTCO2e per resident in 2007, and 27 tonnes of MMTCO2e per resident in 2030.

4.6.2 REGULATORY FRAMEWORK

4.6.2.1 International

Intergovernmental Panel on Climate Change

The World Meteorological Organization (WMO) and United Nations Environmental Program (UNEP) established the IPCC in 1988. The goal of the IPCC is to evaluate the risk of climate change caused by human activities. Rather than performing research or monitoring climate, the IPCC relies on peer-reviewed and published scientific literature to make its assessment. While not a regulatory body, the IPCC assesses information (i.e., scientific literature) regarding human-induced climate change and the impacts of human-induced climate change, and recommends options to policy makers for the adaptation and mitigation of climate change. The IPCC reports its evaluations in special reports called assessment reports. The latest assessment report (i.e., Fifth Assessment Report, consisting of three working group reports and a synthesis report based on the first three reports) was published in 2013. In its 2013 report, the IPCC stated that global temperature increases since 1951 were extremely likely attributable to man-made activities (greater than 95 percent certainty).[37]

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36 Tulare County General Plan 2030, Recirculated EIR, Appendix E, February 2010

37 IPCC, *Climate Change 2013 The Physical Science Basis.* 2013.

Paris Accord

The most recent international climate change agreement was adopted at the United Nations Framework Convention on Climate Change in Paris in December 2015 (the "Paris Accord").[38] In the Paris Accord, the United States set its intended nationally determined contribution to reduce its GHG emissions by 26 to 28 percent below its 2005 level in 2025 and to make best efforts to reduce its emissions by 28 percent. These targets were set with the goal of limiting global temperature rise to below 2 degrees Celsius and getting to the 80 percent emission reduction by 2050.

However, in June 2017, the U.S. announced its intent to withdraw from the Accord.[39] The earliest effective date of a withdrawal by the U.S. is November 2020.

4.6.2.2 Federal

Supreme Court Ruling

In *Massachusetts v. Environmental Protection Agency* (2007) 59 USC 497, the United States Supreme Court held in April of 2007 that US EPA has statutory authority under Section 202 of the Clean Air Act (CAA) to regulate GHGs. The Court did not hold that US EPA was required to regulate GHG emissions; however, it indicated that the agency must decide whether GHGs cause or contribute to air pollution that is reasonably anticipated to endanger public health or welfare.

US EPA Endangerment Finding

On December 7, 2009, the US EPA Administrator signed two distinct findings regarding GHGs under section 202(a) of the Clean Air Act (42 USC Section 7521):

- Endangerment Finding: The Administrator finds that the current and projected concentrations of the six key well-mixed GHGs (carbon dioxide, methane, nitrous oxide, hydrofluorocarbons, perfluorocarbons, and sulfur hexafluoride) in the atmosphere threaten the public health and welfare of current and future generations.
- Cause or Contribute Finding: The Administrator finds that the combined emissions of these well-mixed GHGs from new motor vehicles and new motor vehicle engines contribute to the GHG pollution that threatens public health and welfare.

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38 United Nations, Paris Agreement, 2015. Available: http://unfccc.int/files/essential_background/convention/application/pdf/english_paris_agreement.pdf, accessed April 17, 2018.

39 The White House, Statement by President Trump on the Paris Climate Accord, 2017. Available: https://www.whitehouse.gov/briefings-statements/statement-president-trump-paris-climate-accord/, accessed April 17, 2018.

Energy Independence and Security Act

The Energy Independence and Security Act of 2007 (42 USC Section 17381) includes several key provisions that increase energy efficiency and the availability of renewable energy, which reduce GHG emissions as a result. First, the Act sets a Renewable Fuel Standard that requires fuel producers to use at least 36 billion gallons of biofuel by 2022. Second, it increased Corporate Average Fuel Economy (CAFE) Standards to require a minimum average fuel economy of 35 miles per gallon for the combined fleet of cars and light trucks by 2020. Third, it includes a variety of new standards for lighting and for residential and commercial appliance equipment. The equipment includes residential refrigerators, freezers, refrigerator-freezers, metal halide lamps, and commercial walk-in coolers and freezers.

EPA Reporting Rule

The US Environmental Protection Agency (US EPA) adopted a mandatory GHG reporting rule in September 2009 (40 CFR Part 98). The rule w requires suppliers of fossil fuels or entities that emit industrial GHGs, manufacturers of vehicles and engines, and facilities that emit 25,000 metric tons or more per year of GHG emissions to submit annual reports to the US EPA beginning in 2011 (covering the 2010 calendar year emission). Vehicle and engine manufacturers were required to begin reporting GHG emissions for model year 2011.

Fuel Economy Standards

On September 15, 2009, the US EPA and the Department of Transportation's (DOT) National Highway Traffic Safety Administration (NHTSA) issued a joint proposal to establish a national program consisting of new standards for model year 2012 through 2016 light-duty vehicles that will reduce GHG emissions and improve fuel economy. The proposed standards would be phased in and would require passenger cars and light-duty trucks to comply with a declining emissions standard. In 2012, passenger cars and light-duty trucks would have to meet an average emissions standard of 295 grams of CO_2 per mile and 30.1 miles per gallon. By 2016, the vehicles would have to meet an average standard of 250 grams of CO_2 per mile and 35.5 miles per gallon.[40] The final standards were adopted by the US EPA and DOT on April 1, 2010.[41]

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40 US EPA, "EPA and NHTSA Propose Historic Nation Program," 2009.

41 U.S. Environmental Protection Agency, Regulatory Announcement, EPA and NHTSA Finalize Historic National Program to Reduce Greenhouse Gases and Improve Fuel Economy for Cars and Trucks, April 2010.

Medium- and Heavy-Duty Vehicle Program

In October 2010, the US EPA and NHTSA announced a program to reduce GHG emissions and to improve fuel efficiency for medium- and heavy-duty-vehicles (model years 2014 through 2018). These standards were signed into law on August 9, 2011.[42] In October 2016, US EPA and NHTSA adopted Phase 2 GHG and fuel efficiency standards for medium- and heavy-duty engines and vehicles.[43]

Clean Power Plan

In 2015, US EPA published the Clean Power Plan (80 Fed. Reg. 64661, October 23, 2015). The Clean Power Plan sets achievable standards to reduce CO_2 emissions by 32 percent from 2005 levels by 2030. This Plan establishes final emissions guidelines for states to follow in developing plans to reduce GHG emissions from existing fossil fuel-fired electric generating units (EGUs). Specifically, US EPA is establishing: (1) CO_2 emission performance rates representing the best system of emission reduction (BSER) for two subcategories of existing fossil-fuel-fired EGUs, fossil-fuel-fired electric utility steam generating units and stationary combustion turbines; (2) state-specific CO_2 goals reflecting the CO_2 emission performance rates; and (3) guidelines for the development, submittal and implementation of state plans that establish emission standards or other measures to implement the CO_2 emission performance rates, which may be accomplished by meeting the state goals. This final rule would continue progress already under way in the United States to reduce CO_2 emissions from the utility power sector. On February 9, 2016, the Supreme Court (Order No. 15A773) stayed implementation of the Clean Power Plan pending judicial review. In addition, US EPA is currently proposing to repeal the Clean Power Plan after completing a thorough review as directed by the Executive Order on Energy Independence (as discussed below). In sum, the Clean Power Plan continues to face multiple legal challenges and its future is uncertain.

Executive Order on Energy Independence

On March 28, 2017, President Donald Trump signed Executive Order 13783, "Promoting Energy Independence and Economic Growth," which calls for:

- Review of the Clean Power Plan;

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42 U.S. Environmental Protection Agency, Regulatory Announcement, EPA and NHTSA Adopt First-Ever Program to Reduce Greenhouse Gas Emissions and Improve Fuel Efficiency of Medium- and Heavy-Duty Vehicles, August 2011.

43 U.S. Environmental Protection Agency, Final Rule for Greenhouse Gas Emissions and Fuel Efficiency Standards for Medium- and Heavy-Duty Engines and Vehicles - Phase 2. Available: https://www.epa.gov/regulations-emissions-vehicles-and-engines/final-rule-greenhouse-gas-emissions-and-fuel-efficiency#rule-history, accessed March 1, 2018.

- Review of the 2016 Oil and Gas New Source Performance Standards for New, Reconstructed, and Modified Sources;

- Review of the Standards of Performance for GHG Emissions from New, Modified, and Reconstructed Stationary Sources: Electric Generating Units; and

- Withdrawal of Proposed Rules: (1) Federal Plan Requirements for GHG Emissions From Electric Utility Generating Units Constructed on or before January 8, 2014; (2) Model Trading Rules; Amendments to Framework Regulations; and (3) Clean Energy Incentive Program Design Details.

4.6.2.3 State

In response to growing scientific and political concern with global climate change, California adopted a series of laws to reduce emissions of GHGs into the atmosphere.

Assembly Bill 1493 (AB 1493) (Pavley Regulations) - Vehicular Emissions Greenhouse Gas Emission Standards

In September 2002, AB 1493 (Chapter 200, Statutes of 2002) (referred to as Pavley I) was enacted, requiring the development and adoption of regulations to achieve "the maximum feasible reduction of greenhouse gases" emitted by noncommercial passenger vehicles, light-duty trucks, and other vehicles used primarily for personal transportation in the state by January 1, 2005. Pavley I took effect for model years starting in 2009 to 2016 and Pavley II, which is now referred to as "LEV (Low Emission Vehicle) III GHG" will cover 2017 to 2025 (13 Cal. Code Regs. Section 1900 *et seq.*). Fleet average emission standards were to reach a 22 percent reduction by 2012 and 30 percent by 2016.

Executive Order (EO) S-3-05

On June 1, 2005, EO S-3-05 set the following GHG emission reduction goals: reduce GHG emissions to 2000 levels by 2010; reduce GHG emissions to 1990 levels by 2020; and reduce GHG emissions to 80 percent below 1990 levels by 2050.[44] EO S-3-05 also calls for the Secretary of California Environmental Protection Agency (Cal/EPA) to be responsible for coordination of state agencies and progress reporting.

In response to the Executive Order, the Secretary of the Cal/EPA created the Climate Action Team (CAT). California's CAT originated as a coordinating council organized by the Secretary for Environmental

44 While EO S-3-05 sets a goal that Statewide GHG emissions be reduced to 80 percent below 1990 levels by 2050, the EO does not constitute a "plan" for GHG reduction, and no State plan has been adopted to achieve the 2050 goal.

Protection. It included the Secretaries of the Natural Resources Agency, and the Department of Food and Agriculture, and the Chairs of the Air Resources Board, Energy Commission, and Public Utilities Commission. The original council was an informal collaboration between the agencies to develop potential mechanisms for reductions in GHG emissions in the state. The council was given formal recognition in Executive Order S-3-05 and became the CAT.

The original mandate for the CAT was to develop proposed measures to meet the emission reduction targets set forth in the executive order. The CAT has since expanded and currently has members from 18 state agencies and departments.

The CAT is responsible for preparing reports that summarize the state's progress in reducing GHG emissions. The most recent CAT Report was published in December 2010. The CAT Report discusses mitigation and adaptation strategies, state research programs, policy development, and future efforts.

Assembly Bill 32 (AB 32) and CARB Scoping Plan

The State of California has implemented numerous laws targeting GHG emissions. Chief among these is the California Global Warming Solutions Act of 2006 (Assembly Bill [AB] 32) (Health & Safety Code Section 38500 et seq.). AB 32 represents the first enforceable statewide program to limit GHG emissions from all major sectors with penalties for noncompliance. Like EO S-3-05, AB 32 requires the State of California to reduce its emissions to 1990 levels by 2020. The Act establishes key deadlines for certain actions the state must take in order to achieve the reduction target. The first action under AB 32 resulted in California Air Resources Board's (CARB) adoption of a report listing three specific early action GHG reduction measures on June 21, 2007. On October 25, 2007, CARB approved an additional six early action GHG reduction measures under AB 32.[45]

As required under AB 32, on December 6, 2007, CARB approved the 1990 GHG emissions inventory, thereby establishing the emissions limit for 2020. The 2020 emissions limit was set at 427 $MMTCO_2e$, since updated to 431 $MMTCO_2e$.[46] The inventory indicated that in 1990, transportation, with 35 percent of the state's total emissions, was the largest single sector generating carbon dioxide; followed by industrial emissions, 24 percent; imported electricity, 14 percent; in-state electricity generation, 11 percent; residential use, 7 percent; agriculture, 5 percent; and commercial uses, 3 percent (figures are based on the 1990 inventory). AB 32 does not require individual sectors to meet their individual 1990 GHG emissions inventory; the total statewide emissions are required to meet the 1990 target by 2020.

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45 https://www.arb.ca.gov/cc/ccea/ccea.htm, accessed April 17, 2018.

46 https://www.arb.ca.gov/cc/inventory/1990level/1990level.htm, accessed April 18, 2017.

In addition to the 1990 emissions inventory, CARB also adopted regulations requiring the mandatory reporting of GHG emissions for large facilities on December 6, 2007 (17 Cal. Code Regs. Section 95100 *et seq.*). The mandatory reporting regulations require annual reporting from the largest facilities in the state, which account for approximately 94 percent of GHG emissions from industrial and commercial stationary sources in California. About 800 separate sources fall under the new reporting rules and include electricity generating facilities, electricity retail providers and power marketers, oil refineries, hydrogen plants, cement plants, cogeneration facilities, and industrial sources that emit over 25,000 tons of CO_2 each year from on-site stationary combustion sources. Affected facilities began tracking their emissions in 2008, and reported them beginning in 2009, with a phase-in process to allowed facilities to develop reporting systems and train personnel in data collection. Emissions for 2008 could be based on best available emission data. Beginning in 2010, however, emissions reporting requirements became more rigorous and are subject to third-party verification. Verification will take place annually or every three years, depending on the type of facility.

In December 2008, CARB adopted a *Climate Change Scoping Plan*[47] indicating how emission reductions will be achieved from significant sources of GHGs via regulations, market mechanism, and other actions. The *Climate Change Scoping Plan* identifies 18 recommended strategies the state should implement to achieve AB 32.

CARB's initial Scoping Plan contains the main strategies California would implement to reduce the projected 2020 Business-as-Usual (BAU) emissions to 1990 levels, as required by AB 32. These strategies are intended to reduce CO_2e[48] emissions by 174 million metric tons (MT), or approximately 30 percent, from the State's projected 2020 emissions level of 596 million MTCO2e (MMTCO2e) under a BAU[49] scenario. This reduction of 42 million MTCO2e, or almost 10 percent from 2002 to 2004 average emissions, would be required despite the population and economic growth forecast through 2020.

CARB's initial Scoping Plan calculates 2020 BAU emissions as those expected to occur in the absence of any GHG reduction measures. The 2020 BAU emissions estimate was derived by projecting emissions from a past baseline year using growth factors specific to each of the different economic sectors (e.g., transportation, electrical power, commercial and residential, industrial). CARB used 3-year average

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47 https://www.arb.ca.gov/cc/scopingplan/document/scopingplandocument.htm, accessed April 17, 2018.

48 Carbon dioxide equivalent (CO_2e) – A metric measure used to compare the emissions from various greenhouse gases based upon their global warming potential.

49 "Business-as-Usual" refers to emissions expected to occur in the absence of any GHG reduction measure (California Environmental Protection Agency Air Resources Board Website, http://www.arb.ca.gov/cc/inventory/data/bau.htm, Accessed June 1, 2016). Note that there is significant controversy as to what BAU means. In determining the GHG 2020 limit, CARB used the above as the "definition."

emissions, by sector, for 2009 to 2011 to forecast emissions to 2020. The measures described in CARB's Scoping Plan are intended to reduce the projected 2020 BAU to 1990 levels, as required by AB 32.

The First Update to California's Climate Change Scoping Plan (2014 Scoping Plan Update[50]) was developed by the CARB in collaboration with the CAT and reflects the input and expertise of a range of state and local government agencies. The 2014 Scoping Plan Update lays the foundation for establishing a broad framework for continued emission reductions beyond 2020, on the path to 80 percent below 1990 levels by 2050.

On December 14, 2017, CARB approved the final version of *California's 2017 Climate Change Scoping Plan* (2017 Scoping Plan Update), which outlines the proposed framework of action for achieving the SB 32 2030 GHG target of 40 percent reduction in GHG emissions relative to 1990 levels (CARB 2017a). See further discussion below.

California Cap-and-Trade Program

Authorized by the California Global Warming Solutions Act of 2006 (AB 32), the Cap-and-Trade Program is a core strategy that California is using to meet its statewide GHG reduction targets for 2020 and 2030, and ultimately achieve an 80 percent reduction from 1990 levels by 2050. Pursuant to its authority under AB 32, CARB has designed and adopted a California Cap-and-Trade Program to reduce GHG emissions from major sources (deemed "covered entities") by setting a firm cap on statewide GHG emissions and employing market mechanisms to achieve AB 32's emission-reduction mandate of returning to 1990 levels of emissions by 2020 (17 CCR Sections 95800 to 96023).

In September 2012, CARB adopted a California Cap on Greenhouse Gas Emissions and Market-Based Compliance Mechanisms, which established the cap-and-trade program to manage GHG emissions, for California. The cap-and-trade program is a market-based approach wherein the government determines an overall emission target, or "cap," for a particular set of facilities. The cap is the total amount of emissions that all of the facilities can produce. Tradable emissions allowances totaling the overall emissions cap are distributed by auction or given out amongst the particular set of facilities. The emissions allowances can be traded amongst the facilities.

Under the Cap-and-Trade Program, an overall limit is established for GHG emissions from capped sectors (e.g., electricity generation, petroleum refining, cement production, and large industrial facilities that emit more than 25,000 metric tons CO_2e per year) and declines over time, and facilities subject to the cap-and-trade permits to emit GHGs. The statewide cap for GHG emissions from the capped sectors

50 https://www.arb.ca.gov/cc/scopingplan/document/updatedscopingplan2013.htm, accessed April 17, 2018.

commenced in 2013 and declines over time, achieving GHG emission reductions throughout the program's duration (see generally 17 CCR Sections 95811, 95812). On July 17, 2017, the California Legislature passed Assembly Bill 398, extending the Cap-and-Trade Program through 2030.

The cap-and-trade regulation provides a firm cap, helping to ensure that the 2020 and 2030 statewide emission limits will not be exceeded. An inherent feature of the Cap-and-Trade Program is that it does not direct GHG emissions reductions in any discrete location or by any particular source. Rather, GHG emissions reductions are ensured on a state-wide basis.

Executive Order B-16-12

In March 23, 2012, Governor Brown issued Executive Order B-16-2012 to encourage zero-emission vehicles (ZEVs) and related infrastructure. It orders CARB, CEC, CPUC, and other relevant agencies to work with the Plug-in Electric Vehicle Collaborative and the California Fuel Cell Partnership to establish benchmarks concerning ZEVs. By 2020, the state's ZEV infrastructure should support up to one million vehicles. By 2025, Executive Order B-16-2012 aims to put over 1.5 million ZEVs on California roads and displace at least 1.5 billion gallons of petroleum. The Executive Order also directs state government to begin purchasing ZEVs. In 2015, 10 percent of state departments' light-duty fleet purchases must be ZEVs, climbing to 25 percent of light-duty fleet purchases by 2020. Executive Order B-16-2012 sets a target for 2050 to reduce GHG emissions in the transportation sector by 80 percent below 1990 levels.

Senate Bill 32 (SB 32) and AB 197

On September 8, 2016, California signed into law Senate Bill 32 (SB 32), which adds Section 38566 to the Health and Safety Code and requires a commitment to reducing statewide GHG emissions by 2020 to 1990 levels and by 2030 to 40 percent less than 1990 levels. SB 32 was passed with companion legislation AB 197 Chapter 250, Statutes of 2016), which provides greater legislative oversight of CARB's GHG regulatory programs, requires CARB to account for the social costs of GHG emissions, and establishes a legislative preference for direct reductions of GHG emissions.

In November 2017, CARB adopted California's 2017 Climate Change Scoping Plan (2017 Update), which outlines the proposed framework of action for achieving California's SB 32 2030 GHG target: a 40 percent reduction in GHG emissions by 2030 relative to 1990 levels.[51] The 2030 target is intended to ensure that California remains on track to achieve the goal set forth by E.O. B-30-15 to reduce statewide GHG emissions by 2050 to 80 percent below 1990 levels.

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51 CARB, *California's 2017 Climate Change Scoping Plan*, November 2017.

The 2017 Update identifies key sectors of the implementation strategy, which includes improvements in low carbon energy, industry, transportation sustainability, natural and working lands, waste management, and water. Through a combination of data synthesis and modeling, CARB determined that the target statewide 2030 emissions limit is 260 MMTCO2e, and that further commitments will need to be made to achieve an additional reduction of 50 MMTCO2e beyond current policies and programs. Key elements of the 2017 Update include a proposed 20 percent reduction in GHG emissions from refineries and an expansion of the Cap-and-Trade program to meet the aggressive 2030 GHG emissions goal and ensure achievement of the 2050 limit set forth by E.O. B-30-15. For the transportations sector, the 2017 Update indicates that while most of the GHG reductions will come from technologies and low carbon fuels, a reduction in the growth of vehicle miles traveled (VMT) is also needed. The 2017 Update indicates that stronger SB 375 GHG reduction targets will enable the State to make significant progress toward this goal, but alone will not provide all of the VMT growth reductions that will be needed. It notes that here is a gap between what SB 375 can provide and what is needed to meet the State's 2030 and 2050 goals. The 2017 Update recommends that local governments consider policies to reduce VMT, including: "land use and community design that reduces VMT; transit oriented development; street design policies that prioritize transit, biking, and walking; and increasing low carbon mobility choices, including improved access to viable and affordable public transportation and active transportation opportunities."

California Environmental Quality Act Guidelines Amendments

California Senate Bill (SB) 97 (Chapter 185, Statutes of 2007) required the Governor's Office of Planning and Research (OPR) to develop *California Environmental Quality Act (CEQA) Guidelines* "for the mitigation of greenhouse gas emissions or the effects of greenhouse gas emissions." The *State CEQA Guidelines* amendments provide guidance to public agencies regarding the analysis and mitigation of the effects of GHG emissions in CEQA documents. The significance of GHG emissions is specifically addressed in *State CEQA Guidelines* Section 15064.4. Section 15064.4 calls for a lead agency to make a "good-faith effort" to "describe, calculate or estimate" GHG emissions in CEQA environmental documents. Section 15064.4 further states that the analysis of GHG impacts should include consideration of (1) the extent to which the project may increase or reduce GHG emissions; (2) whether the project emissions would exceed a locally applicable threshold of significance; and (3) the extent to which the project would comply with "regulations or requirements adopted to implement a statewide, regional, or local plan for the reduction or mitigation of GHG emissions." The guidelines also state that a project's incremental contribution to a cumulative effect is not cumulatively considerable if the project will comply with the requirements in a previously approved plan or mitigation program (including plans or regulations for the reduction of GHG emissions) that provides specific requirements that will avoid or substantially lessen the cumulative

problem within the geographic area in which the project is located (*State CEQA Guidelines* Section 15064(h)(3)).

Senate Bill 375 (SB 375)

SB 375, adopted in 2008, builds on AB 32, SB 375 (Chapter 728, Statutes of 2008) seeks to coordinate land use planning, housing planning, regional transportation planning, and GHG reductions. By coordinating these efforts, it is envisioned that vehicle congestion and travel can be reduced resulting in a corresponding reduction in emissions. SB 375 directed CARB to set regional targets to reduce emissions; regional transportation plans are required to identify how they will meet these targets.

SB 375 has three major components:

- Using the regional transportation planning process to achieve reductions in emissions consistent with AB 32's goals.
- Offering California Environmental Quality Act (CEQA) incentives to encourage projects that are consistent with a regional plan that achieves emissions reductions.
- Coordinating the Regional Housing Needs Allocation (RHNA) process with the regional transportation process while maintaining local authority over land use decisions.

A sustainable communities strategy (SCS) is a required component of the RTP. The SCS is a land use pattern for the region which, in combination with transportation policies and programs, strives to reduce emissions and helps meet CARB's targets for the region. An alternative planning strategy (APS) must be prepared if the SCS is unable to reduce emissions and achieve the emissions reduction targets established by CARB.

Certain transportation planning and programming activities must be consistent with the SCS; however, SB 375 expressly provides that the SCS does not regulate the use of land, and further provides that local land use plans and policies (e.g., general plans) are not required to be consistent with either the RTP or SCS. For the 2018 RTP/SCS cycle, CARB set reduction targets for Tulare County at 5 percent for 2020 and 10 percent for 2035.

Senate Bill 1078, Senate Bill 107, Executive Order S-14-08, and Executive Order S-21-09 (Renewables Portfolio Standard)

On September 12, 2002, Governor Gray Davis signed SB 1078 (Chapter 516, Statutes of 2002) requiring California to generate 20 percent of its electricity from renewable energy by 2017. SB 107 (Chapter 464, Statutes of 2006), signed by the Governor on September 26, 2006 changed the due date for this goal from 2017 to 2010. On November 17, 2008, Governor Arnold Schwarzenegger signed Executive Order S-14-08, which established a Renewables Portfolio Standard goal for California requiring that all retail sellers of

electricity serve 33 percent of their load with renewable energy by 2020. Increased use of renewable energy sources will decrease California's reliance on fossil fuels, reducing emissions of GHGs from the energy sector. In April 2011, SB X1-2 required that all electricity retailers adopt the new RPS goals providing 20 percent renewable sources by the end of 2013, 25 percent by the end of 2016, and 33 percent by the end of 2020. Senate Bill SB 350 of 2015 (Chapter 547, Statutes of 2015) increased the renewable portfolio standard to 50 percent by the year 2030.

Executive Order (EO) S-1-07, the Low Carbon Fuel Standard

On January 18, 2007, EO S-1-07 was issued establishing a statewide goal to reduce at least 10 percent in the carbon intensity of California's transportation fuels by 2020. Regulatory proceedings and implementation of the Low Carbon Fuel Standard have been directed to the California Air Resources Board (ARB). The Low Carbon Fuel Standard has been identified by ARB as a discrete early action item in the *Climate Change Scoping Plan*.[52] CARB expects the Low Carbon Fuel Standard to achieve the minimum 10 percent reduction goal; however, many of the early action items outlined in the *Climate Change Scoping Plan* work in tandem with one another. To avoid the potential for double-counting emission reductions associated with AB 1493 (see previous discussion), the *Climate Change Scoping Plan* has modified the aggregate reduction expected from the Low Carbon Fuel Standard to 9.1 percent.

Executive Order S-13-08

Executive Order S-13-08, signed on November 14, 2008, directs California to develop methods for adapting to climate change impacts through preparation of a statewide plan. In response to this order, the California Natural Resources Agency coordinated with 10 state agencies, multiple scientists, a consulting team, and stakeholders to develop the first statewide, multi-sector adaptation strategy in the country. The resulting report, *2009 California Climate Adaptation Strategy*,[53,54] summarizes the best-known science to assess the vulnerability of the state to climate change impacts, and outlines possible solutions that can be implemented within and across state agencies to promote resiliency. This strategy is the first step in an evolving process to reduce California's vulnerability to climate change impacts.

Adaptation refers to efforts that prepare the state to respond to the impacts of climate change – adjustments in natural or human systems to actual or expected climate changes to minimize harm or take advantage of beneficial opportunities. California's ability to manage its climate risks through adaptation

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52 CARB, *Climate Change Scoping Plan: a framework for change.* December 2008.

53 California Natural Resources Agency, *2009 California Climate Adaption Strategy.* 2009.

54 This report has been updated twice, once in 2014, and once in 2018 to reflect current adaption strategies and incorporate a "Climate Justice" chapter highlighting how equity is woven throughout the entire plan.

depends on a number of critical factors. These include its baseline and projected economic resources, technology, infrastructure, institutional support and effective governance, public awareness, access to the best available scientific information, sustainably managed natural resources, and equity in access to these resources.

California's Energy Efficiency Standards for Residential and Nonresidential Buildings

California established statewide building energy standards following legislative action. The legislation required the standards to:

- be cost effective;
- be based on the building life cycle; and
- include both prescriptive and performance-based approaches.

The standards have been periodically updated as technology and design have evolved. Generally, the standards are updated every three years. As a result of AB 970, passed in the fall of 2000 in response to the state's electricity crisis, an emergency update of the Standards went into effect in June 2001. The Commission then initiated an immediate follow-on proceeding to consider and adopt updated Standards that could not be completed during the emergency proceeding. The 2005 Building Energy Efficiency Standards were adopted in November 2003, took effect October 1, 2005. The latest amendments were made in June 2015 and went into effect on January 1, 2017.

Title 24 of the California Code of Regulations comprises the state Building Standards Code. Part 6 of Title 24 is the California Energy Code, which includes the building energy efficiency standards. The standards include provisions applicable to all buildings, residential and non-residential, which describe requirements for documentation and certificates that the building meets the standards. These provisions include mandatory requirements for efficiency and design of the following types of systems, equipment, and appliances:

- Air conditioning systems
- Heat pumps
- Water chillers
- Gas- and oil-fired boilers
- Cooling equipment
- Water heaters and equipment

- Pool and spa heaters and equipment
- Gas-fired equipment including furnaces and stoves/ovens
- Windows and exterior doors
- Joints and other building structure openings (envelope)
- Insulation and cool roofs
- Lighting control devices

The standards include additional mandatory requirements for space conditioning (cooling and heating), water heating and indoor and outdoor lighting systems and equipment in non-residential, high-rise residential, and hotel or motel buildings.

California Green Building Code & Energy Code

The California Green Building Standards Code (California Code of Regulations, Title 24, Part 11), commonly referred to as the CALGreen Code, is a statewide mandatory construction code that was developed and adopted by the California Building Standards Commission and the California Department of Housing and Community Development in 2008. The purpose of this code is to improve public health, safety and general welfare by enhancing the design and construction of buildings through the use of building concepts having a reduced negative impact or positive environmental impact and encouraging sustainable construction practices including recycling of construction (diversion of 50 percent) and other waste streams.

The California Energy Code (California Code of Regulations, Title 24, Part 6) was created as part of the California Building Standards Code (Title 24 of the California Code of Regulations) by the California Building Standards Commission in 1978 to establish statewide building energy-efficiency standards to reduce California's energy consumption. These standards include provisions applicable to all buildings, residential and nonresidential, which describe requirements for documentation and certificates that the building meets the standards. These provisions include mandatory requirements for efficiency and design of energy systems, including space conditioning (cooling and heating), water heating, indoor and outdoor lighting systems and equipment, and appliances. California's Building Energy Efficiency Standards are updated on an approximately 3-year cycle as technology and methods have evolved. The 2016 Standards, effective January 1, 2017, focus on several key areas to improve the energy efficiency of newly constructed buildings and additions and alterations to existing buildings, and include requirements that will enable both demand reductions during critical peak periods and future solar electric and thermal system installations.

Senate Bill 1 (SB 1)

SB 1 (2006) (Chapter 598, Statutes of 2006) set a goal to install 3,000 megawatts of new solar capacity by 2017, moving the state toward a cleaner energy future and helping lower the cost of solar systems for consumers. The "Million Solar Roofs" Program is a ratepayer-financed incentive program aimed at transforming the market for rooftop solar systems by driving down costs over time. It provides up to $3.3 billion in financial incentives that decline over time.

Assembly Bill 811 (AB 811)

AB 811 (2008) (Chapter 159, Statutes of 2008) authorizes California cities and counties to designate districts within which willing property owners may enter into contractual assessments to finance the installation of renewable energy generation and energy efficiency improvements that are permanently fixed to the property. These financing arrangements would allow property owners to finance renewable generation and energy efficiency improvements through low-interest loans that would be repaid as an item on the property owner's property tax bill.

Executive Order S-13-08

On April 29, 2015, Governor Brown issued Executive Order B-30-15. Therein, the governor directed the following:

- Established a new interim statewide reduction target to reduce GHG emissions to 40 percent below 1990 levels by 2030 (subsequently codified in SB 32).
- Ordered all state agencies with jurisdiction over sources of GHG emissions to implement measures to achieve reductions of GHG emissions to meet the 2030 and 2050 reduction targets.
- Directed CARB to update the Climate Change Scoping Plan to express the 2030 target in terms of million metric tons of CO_2 equivalent.

Senate Bill 350

Known as the Clean Energy and Pollution Reduction Act of 2015, SB 350 (Chapter 547, Statutes of 2015) was approved by Governor Brown on October 7, 2015. SB 350 will (1) increase the standards of the California RPS program by requiring that the amount of electricity generated and sold to retail customers per year from eligible renewable energy resources be increased to 50 percent by December 31, 2030; (2) require the State Energy Resources Conservation and Development Commission to establish annual targets for statewide energy efficiency savings and demand reduction that will achieve a cumulative doubling of statewide energy efficiency savings in electricity and natural gas final end uses of retail customers by January 1, 2030; and (3) provide for the evolution of the Independent System Operator (ISO) into a regional organization;. Among other objectives, the Legislature intends to double the energy

efficiency savings in electricity and natural gas final end uses of retail customers through energy efficiency and conservation.

SB 1383-Short Lived Climate Pollutants

Short-lived climate pollutants (SLCP) SLCPs include black carbon (soot), methane, and fluorinated gases (F-gases). SB 1383 of 2016 (Chapter 395, Statutes of 2016) sets forth legislative direction for control of SLCPs. It requires CARB, no later than January 1, 2018, to approve and begin implementing its SLCP strategy to achieve the following reductions in emissions by 2030 compared to 2013 levels: methane by 40 percent, hydrofluorocarbons by 40 percent, and black carbon (non-forest) by 50 percent. The bill also specifies targets for reducing organic waste in landfills. SB 1383 also requires CARB to adopt regulations to be implemented on or after January 1, 2024 specific to the dairy and livestock industry, requiring a 40 percent reduction in methane emissions below 2013 levels by 2030, if certain conditions are met. Lastly, the bill requires CalRecycle to adopt regulations to take effect on or after January 1, 2022 to achieve specified targets for reducing organic waste in landfills.

4.6.2.4 Regional

San Joaquin Valley Air Pollution Control District

To assist Lead Agencies, project proponents, permit applicants, and interested parties in assessing and reducing project-specific GHG impacts on global climate change, the San Joaquin Valley Air Pollution Control District (SJVAPCD) has adopted the guidance: *Guidance for Valley Land-use Agencies in Addressing GHG Emission Impacts for New Projects under CEQA*[55] and the policy: *District Policy – Addressing GHG Emission Impacts for Stationary Source Projects Under CEQA When Serving as the Lead Agency*.[56] The guidance and policy rely on the use of performance-based standards, otherwise known as Best Performance Standards (BPS) to assess significance of project specific GHG emissions on global climate change during the environmental review process, as required by CEQA.

Use of BPS is a method of streamlining the CEQA process of determining significance and is not a required emission reduction measure. Projects implementing BPS would be determined to have a less than cumulatively significant impact. Otherwise, demonstration of a 29 percent reduction in GHG emissions, from business-as-usual, is required to determine that a project would have a less than cumulatively significant impact. The guidance does not limit a lead agency's authority in establishing its

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55 SJVAPCD, *Guidance for Valley Land-use Agencies in Addressing GHG Emission Impacts for New Projects under CEQA.* December 2009.

56 SJVAPCD, *District Policy – Addressing GHG Emission Impacts for Stationary Source Projects Under CEQA When Serving as the Lead Agency.* December 2009.

own process and guidance for determining significance of project related impacts on global climate change. However, these guidance documents are tailored for new projects and stationary source projects, and the 2018 RTP/SCS would not fit under either of these categories.

Local Climate Action Plans

Three TCAG member jurisdictions have developed climate action plans (CAPs) that set goals and targets on the reduction of GHG emissions, along with policies to help achieve those goals. The cities of Tulare and Visalia, as well as Tulare County have conducted baseline emissions inventories, thereby establishing a reference point for GHG emissions reduction. Baseline and projected 2020 and 2030 GHG emissions from these jurisdictions are shown in **Table 4.6-4, Existing and Projected Emissions Reported in Tulare County Climate Action Plans,** below.

The completed climate action plans address similar issues related to emissions produced by transportation, energy usage, and other operational activities. The types and quantity of emissions produced in the TCAG region vary among jurisdictional boundaries.

For most jurisdictions, transportation and energy usage produce a majority of GHG emissions. Policies observed among climate action plans in the region establish a framework for improved circulation networks and energy conservation. Transportation policies aim to reduce VMT by offering more opportunities for alternative transportation modes, such as bicycling and transit use. In addition, many of the climate action plans frame policies to promote transit-oriented development (TOD). Future residents in these developments will have close access to local transit, in many cases eliminating their need for individual transportation such as an automobile. Jurisdictions include programs to improve energy efficiencies in both old and new buildings and decrease the use of fossil fuels by providing incentives for renewable energy sources.

Table 4.6-4
Existing and Projected Emissions Reported in Tulare County Climate Action Plans

Jurisdiction	Type	Annual Baseline Emissions (MT CO_2E)	Projected 2020 Business-as-Usual Annual Emissions (MT CO_2E)	Emission Reductions Achieved by CAP 2020 (MT CO_2E)	Projected 2030 Business-as-Usual Annual Emissions (MT CO_2E)	Emission Reductions Achieved by CAP 2030 (MT CO_2E)
City of Tulare	Climate Action Plan	2006: 820,291	1,262,252	-452,095	1,835,455	-671,497
City of Visalia	Climate Action Plan	2005: 922,783	1,241,020	-445,841	1,424,556	-821,058
Tulare County[1]	Climate Action Plan	2007: 5,208,060	5,715,297	-1,497,408	6,105,480	N/A

Source: Tulare County, Climate Action Plan, August 2012; City of Tulare, Climate Action Plan, April 2011; City of Visalia, Climate Action Plan, December 2013.
1 In 2017, Tulare County updated their CAP with the Climate Action Plan 2016/2017 Annual Progress Report. According to the report (Table 13), Tulare County is on track to meet every CAP metric. It is important to note that development (housing and commercial units) and subsequently VMT has declined over the past two years, since fiscal year 2015/2016.
N/A = Not Available

4.6.3 ENVIRONMENTAL IMPACTS

4.6.3.1 Thresholds of Significance

The following thresholds for determining the significance of impacts related to GHGs are contained in the environmental checklist form contained in Appendix G of the *State CEQA Guidelines*. Impacts related to GHGs are considered significant if the proposed project would:

- Generate GHG emissions, either directly or indirectly, that may have a significant impact on the environment; or
- Conflict with an applicable plan, policy or regulation adopted for the purpose of reducing the emissions of GHGs.

State CEQA Guidelines Section 15064.4(a) confirms that lead agencies retain the discretion to determine the significance of GHG emissions. The Guidelines advise lead agencies to consider the following factors in determining the significance of GHG emissions: whether the project increases or reduces GHG emissions compared to the existing environmental setting, whether project emissions exceed a threshold of significance identified by the lead agency as appropriate to the project, and the extent to which the project

compiles with regulations or requirements of certain adopted GHG reduction plans. (*State CEQA Guidelines* Section 15064.4(b).) However, fundamentally, the courts recognize that lead agencies are allowed to decide what threshold of significance they will apply to a project.

4.6.3.2 Methodology

The following section summarizes the methodology used to evaluate the impacts of implementation of the Plan on GHG emissions.

Determination of Significance

Analysis of the GHG impacts of the Plan was conducted based on regional-level modeling of on-road emissions[57] and household consumption of energy and associated GHG emissions.[58] In the analysis below, future year emissions are compared to 2005, 2017, and 1990 scenarios.[59]

4.6.3.3 Impacts and Mitigation Measures

Impact GHG-1 **Generate GHG emissions, either directly or indirectly, that may have a significant impact on the environment.**

The 2018 RTP/SCS identifies transportation improvements and projected growth for the TCAG region. Between 2017 and 2042 the County would experience increases in population, households and jobs (see **Section 3.0, Project Description**, and **Section 4.9, Population and Housing**). The Plan focuses development in a compact pattern, which would reduce per capita GHG emissions as compared to existing conditions because compact development generally uses less energy (e.g., multi-family housing units are insulated by each other as compared to single-family units and, therefore, require less heating and cooling) and water (e.g., multi-family units or small lot homes have less landscaping requiring irrigation as compared to large lot single-family homes).

GHG emissions result from direct and indirect sources. Direct emissions include emissions from fuel combustion in vehicles (i.e., autos, trucks, trains, buses, planes, ships, and trains) and natural gas combustion from stationary and area sources. Indirect sources include off-site emissions occurring as a result of electricity and water consumption. Regional GHG emissions are estimated for years 2017 and 2042, based on TCAG's forecasts for employment, housing, and vehicle traffic.

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57 TCAG Model 2018 and EMFAC 14

58 Envision Tomorrow. Envision Tomorrow Online. Available online at: http://envisiontomorrow.org/.

59 1990 emissions estimated by reducing 2005 emissions by 15%. These emissions are used to determine significance under SB 375.

Construction

Construction of both transportation projects and development through 2042 will result in direct and indirect GHG emissions. Construction activities, including worker vehicle trips, transport of materials to and from the construction site, and operation of construction equipment, result in GHG emissions. Construction of individual projects occurs over a relatively short period as compared to the life of a project. Therefore, emissions due to construction activities are often amortized over the life of a project (e.g., 30 years).

Typically, individual project construction characteristics are identified, such as the timing of construction phases and equipment fleet mix. However, due to the scale of construction activity associated with implementation of the Plan, construction would occur continuously throughout the life of the Plan as individual projects are constructed and, therefore, could result in significant emissions. Annual construction-related GHG emissions would vary depending on the number and type of projects being constructed in a given year (which would vary according to the economy), and the type of construction equipment being used, however, this level of data is unavailable for analysis. Nonetheless, it is expected that construction activities would result in annual GHG emissions that represent a small proportion of total annual GHGs from operational sources such as transportation and land use emissions.

Residential and Commercial Energy Use

TCAG used the Envision Tomorrow land use tool[60,61] to estimate per household GHG emissions for existing conditions and the year 2042. Under the proposed Plan, GHG emissions are estimated to be approximately 13.8 $MTCO_2e$/Year per household in 2042. Existing per household GHG emissions are estimated to be 15.3 $MTCO_2e$/Year per household. Therefore, the plan would result in a decrease in per capita household GHG emissions compared to existing conditions. Further, as demonstrated in Section 4.12.1 Energy, residential energy use (electricity and natural gas use) would be reduced from 204.8 BTU per year to 148.3 BTU per year. Similarly, total energy use (in BTU per year) would be reduced, so GHG emissions from energy use would also be reduced.

Data is not available for commercial and other potential sources such as agricultural machinery, agricultural production, solid waste collection and disposal, trains, airplanes, stationary sources, and industrial processes. This is due to a lack of information about these sources necessary to quantify

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60 Envision Tomorrow. Envision Tomorrow Online. Available online at: http://envisiontomorrow.org/ CO2 Emissions per household

61 The GHG emissions comparison from Envision Tomorrow calculates emissions per household as a factor of household energy use (which varies by development type). As such, the outputs include emissions related to electricity and natural gas but not mobile sources.

emissions. For example, new agricultural sources have unique emissions inventories, and GHG emissions must be calculated using precise information regarding the specific process. No such information exists for future agricultural sources of GHG emissions. However, because of the increase in population, it can be conservatively anticipated an increase in use and emissions most sources beyond existing conditions would occur.

Transportation

Mobile sources are a major source of GHG emissions and they are the primary source of emissions the RTP/SCS is designed to address. Vehicle emissions were modeled by TCAG using the regional transportation model and EMFAC 14. Results are presented in **Table 4.6-5, GHG Total Mobile Source Emissions (2017, 2035, 2042),** below**.**

Table 4.6-5
GHG Total Mobile Source Emissions (2017, 2035, 2042)

Source	Population	Total Mobile Source Emissions ($MTCO_2e$/Day)	GHG Per Capita (Pounds/Day of CO_2e)
2017 Existing Conditions	471,842	6,109	28.54
2035 RTP/SCS	568,186	4,543	17.63
2042 RTP/SCS	604,969	4,561	16.62

Source: Emissions and population (2017, 2035, 2042) data provided by TCAG, 2018.

As shown in **Table 4.6-5**, mobile source GHG emissions countywide would decrease 1,548 $MTCO_2e$ per day in 2042 as compared to 2017. This represents a 25 percent decrease from 2017 to 2042.

Conclusion

Both mobile source emissions and energy and natural gas emission would decrease under the 2018 RTP/SCS, however, construction emissions and total emissions associated with future land use sources would likely increase. Therefore, conservatively, it is assumed that land use GHG emissions increases would be greater than mobile source GHG emission reductions resulting in an increase in GHG emissions greater than existing conditions. Therefore, the 2018 RTP/SCS direct and indirect emissions increases would be significant.

Level of Significance Before Mitigation

Significant.

Mitigation Measures

Implement **MM-AIR-1(a), MM EN-1(a), MM-TR-1(a)** and **MM-TR-1(b).**

MM-GHG-1(a): TCAG shall, through its ongoing outreach and technical assistance programs, work with and encourage local governments to adopt policies and develop practices that lead to GHG emission reductions. These activities shall include, but are not limited to, providing technical assistance and information sharing on developing local Climate Action Plans.

MM-GHG-1(b): Consistent with the provisions of Section 15091 of the *State CEQA Guidelines*, TCAG has identified mitigation measures capable of reducing GHG emissions that are within the jurisdiction and responsibility of local agencies (land use projects). Local agencies should adopt, implement, and update Climate Action Plans consistent with 2017 Scoping Plan and General Plan Guidelines guidance that do the following:

a) Quantify GHG emissions, both existing and projected over a specified period, resulting from activities within each agency's jurisdiction;

b) Establish a level, based on substantial evidence, below which the contribution to GHG emissions from activities covered by the plan would not be cumulatively considerable;

c) Identify and analyze the GHG emissions resulting for specific actions or categories of actions anticipated within their respective jurisdictions;

d) Specify measures or a group of measures, including performance standards, that substantial evidence demonstrates, if implemented on a project-by-project basis, would collectively achieve the specified emissions level;

e) Establish a mechanism to monitor the plan's progress toward achieving that level and to require amendment if the plan is not achieving specified levels; and

f) Be adopted in a public process following environmental review.

CAPs should, when appropriate, incorporate planning and land use measures from the California Attorney General's latest list of example policies to address climate change at both the plan and project level. Specifically, at the plan level, land use plans can and should, when appropriate and feasible, incorporate planning and land use measures from the California Attorney General's latest list of example policies to address climate change (http://ag.ca.gov/globalwarming/pdf/GP_policies.pdf), including, but not limited to policies from that web page such as:

- Smart growth, jobs/housing balance, transit-oriented development, and infill development through land use designations, incentives and fees, zoning, and public private partnerships
- Create transit, bicycle, and pedestrian connections through planning, funding, development requirements, incentives and regional cooperation, and create disincentives for auto use
- Energy and water-efficient buildings and landscaping through ordinances, development fees, incentives, project timing, prioritization, and other implementing tools

MM-GHG-1(c): Consistent with the provisions of Section 15091 of the *State CEQA Guidelines*, TCAG has identified mitigation measures capable of reducing GHG emissions that are within the jurisdiction and responsibility of local agencies (land use projects). Where the Lead Agency has identified that a project has the potential for significant effects, the Lead Agency can and should consider mitigation measures to minimize land use project GHG emissions, including but not limited to those on the Attorney General's list of project-specific mitigation measures available at the following web site: http://ag.ca.gov/globalwarming/pdf/ GW_mitigation_measures.pdf, such as:

- Adopt a comprehensive parking policy that discourages private vehicle use and encourages the use of alternative transportation
- Build or fund a major transit stop within or near development
- Provide public transit incentives such as free or low-cost monthly transit passes to employees, or free ride areas to residents and customers
- Incorporate bicycle lanes, routes and facilities into street systems, new subdivisions, and large developments
- Require amenities for non-motorized transportation, such as secure and convenient bicycle parking
- Additional measures from additional resources listed by the California Attorney General at the following webpage: https://oag.ca.gov/environment/ceqa/measures.

Level of Significance After Mitigation

Because this PEIR evaluates impacts at the programmatic level, all project circumstances are not foreseeable and these mitigation measures may not be feasible or effective for some projects. Therefore, even with implementation of **Mitigation Measures MM-GHG-1(a)** through **MM-GHG-1(c), MM-AIR-1(a)**, and **MM-EN-1(a)**, substantial increases in GHG emissions would remain. Although per capita

emissions will be reduced, reductions in total GHG emissions below the 2017 level are not feasible in light of the forecasted increase of 133,127 people in the region by 2042. Thus, this impact would remain significant and unavoidable. No additional feasible mitigation measures are available to reduce significant and unavoidable impacts beyond those identified in this PEIR. It should be noted that the State of California, through its 2017 Scoping Plan, has identified many additional GHG reduction strategies that are the State's responsibility to implement; energy sector emission reductions through the Renewable Portfolio Standard, mobile source emission reductions through the low carbon fuel standard and vehicle fleet electrification, and industrial source emission reductions through the cap-and-trade program.

Impact GHG-2: Conflict with an applicable plan, policy or regulation adopted for the purpose of reducing the emissions of GHGs.

The following evaluates Project consistency with the primary GHG statutes related to transportation and development: SB 375, AB 32 and SB 32, as well as EO S-3-05 and local CAPs.

SB 375

SB 375 requires that local MPOs provide plans to reduce GHG emissions from cars and light duty trucks compared to 2005 levels. The specific reduction targets are determined by CARB. For this RTP/SCS, CARB determined that the 2020 target is a 5 percent reduction from 2005 emissions levels, and the 2035 target is a 10 percent reduction. Implementation of the 2018 RTP/SCS would exceed these GHG reduction targets, providing reductions of 13 percent in 2020 and almost 17 percent in 2035 (**Table 4.5-6, Results of Greenhouse Gas Emissions and Vehicle Trips Reductions**). Therefore, there is no conflict with SB 375, and this impact is less than significant.

The 2018 RTP/SCS achieves the reductions by a mix of land use strategies, transportation management, and transportation projects. The 2018 RTP/SCS also notes state and regional programs that assist in reaching the reductions targets, such as state funding for transportation management and infrastructure improvement, regional air district programs to replace inefficient or heavily polluting vehicles, regional energy planning, and efficient commuting programs.

Table 4.6-6
Results of Greenhouse Gas Emissions and Vehicle Trips Reductions

Indicators & Measures	2005	2020	2035	2042
Total Population	404,148	488,293	568,186	604,969
Vehicle Miles Traveled (VMT)				
VMT per Weekday	8,705,754	9,274,871	10,441,330	10,988,544
Per Capita VMT SB 375	21.54	18.99	18.38	18.16
Difference between 2005 Base Per Capita VMT (21.54 miles)	0.0%	-11.8%	-14.69%	-15.68%
SB 375 CO_2 Emissions				
Total SB 375 CO_2 Emissions (tons/day)	3,404	3,586	3,992	4,219
Per Capita SB 375 CO_2e Emissions (lbs/day)	18.57	16.19	15.49	15.37
Difference between 2005 Base Per Capita CO_2 (18.57 lbs)	0.0%	-12.8%	-16.6%	-17.2%
SB 375 Targets Through September 30, 2018 (3/22/2018)	0.0%	-5.0%	-10.0%	N/A

Source: TCAG, 2018 RTP/SCS, 2018.

AB 32

SB 375 was adopted in order to assist the state in meeting AB 32 targets. By meeting SB 375 targets, the 2018 RTP/SCS has successfully fulfilled its responsibilities with regard to AB 32. Furthermore, the 2017 Scoping Plan indicates that the state as a whole is on course to reach the 2020 emissions target.[62] CARB cites the successful implementation of energy efficiency measures and renewable energy requirements as major factors in this progress.[63] It also includes reductions resulting from implementation of SB 375. CARB also describes how the Cap and Trade program provides a firm cap for covered industrial sources, ensuring that the 2020 emission targets are achieved.[64] The 2018 RTP/SCS does not conflict with any of the regulations or programs described by CARB as central to the success of AB 32. Consequently there is no conflict with AB 32, and this impact is less than significant.

Residential and Commercial Development

As noted above, GHG emissions per household would be less under the proposed Plan than under existing conditions.

As discussed above, data is not available for commercial and other potential sources such as agricultural machinery, agricultural production, solid waste collection and disposal, trains, airplanes, stationary

62 California Air Resources Board, *California's 2017 Climate Change Scoping Plan*. November, 2017.

63 Ibid.

64 Ibid.

sources, and industrial processes. This is due to a lack of information about these sources necessary to quantify emissions. However, because of the increase in population, it can be reasonably anticipated that this would result in an increase in use and emissions from these sources beyond existing conditions.

While energy use (electricity and natural gas use) per household would decrease, total energy use from all sectors (i.e., industrial, agricultural, etc.) would likely increase due to the increases in population, the number of new housing units, and jobs (assumed to be associated with an increase in commercial square footage). Therefore, total energy-related GHG emissions, as a result of land uses included in the 2018 RTP/SCS would increase between 2017 and 2042.[65]

Transportation

Table 4.6-5 (above) shows total GHG emissions from all transportation sources (not just cars and light-duty trucks and not following SB 375 rules for GHG emissions accounting) for the years 2017, 2035 and 2042. The results in **Table 4.6-5** show that there will be a net decrease in emissions of approximately 1,548 $MTCO_2e$ per day between 2017 and 2042. GHG emissions per capita would be 25% below 2017 levels by 2042.

SB 32 and EO S-3-05

SB 32 requires a reduction in GHG emissions of 40% below 1990 levels by 2035. To achieve this goal, *California's 2017 Climate Change Scoping Plan* sets per capita targets for both 2030 and 2050. The statewide per capita GHG target for 2030 is no more than 6 MTCO2e, and 2 MTCO2e by 2050.[66] As shown in **Table 4.6-7, Mobile Source Total GHG Emissions**, emissions from transportation sources under the 2018 RTP/SCS would be on track to be consistent with the state's ability to achieve the SB 32 GHG reduction target of 40 percent below 1990 levels by 2030, and the state's ability to achieve the EO S-3-05 GHG reduction target of 80 percent below 1990 levels by 2050. However, other sources of GHG emissions associated with the future land use would also increase (as discussed above). Therefore, the 2018 RTP/SCS would conflict with the State's ability to achieve SB 32 and EO S-3-05 GHG reduction targets, and this would be significant.

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65 TCAG 2018 RTP/SCS

66 California Air Resources Board, *California's 2017 Climate Change Scoping Plan*. November, 2017.

Table 4.6-7
Mobile Source Total GHG Emissions

Source	Estimated Population	Total Mobile Source Emissions ($MTCO_2e$/Day)	Total Mobile Source Emissions ($MTCO_2e$/Year)	GHG Per Capita (Pounds/Day of CO_2e)	GHG Per Capita ($MTCO_2e$/Year)
1990 Conditions	311,921	5,535	2,020,275	39.12	6.48
2005 Conditions	404,148	6,512	2,376,880	35.52	5.88
2017 Existing Conditions	471,842	6,109	2,229,785	28.54	4.73
2035 RTP/SCS	568,186	4,543	1,658,195	17.63	2.92
2042 RTP/SCS	604,969	4,561	1,664,765	16.62	2.75

Note: 1990 emissions estimated as approximately 15% below 2005 emission levels.
Source: *TCAG, 2018;* US Census Bureau, 2018.

Local Climate Action Plans

Table 4.6-8, **Local Climate Action Plan Consistency Analysis,** demonstrates the project's consistency with the actions and strategies set forth in the Tulare County, City of Visalia, and City of Tulare CAPs. The project would also be consistent with the applicable goals and principles set forth in these GHG reduction plans. Therefore, the project would be consistent with the GHG reduction related actions and strategies contained in these plans, and this would result in a less than significant impact.

Table 4.6-8
Local Climate Action Plan Consistency Analysis

Agency	Strategy	2018 RTP/SCS Consistency
Tulare County	**Compact Development:** • Higher development densities to shorten travel distances and increase the feasibility of frequent transit service • Incremental development and infill that minimizes travel distances and allows for efficient expansion of pedestrian and bicycle infrastructure, transit services, and road improvements • Farmland and Open Space preservation to focus development in existing communities and hamlets that are more walkable and better served by transit.	**Consistent.** The 2018 RTP/SCS is designed to support communities in developing walkable, bikeable, and transit-ready neighborhoods that work in tandem with motor vehicle facilities for a safe and comprehensive local circulation system for people of all levels of income and various availability of resources. The 2018 RTP/SCS is designed to encourage bicycle usage in Tulare County by providing safe and convenient bike routes and facilities.

Agency	Strategy	2018 RTP/SCS Consistency
Tulare County	**Transit and Pedestrian Oriented and Traditional Neighborhood Design:** • Locate high-density development close to commercial and service destinations that are within walking distance • Provide direct pedestrian connections between uses to minimize walking distances • Locate transit stops and infrastructure near to high-density development to maximize the number of people within walking distance • Provide transit infrastructure such as benches and shelters at locations that maximize accessibility • Construct narrow streets to slow traffic and allow room for pedestrian infrastructure • Traffic calming measures such as roundabouts, and pedestrian bulb outs to improve flow and enhance pedestrian safety • Use a grid street system to provide direct routes to many destinations • Require tree-lined streets with drought tolerant trees to shade pedestrian routes • Storefronts near the street to create an interesting pedestrian orientation • Provide parking lots in the back or in public lots to minimize separation of compatible uses • Allow second story residential mixed use in downtown commercial areas and large mixed-use projects to create a more active pedestrian environment after normal business hours	**Consistent.** The 2018 RTP/SCS is designed to support communities in developing walkable, bikeable, and transit-ready neighborhoods that work in tandem with motor vehicle facilities for a safe and comprehensive local circulation system for people of all levels of income and various availability of resources. The 2018 RTP/SCS is designed to minimize environmental impacts of transportation projects and encourage the coexistence of nature and human circulation needs. The 2018 RTP/SCS is designed to support circulation projects that maintain and improve safety and security. The 2018 RTP/SCS is designed to encourage and support the development of a safe, efficient, effective, and economical public transit system. The 2018 RTP/SCS is designed to support the increased coordination of all transit services in Tulare County. The 2018 RTP/SCS is designed to develop and maintain a connected and multi-modal regional circulation network that is convenient, safe, and efficient. The 2018 RTP/SCS is designed to encourage coordinated development to achieve an improved jobs-housing balance in the regional. This includes encouraging mixed-use developments and encouraging provision of an adequate supply of housing for the region and adequate sites to accommodate business expansion to minimize interregional trips and long-distance commuting.
Tulare County	**Pedestrian and Bicycle Infrastructure** • Provide sidewalks and pedestrian paths that connect uses that would attract walkers • Provide safe, well-connected bicycle paths and lanes that encourage bicycle travel • Secure bicycle parking for employment sites to increase convenience for cyclists • Bike racks for commercial development to provide security for bikes during shopping trips.	**Consistent.** The 2018 RTP/SCS is designed to support communities in developing walkable, bikeable, and transit-ready neighborhoods that work in tandem with motor vehicle facilities for a safe and comprehensive local circulation system for people of all levels of income and various availability of resources. The 2018 RTP/SCS is designed to encourage bicycle usage in Tulare County by providing safe and convenient bike routes and facilities. The 2018 RTP/SCS is designed to develop and maintain a connected and multi-modal regional circulation network that is convenient, safe, and efficient.
Tulare County	**Transit Infrastructure and Support Policies and Measures** • Provide a wide variety public transportation options that reduce vehicle trips and miles traveled such as transit and rail service • Coordinate transit service provided by various transit agencies in the County to make service	**Consistent.** The 2018 RTP/SCS is designed to support communities in developing walkable, bikeable, and transit-ready neighborhoods that work in tandem with motor vehicle facilities for a safe and comprehensive local circulation system for people of all levels of income and various availability of resources. The 2018 RTP/SCS is designed to encourage and

Agency	Strategy	2018 RTP/SCS Consistency
	as convenient as possible for potential riders • Provide quality transit and rail facilities and equipment that will provide system users with reasonable travel times and comfort • Support a variety of rail options including existing Amtrak services and potential high speed rail that will provide competitive travel times and costs compared to flying and driving • Preserve rail corridors for future use as light rail or trail corridors	support the development of a safe, efficient, effective, and economical public transit system. The 2018 RTP/SCS is designed to develop and maintain a connected and multi-modal regional circulation network that is convenient, safe, and efficient. The 2018 RTP/SCS is designed to develop an efficient regional road and circulation system that provides maximum achievable mobility and accessibility for vehicles, bicycles, pedestrians, and public transportation. The 2018 RTP/SCS is designed to develop an efficient regional road and circulation system that provides maximum achievable mobility and accessibility for vehicles, bicycles, pedestrians, and public transportation.
Tulare County	**Transportation Management Programs** • Transportation Demand Management programs encourage employees to use alternative modes of transportation for commute trips through incentives and information exchange regarding available options • Transportation Management Associations provide transportation services and expertise to multiple employers that may be too small individually to provide effective services. • Ridesharing and matching programs help increase carpool participation by identifying and coordinating potential participants	**Consistent.** The 2018 RTP/SCS is designed to promote employer and personal strategies that will encourage the reduction of vehicle miles traveled. This includes encouraging employers to utilize policies such as flex hours and telecommuting, and supporting outreach programs that encourage carpooling/rideshare, transit use, bicycling, walking, and vanpools as alternatives to the single occupant vehicle. The 2018 RTP/SCS plans for and implements coordination of land use and alternative modes of transportation that would reduce vehicle miles traveled by providing residents transportation options in multiple modes. This includes supporting coordinated alternative modes of transportation including transit, pedestrian, bicycle, and rideshare and vanpool programs.
Tulare County	**Building Energy Efficiency Measures** • New buildings to provide energy conserving features such as increased insulation in walls and roofs, cool light colored roofs, high efficiency window • Use high efficiency heating, ventilation, and cooling equipment in buildings • Use passive solar designs and day-lighting to reduce heating and lighting demands • Landscaping the shades buildings or parking lots to reduce ambient temperatures around buildings • Provide solar ready roofs that provide adequate area to install photovoltaic panels and avoid shading of panels with roof structures and landscaping • Install solar water heating systems • Promote retrofits of older less efficient buildings with energy conserving devices	**Not applicable.** The 2018 RTP/SCS focuses on transportation and land use policy. It does not provide construction policy.
Tulare	**Water Conservation Measures**	**Consistent.** The 2018 RTP/SCS is designed to

Agency	Strategy	2018 RTP/SCS Consistency
County	• Expand groundwater recharge to capture runoff and water available during wet years. • Use reclaimed water from tertiary plants for irrigation in appropriate locations. • Use native and drought tolerant landscaping. • Require the installation of low-flow fixtures. • Smart irrigation technologies that apply water based on plant requirements and that direct water flow only where needed.	develop a sustainable regional road and circulation system. This includes developing projects that are valuable to the regional road miles traveled, improve level of service, contribute to a reduction in air quality pollutants and greenhouse gases, conserve agricultural land, habitat, groundwater recharge areas, and create safe travel corridors. However, as noted above, the 2018 RTP/SCS does not provide construction or renovation policies.
Tulare County	**Solid Waste Reduction and Recycling Measures** • Encourage the use of recycled materials in its own operations and purchases. • Provide sites and publicity for recycling events. • Work with recycling contractors on innovative programs to encourage residents and businesses to take advantage of recycling services.	**Not applicable.** The 2018 RTP/SCS focuses on transportation and land use policy. It does not provide recycling policy.
Tulare County	**Agricultural Measures** • Encourage energy production and alternative energy projects with assistance in identifying appropriate sites and with the permit process. • Build on its advanced agricultural technology base to provide conditions supportive for developing a strong biotech and biofuels industry.	**Not applicable.** The 2018 RTP/SCS focuses on transportation and land use policy. It does not provide agricultural siting, permitting, or technology policy.
City of Visalia	**Energy Measures** • Solar photovoltaic – Institutional Barrier Removal • Increase in Solar Photovoltaic Installations • Energy Upgrade California • Southern California Edison Small Business Direct Install Program • Southern California Gas Weatherization Program • Community Service Employment Training Weatherization Program • Urban Forestry • Compact Fluorescent Light	**Not applicable.** The 2018 RTP/SCS focuses on transportation and land use policy. It does not provide construction, renovation, or utility policy.
City of Visalia	**Transportation Measures** • Sequoia National Park Shuttle Service Bus • Bicycle Path Plan • Vi-Cycle Program • Dare to Spare Challenge • Increase Transit Ridership • Traffic Light Synchronization	**Consistent.** The 2018 RTP/SCS is designed to support communities in developing walkable, bikeable, and transit-ready neighborhoods that work in tandem with motor vehicle facilities for a safe and comprehensive local circulation system for people of all levels of income and various availability of resources. The 2018 RTP/SCS is designed to encourage and support the development of a safe, efficient, effective, and economical public transit system. The 2018 RTP/SCS is designed to develop and

Agency	Strategy	2018 RTP/SCS Consistency
		maintain a connected and multi-modal regional circulation network that is convenient, safe, and efficient. The 2018 RTP/SCS is designed to develop an efficient regional road and circulation system that provides maximum achievable mobility and accessibility for vehicles, bicycles, pedestrians, and public transportation. The 2018 RTP/SCS is designed to encourage bicycle usage in Tulare County by providing safe and convenient bike routes and facilities. The 2018 RTP/SCS is designed to minimize environmental impacts of transportation projects and encourage the coexistence of nature and human circulation needs. The 2018 RTP/SCS is designed to support circulation projects that maintain and improve safety and security. The 2018 RTP/SCS is designed to support the increased coordination of all transit services in Tulare County.
City of Visalia	**Waste and Resource Conservation** • Waste-to-Energy Program • Construction and Demolition Debris Recycling Program • Yard Waste/Food Scrap Composting Program	**Not applicable.** The 2018 RTP/SCS focuses on transportation and land use policy. It does not provide waste and recycling policy.
City of Tulare	**Increase energy efficiency and conservation**	**Not applicable.** The 2018 RTP/SCS focuses on transportation and land use policy. It does not provide construction, renovation, or utility policy.
City of Tulare	**Promote and support renewable energy generation and use**	**Not applicable.** The 2018 RTP/SCS focuses on transportation and land use policy. It does not provide construction, renovation, or utility policy.
City of Tulare	**Shift single-occupancy vehicle trips to alternative modes**	**Consistent.** The 2018 RTP/SCS is designed to support communities in developing walkable, bikeable, and transit-ready neighborhoods that work in tandem with motor vehicle facilities for a safe and comprehensive local circulation system for people of all levels of income and various availability of resources. The 2018 RTP/SCS is designed to encourage and support the development of a safe, efficient, effective, and economical public transit system. The 2018 RTP/SCS is designed to develop and maintain a connected and multi-modal regional circulation network that is convenient, safe, and efficient. The 2018 RTP/SCS is designed to develop an efficient regional road and circulation system that provides maximum achievable mobility and accessibility for vehicles, bicycles, pedestrians, and public transportation. The 2018 RTP/SCS is designed to encourage bicycle

Agency	Strategy	2018 RTP/SCS Consistency
		usage in Tulare County by providing safe and convenient bike routes and facilities. The 2018 RTP/SCS is designed to minimize environmental impacts of transportation projects and encourage the coexistence of nature and human circulation needs. The 2018 RTP/SCS is designed to support circulation projects that maintain and improve safety and security. The 2018 RTP/SCS is designed to support the increased coordination of all transit services in Tulare County. The 2018 RTP/SCS is designed to promote employer and personal strategies that will encourage the reduction of vehicle miles traveled. This includes encouraging employers to utilize policies such as flex hours and telecommuting, and supporting outreach programs that encourage carpooling/rideshare, transit use, bicycling, walking, and vanpools as alternatives to the single occupant vehicle. The 2018 RTP/SCS plans for and implements coordination of land use and alternative modes of transportation that would reduce vehicle miles traveled by providing residents transportation options in multiple modes. This includes supporting coordinated alternative modes of transportation including transit, pedestrian, bicycle, and rideshare and vanpool programs.
City of Tulare	**Reduce emissions from vehicles**	**Consistent.** The 2018 RTP/SCS is designed to support communities in developing walkable, bikeable, and transit-ready neighborhoods that work in tandem with motor vehicle facilities for a safe and comprehensive local circulation system for people of all levels of income and various availability of resources. The 2018 RTP/SCS is designed to encourage coordinated development to achieve an improved jobs-housing balance in the regional. This includes encouraging mixed-use developments and encouraging provision of an adequate supply of housing for the region and adequate sites to accommodate business expansion to minimize interregional trips and long-distance commuting. The 2018 RTP/SCS plans for and implements coordination of land use and alternative modes of transportation that would reduce vehicle miles traveled by providing residents transportation options in multiple modes. This includes supporting coordinated alternative modes of transportation including transit, pedestrian, bicycle, and rideshare and vanpool programs.

Agency	Strategy	2018 RTP/SCS Consistency

Source: Tulare County, *Climate Action Plan,* February 2010; City of Visalia, *Climate Action Plan,* December 2013; City of Tulare, *Climate Action Plan*, April 2011.

Level of Significance Before Mitigation

SB 375 and AB 32: Less than significant.

SB 32 and EO S-3-05: Significant.

Local CAPs: Less than significant.

Mitigation Measures

Implement **MM-GHG-1(a)** through **MM-GHG-1(c), MM EN-1(a)**, **MM-AIR-1(a)** and **MM-TR-1(a)**.

Level of Significance After Mitigation

Because this PEIR evaluates impacts at the programmatic level, all project circumstances are not foreseeable and these mitigation measures may not be feasible or effective for some projects. Therefore, even with implementation of **Mitigation Measures MM-GHG-1(a)** through **MM-GHG-1(c)**, substantial increases in GHG emissions would remain. Reductions in GHG emissions below the 2017 level and achieving SB 32 and EO S-3-05 goals are not reasonably foreseeable in light of the forecasted increase of 133,127 people in the region by 2042 and available data on existing and future emissions and emission rates. Thus, this impact is considered significant and unavoidable. No additional feasible mitigation measures are available to reduce significant and unavoidable impacts beyond those identified in this PEIR. It should be noted that the State of California, through its 2017 Scoping Plan, has identified many additional GHG reduction strategies that are the responsibility of other sectors/parties to implement; energy sector emission reductions through the renewable portfolio standard, mobile source emission reductions through the low carbon fuel standard and vehicle fleet electrification, and industrial source emission reductions through the cap-and-trade program.

4.6.4 CUMULATIVE EFFECTS

GHG emissions analyses are by nature cumulative analyses as impacts from GHG emissions are global. In its notice of proposed amendments to the *State CEQA Guidelines* pertaining to GHG analysis, the California Natural Resources Agency (CNRA) noted that the impacts of GHG emissions should be

considered in the context of a cumulative impact, rather than a project impact.[67] Because climate change impacts are cumulative in nature, typically a single project like the 2018 RTP/SCS would not result in emissions so large that project-level impacts alone would be significant. A single project's GHG emissions are small relative to total global or statewide GHG emissions. Thus, the assessment of significance above is also based on a determination of whether the GHG emissions from the 2018 RTP/SCS represent a cumulatively considerable contribution to GHG impacts.

67 http://resources.ca.gov/ceqa/docs/Notice_of_Proposed_Action.pdf, accessed April 16, 2008.

4.7 LAND USE AND PLANNING

This section addresses the current land uses in Tulare County and evaluates the impacts of the 2018 RTP/SCS on land use, identifies regional-scale mitigation measures as well as mitigation measures for site-specific project-level environmental review documents, and evaluates the residual impacts.

4.7.1 ENVIRONMENTAL SETTING

4.7.1.1 Regional Setting

Centrally located within the State of California, Tulare County contains approximately 4,863 square miles. It extends north of Kern County, east of Kings County, west of Inyo County, and south of Fresno County. Open space and tribal lands, which includes wilderness, national forests, monuments and parks, and county parks, encompasses 2,412 square miles, or approximately 50 percent of the County. Much of this area is the public lands located in the eastern half of the County within the Sequoia National Park, National Forest, and the Mineral King, Golden Trout, and Domelands Wilderness areas. Agricultural uses total over 2,150 square miles or about 44 percent of the entire county. Incorporated cities in Tulare County capture less than three percent of the entire County.[1]

Significant variations in terrain, climate, geography, and environment are evident in Tulare County and can be divided into three distinct regions: valley, foothill, and mountain (see further discussion below). The area's density is low compared to the state average, with approximately 91.7 persons per square mile, compared to California as a whole, with 239.1 persons per square mile.[2] The County is comprised predominately of natural resource land, open space, and productive farmland, however typical urban uses (including residential, commercial/office, industrial, and institutional) are found within the cities as well as some of the unincorporated areas of the County.

The following eight incorporated cities are located in Tulare County: Dinuba, Exeter, Farmersville, Lindsay, Porterville, Tulare, Visalia and Woodlake. The unincorporated communities of Tulare County are: Alpaugh, Cutler/Orosi, Ducor, Earlimart, East Orosi Goshen, Ivanhoe, Lemon Cove, London, Pixley, Plainview, Poplar/Cotton Center, Richgrove, Springville, Strathmore, Sultana, Terra Bella, Three Rivers, Tipton, Traver, and Woodville.

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1 Tulare County. 2012. *Tulare County General Plan Update RDEIR and* Tulare County Association of Governments. 2018.

2 US Census Bureau. 2010. *Tulare County, California Quick Facts.* Available at: https://www.census.gov/quickfacts/fact/table/CA%2Ctularec?, accessed 2018.

The City of Visalia is the largest city within Tulare County with an estimated population of 128,738 in 2017 accounting for approximately 28 percent of all residents in Tulare County. The City of Tulare is the second largest city with an estimated population (in 2017) of 61,664 followed by Porterville with 58,472 residents. The smallest city is Woodlake with a population of 7,567. As of 2017, the population of Tulare County was 471,842 people. [3]

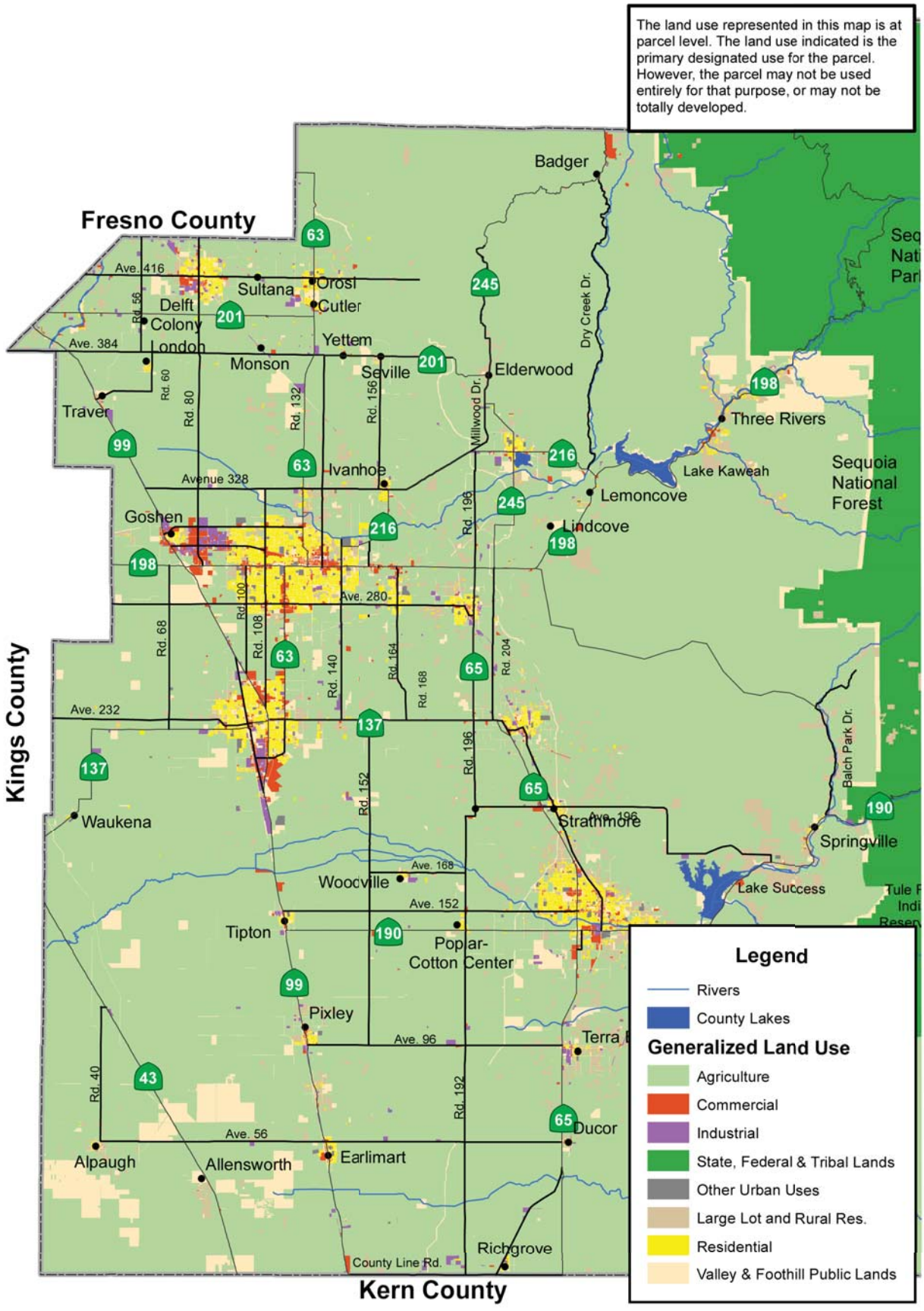
Figure 3.0-1 (**Chapter 3.0, Project Description**) shows the locations of the cities, unincorporated areas, and transportation routes in the County. **Figure 4.7-1, Tulare County Land Uses,** shows the existing General Plan land use designations and **Table 4.7-1, 2017 Tulare County Land Uses,** summarizes the approximate percentages of each existing land use type. Each land use type is discussed in further detail below.

Table 4.7-1
2017 Tulare County Land Uses

Land Use	Parcels	Acres	Percentage (%)
Agriculture	81,110	1,351,700	43.64
Commercial	7,556	10,813	0.35
Industrial	1,997	7,760	0.25
State, Federal & Tribal	45,061	1,543,684	49.84
Other Urban Uses	671	3,727	0.12
Large Lot and Rural Residential	29,817	70,278	2.27
Residential	102,131	24,136	0.78
Valley & Foothill Public Lands	13,068	85,394	2.76
Total	281,411	3,097,492	100

Source: Tulare County Association of Governments. 2018.

3 TCAG 2018 and Department of Finance (DOF).



SOURCE: Tulare County Association of Governments, 2018

FIGURE **4.7-1**

IMPACT SCIENCES

Tulare County Land Uses

4.7.1.2 Tulare County Regions

Tulare Valley Region

The Tulare Valley Region, also known as the southern San Joaquin Valley area, includes a majority of the urbanized areas in the County including the cities of Visalia, Porterville, and Tulare. This area also includes unincorporated County areas that contain a mix of urbanized and agricultural use. The Valley Region is the geographical area generally below the 600-foot elevation contour line and lies on the western portion of the County.

Foothill Region

The Foothill Region corresponds to the central portion of the County. The unincorporated community of Three Rivers and the Tule River Reservation lie within the foothills of Tulare County. This region is comprised of geographical areas generally above the 600-foot elevation line, and is bounded on the east by the federally-owned parks in the Sierra Nevada Mountains.

Mountain Region

The Mountain Region corresponds to the eastern-most portion of the County. The region is comprised of mountain ranges including the Sierra Nevada Mountains. This geographical area includes all lands located east of the Foothill Region, the eastern boundary of which generally coincides with the western boundary of federal lands. This area primarily, but not exclusively, includes the Sequoia National Park and Forest.

4.7.1.3 Existing Land Use

Residential

Tulare County is predominantly rural, and settlement patterns reflect this fact. Approximately 30 percent of the county's population of 471,842 lives in the County's 21 unincorporated communities. Recent trends have led to housing, jobs, shopping, and recreational opportunities developing in separate locations. As a result of the separated development of jobs and housing, the urban area has grown in a way that forces people to travel from one area to another. The relatively large distances between the County's population centers require well-maintained rural highways, many of which are the focus of RTP/SCS projects. There has also been a trend for warehouses and large distribution centers developing in this area due to the high costs of conducting business in larger metropolitan areas, land availability and reduced land cost, and the central location of Tulare County between the Los Angeles and Bay Area metropolitan areas.

Agricultural Resource Areas (Farmland)

Tulare County's top ten agricultural products in 2016, listed in descending order by revenue, include milk, Navel and Valencia oranges, cattle and calves, grapes, tangerines, pistachio nuts, almonds, corn, walnuts, and lemons.[4] The leading agricultural commodity, milk, represented 25.8% of Tulare County's total gross production value of $6.3 billion in 2016. Much of the County's transportation system traverses the rich agricultural soils of the Central Valley.

Residential rural areas are areas zoned for residential use but are less densely populated than cities or other urban areas. They are often located in agricultural or farming areas and comprise about 21,753 acres in Tulare County, including semi-agricultural uses, such as warehousing and packaging facilities, adding approximately 6,197 acres. These uses have decreased about 0.3 percent since 2014, with over 2,000 acres converted to non-rural uses. Farmland, as defined by California Code Section 65080.01(b), is classified as prime, of statewide importance, or otherwise unique in character outside all existing city spheres of influence or city limits. These lands comprise approximately 858,119 acres. Additionally, Tulare has 439,934 acres of designated grazing land. From these lands, Tulare County's agricultural revenues topped $6 billion in 2016.[5] See **Section 4.2, Agricultural Resources**, for additional discussion on agricultural lands in Tulare County.

Transportation Infrastructure

Highways

The region's major transportation routes are: SR 65, SR 99, SR 137, SR 190, and SR 198. Incorporated cities along these routes are Exeter, Lindsay, and Porterville on SR 65; Tulare on SR 99 and SR 137; Porterville on SR 190; and Visalia on SR 198. Unincorporated areas include Ducor, Strathmore, and Terra BellaBella on SR 65; Earlimart, Pixley, Tipton, Goshen, and Traver on SR 99; Poplar/Cotton Center and Springville on SR 190; and Lemon Cove and Three Rivers along SR 198.

Unlike other forms of agriculture, dairies harvest and transport their product every day of the year. Dairy trucks also have higher weight loads compared to other trucks. This causes significant degradation of roads used by the dairy industry.

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4 Tulare County. 2016. *Tulare County Agricultural Crop and Livestock Report.*

5 California Department of Conservation (DOC). *Farmland Mapping and Monitoring Program 2014-2016.*

Rail

Three major rail companies, Union Pacific (UP), Burlington Northern and Santa Fe (BNSF), and San Joaquin Valley Railroad (SJVRR) serve Tulare County. In Tulare County, all public mass transportation is provided by fixed route buses and dial-a-ride services. Tulare County is not directly serviced by passenger rail facilities, although Hanford's Amtrak station is accessible by bus. Furthermore, inter-agency transfer points are becoming part of Tulare County's overall circulation system, in an effort to coordinate transit systems between adjacent agencies. TCAG is leading the development of the first-ever Tulare County Regional Long Range Transit Plan (LRTP), *Destination 2040*. The LRTP is the first countywide planning effort focused just on long-range transit. The LRTP provides a roadmap for implementing local and regional transit improvements and innovations across Tulare County. The overarching purpose of the LRTP is to improve regional mobility, connectivity, and coordination. The LRTP also serves as a reference for the transit component for the RTP/SCS.

Transit

In 2013, public transit services carried over 3 million passengers in Tulare County.[6] The County of Tulare operates the Tulare County Area Transit (TCaT) system, which includes four intercity fixed routes, five local circulator routes, and four dial-a-ride service areas.[7] TCaT is the primary provider of intercity service in Tulare County. Although TCaT provides most inter-city services within the County, there are instances of jointly operated intercity routes (e.g., Route 11x between Tulare and Visalia) and transfer points between non-regional transit agencies.

Greyhound

Greyhound bus serves stations in Tulare, Goshen, Visalia, and Delano. Service includes daily trips to Fresno, Bakersfield, and Hanford. Stop locations in Tulare County include Visalia, Ducor, Farmersville, Exeter, Lindsay, Strathmore, Porterville, Terra Bella, and Goshen, via the Bakersfield-Hanford Route; and Delano, Tulare, Goshen (select trips), and Visalia via the Bakersfield-Fresno route.

Amtrak

Amtrak coordinates with Visalia Transit to provide a feeder bus linking the Visalia Transit Center with Hanford Station in Kings County with two trips a day on weekdays. Scheduled travel time ranges from 25-35 minutes.

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6 Tulare County Association of Governments. 2017. *Tulare County Long Range Transit Plan.* September.

7 Ibid.

Oil and Gas Resources

Tulare County has seen production of oil and gas resources decline over the years, as demand has decreased Statewide. According to a study conducted by the California Department of Conservation in 2016, Tulare County has a total of 56 active oil wells producing a total of 32,274 barrels per year.[8] There are no active gas wells in the County. The areas where oil resources exist are in Deer Creek and North Deer Creek.

Correctional Facilities

There are four detention facilities within Tulare County under the County Sheriff's Department. These facilities are the Bob Wiley Detention Facility, the Men's Correctional Facility, the Main Jail, and the Pre-Trial Facility.

4.7.2 REGULATORY FRAMEWORK

4.7.2.1 State

General Plans and Land Use Regulations

The legal framework in which California cities and counties exercise local planning and land use functions is provided in the California Planning and Zoning Law (California Code section 65000 *et seq.*) Under state planning law, each city and county is required to adopt a general plan "for the physical development of the county or city, and any land outside its boundaries which bears relation to its planning" (California Code section 65300 *et seq.*).

The general plan expresses the community's development goals and embodies public policy relative to the distribution of future land uses, both public and private. A general plan consists of a number of elements, including land use, circulation, housing, conservation, open space, noise, and safety; other elements may be included at the discretion of the jurisdiction that relate to the physical development of the county or city. The general plan must be comprehensive and internally consistent. Of particular importance is the consistency between the circulation and land use elements; the general location and extent of existing and proposed major thoroughfares, transportation routes, terminals, and other public utilities and facilities must be consistent with the general distribution and intensity of land used for

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8 California Department of Conservation, Division of Oil, Gas, and Geothermal Resources. 2016. *Well Count and Production of Oil, Gas, and Water by County.* Available at: ftp://ftp.consrv.ca.gov/pub/oil/annual_reports/2016/Wells_and_Production_by_County_2016.pdf, accessed: March 2018.

housing, business, industry, open space, education, public areas, waste disposal facilities, agriculture, and other public and private uses.

In addition, every local jurisdiction within the region has land use regulations that implement the general plan. The zoning ordinance is the primary land use regulation used to implement the goals and policies of its general plan. Zoning ordinances, which are required to be consistent with the general plan, provide detailed direction related to development standards; permitted, conditionally permitted, and prohibited uses; and other regulations such as parking standards and sign regulations.

Local jurisdictions may also adopt specific plans, which are used to implement the general plan in particular geographic areas (California Code section 65450). Zoning ordinances and land use approvals must be consistent with applicable specific plans as well as the general plan.

Cities and counties are also required to comply with the Subdivision Map Act (California Code section 66410 *et seq*.). The Subdivision Map Act sets forth the conditions for approval of a subdivision map and requires enactment of subdivision ordinances by which local governments have direct control over the types of subdivision projects to be approved and the physical improvements to be installed.

California Department of Transportation (Caltrans)

Caltrans' jurisdiction includes the rights-of-way associated with state and interstate routes within California. Any work performed within a federal or state transportation corridor is subject to Caltrans regulations governing allowable actions and modifications to the right-of-way. Caltrans issues encroachment permits on land within their jurisdiction to ensure encroachment is compatible with the primary uses of the State Highway System, to ensure safety, and to protect the state's investment in the highway facility. The encroachment permit requirement applies to persons, corporations, cities, counties, utilities, and other government agencies.

California Department of Parks and Recreation

The principal mission of the California Department of Parks and Recreation (CDPR) is to provide sites for a variety of recreational and outdoor activities to California residents and tourists. Natural resource management and protection is also a part of the mission of CDPR. Different park designations dictate the extent to which natural resources are a management priority; natural preserves, state parks, state reserves, and state wilderness designations are all terms which indicate that an area has outstanding natural features. The California Department of Parks and Recreation is a trustee agency that owns and operates all state parks and participates in land use planning affecting state parkland.

Senate Bill 375

SB 375, signed in September 2008 (Chapter 728, Statutes of 2008), aligns regional transportation planning efforts, regional greenhouse gas (GHG) reduction targets, and land use and housing allocation. SB 375 requires metropolitan planning organizations (MPOs) to adopt a sustainable communities strategy (SCS) or alternative planning strategy (APS) that will prescribe land use allocation in that MPOs regional transportation plan.

This law also extends the minimum period for the regional housing needs allocation (RHNA) cycle from five years to eight years for local governments located within an MPO that meets certain requirements. This change allows for coordination between housing needs and planning and transportation planning within the region. Local authorities can maintain their control over land use decisions, which are not required to be consistent with the regional transportation plan (and associated SCS or APS). However, with a more synchronized timeline for housing and transportation, decisions regarding the two will be a collaborative effort that maximizes the efficiency and benefits of land use (see Chapter 1).

Senate Bill 743

On September 27, 2013, Governor Brown signed Senate Bill (SB) 743. To further the state's commitment to the goals of SB 375 and AB 32, SB 743 adds Chapter 2.7, *Modernization of Transportation Analysis for Transit-Oriented Infill Projects*, to Division 13 (Section 21099) of the Public Resources Code. Key provisions of SB 743 include reforming aesthetics and parking CEQA analyses for urban infill projects and eliminating the measurement of auto delay, including Level of Service (LOS), as a metric that can be used for measuring traffic impacts in transit priority areas. SB 743 provides that, "aesthetics and parking impacts of a residential, mixed-use residential, or employment center project on an infill site within a transit priority area shall not be considered significant impacts on the environment." This means that, effective January 1, 2014, aesthetics and parking will no longer be considered in determining if a project has the potential to result in significant environmental effects provided a project meets all of the following three criteria:

a) The project is in a transit priority area; and

b) The project is on an infill site; and

c) The project is residential, mixed-use residential, or an employment center

4.7.2.2 Local

Tulare County Local Agency Formation Commission

Under state law, each county must have a local agency formation commission (LAFCO). A LAFCO is the agency that carries responsibility for creating orderly local government boundaries, with the goal of encouraging "planned, well-ordered, efficient urban development patterns," the preservation of open space lands, and the discouragement of urban sprawl. The Tulare County LAFCO is composed of two county supervisors, two representatives of the county's cities, and one member of the public. While LAFCOs have no land use power, their actions determine which local government will be responsible for planning and serving new areas.

LAFCOs address a wide range of boundary actions, including creation of spheres of influence for cities, adjustments to boundaries of special districts, annexations, incorporations, detachments of areas from cities, and dissolutions of cities. The definition of a city's sphere of influence is frequently an indication of the city's ultimate boundaries. Since 1992, state law requires that incorporation of a new city must not financially harm the county and must result in a positive cash flow for the new city, a requirement that has slowed the rate of new city incorporation.

While planning documents of each of the cities in Tulare County is relevant to the RTP, this Program EIR primarily addresses the two largest jurisdictions (Tulare County and the city of Visalia) as that is where the majority of projects, growth, and their associated impacts would occur.

Tulare County General Plan

The General Plan is a coordinated policy document with planned land use maps and related information that are designed to give long-range guidance to those County officials making decisions affecting the growth and resources of the unincorporated Tulare County jurisdiction.[9] The Plan helps to ensure that day-to-day decisions are in conformance with the long-range program designed to protect and further the public interest related to Tulare County's growth and development. The General Plan also serves as a guide to the private sector of the economy in relating its development initiatives to the public plans, objectives, and policies of the County.

The Tulare County Board of Supervisors adopted the 2030 General Plan Update in August 2012, with more recent updates to specific chapters. Its main purpose remains to provide focused goals, policies, and maps to guide development within the unincorporated portions of Tulare County.

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9 Tulare County Association of Governments. 2010. *Tulare County General Plan 2030 Update.* February.

The Land Use Element of the General Plan is the County's long-term blueprint for development of property to meet the County's future need for new housing, retail, office, industrial, parks, open-space, and other uses. The Land Use Element contains a Land Use Map, and goals, policies, and programs designed to address the development issues facing the community through a variety of land use planning policies. The element provides for a variety of land uses for future economic growth while also assuring the conservation of Tulare County's agricultural, natural, and resource attributes. Specifically the Land Use Element includes the following:

Goals:

- **LU-1:** To encourage the overall economic and social growth of the County while maintaining its quality of life standards and highly efficient land use.
- **LU-2:** To provide for the long-term conservation of productive and natural resource lands including agricultural, foothill, mountain, and riparian areas and to accommodate services and related activities that support the continued visibility and conservation of resource lands.
- **LU-3:** To provide adequate land in a range of residential densities to accommodate the housing needs of all income groups expected to reside in the County, and ensure a high quality of development.
- **LU-4:** To maintain economic vitality and promote the development of commercial uses that are compatible with surrounding land uses and meet the present and future needs of County residents, the regional community, and visitors.
- **LU-5:** To designate adequate land for, and promote development of, industrial uses to meet the present and future needs of County residents for jobs and to maintain economic vitality.
- **LU-6:** To provide for the development of public and institutional uses that support surrounding land uses and meet the present and future needs of County residents, the regional community, and visitors.
- **LU-7:** To preserve and enhance the character and scale of Tulare County's communities, hamlets, and rural areas, including their design heritage and historic character.

As the TCAG RTP aims to create a denser and more transit oriented planning areas, the land use element of the Tulare County General Plan will serve as one of the primary planning components that implements the RTP/SCS policies. The following policies are relevant to the 2018 RTP/SCS:

- **LU-1.1 Smart Growth and Healthy Communities:** The County shall promote the principles of smart growth and healthy communities in UDBs and HDBs,[10,11] including:

10 Urban Development Boundary (UDB) is a recognized County line that encompasses an urbanized area, outside of which new urban development is largely restricted or prohibited.

1. Creating walkable neighborhoods;
2. Providing a mix of residential densities;
3. Creating a strong sense of place;
4. Mixing land uses;
5. Directing growth toward existing communities;
6. Building compactly;
7. Discouraging sprawl;
8. Encouraging infill;
9. Preserving open space;
10. Creating a range of housing opportunities and choices;
11. Utilizing planned community zoning to provide for the orderly pre-planning and long term development of large tracks of land which may contain a variety of land uses, but are under unified ownership or development control; and
12. Encouraging connectivity between new and existing development.

- **LU-1.2 Innovative Development:** The County shall promote flexibility and innovation through the use of planned unit developments, development agreements, specific plans, Mixed Use projects, and other innovative development and planning techniques.
- **LU-1.4 Compact Development:** The County shall actively support the development of compact mixed use projects that reduce travel distances.
- **LU-1.8 Encourage Infill Development:** The County shall encourage and provide incentives for infill development to occur in communities and hamlets within or adjacent to existing development in order to maximize the use of land within existing urban areas, minimize the conversion of existing agricultural land, and minimize environmental concerns associated with new development.
- **LU-1.10 Roadway Access:** The County shall require access to public roadways for all new development.
- **LU-3.1 Residential Developments:** The County shall encourage new major residential development to locate near existing infrastructure for employment centers, services, and recreation.
- **LU-3.2 Cluster Development:** The County shall encourage proposed residential development to be clustered onto portions of the site that are more suitable to accommodating the development, and

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11 Hamlet Development Boundary (HDB) is a recognized County line that encompasses lands suitable for development and separates it from unsuitable land, such as agricultural, natural, or rural lands.

shall require access either directly onto a public road or via a privately-maintained road designed to meet County road standards.

- **LU-3.3 High-Density Residential Locations:** The County shall encourage high-density residential development (greater than 14 dwelling units per gross acre) to locate along collector roadways and transit routes, and near public facilities (e.g., schools and parks), shopping, recreation, and entertainment.

- **LU-4.1 Neighborhood Commercial Uses:** The County shall encourage the development of small neighborhood convenience and grocery facilities to meet the everyday shopping and personal needs of immediately surrounding residential land uses in communities and hamlets.

- **LU-4.4 Travel-Oriented Tourist Commercial Uses:** The County shall require travel-oriented tourist commercial uses (for example, entertainment, commercial recreation, lodging, fuel) to be used in areas where traffic patterns are oriented to major arterials and highways. Exceptions may be granted for resort or retreat related developments that are sited based on unique natural features.

- **LU-6.1 Public Activity Centers:** The County shall encourage the development of centrally located public activity centers that include parks, schools, libraries, and community centers in communities via accessible, multiple modes of travel.

- **LU-6.3 Schools in Neighborhoods:** The County shall encourage school districts to locate new schools in areas that allow students to safely walk or bike from their homes.

- **LU-7.3 Friendly Streets:** The County shall encourage new streets within UDBs to be designed and constructed to not only accommodate traffic, but also serve as comfortable pedestrian and cyclist environments. These should include, but not be limited to:

    1. Street tree planting adjacent to curbs and between the street and sidewalk to provide a buffer between pedestrians and automobiles, where appropriate,

    2. Minimize curb cuts along streets,

    3. Sidewalks on both sides of streets, where feasible,

    4. Bike lanes and walking paths, where feasible on collectors and arterials, and

    5. Traffic calming devices such as roundabouts, bulb-outs at intersections, traffic tables, and other comparable techniques.

Tulare County Zoning Ordinance

The Zoning Ordinance serves as the primary implementation tool for the General Plan Land Use Element and the goals, objectives, and policies contained within the element. The Zoning map is consistent with the General Plan's Land Use Map, and the land use designations contained in the Land Use Element and the areas designated for each category correspond to one or more zoning districts.

Habitat Conservation Plans/Natural Community Conservation Plans[12]

There are two Habitat Conservation Plans (HCPs) within or influencing portions of the local land use policies within Tulare County. The HCPs include the Kern Water Bank HCP/NCCP located in portions of Kern, Tulare, and Kings County and the PG&E San Joaquin Valley Operations & Maintenance HCP located in portions Tulare and other counties within California's Central Valley.[13] Further discussion of Habitat Conservation Plans and Natural Community Conservation Plans can be found in **Section 4.4, Biological Resources,** of the Draft EIR.

City of Visalia General Plan

The Visalia General Plan[14] is designed to give long-range guidance to the City and other agencies making decisions affecting the growth and resources within the City's jurisdiction. The City of Visalia is the largest city by population within Tulare County. As the TCAG RTP/SCS aims to create denser and more transit-oriented planning areas, the land use element of the City of Visalia's General Plan will serve as one of the primary planning components that can be used to implement the RTP/SCS policies. Policies relevant to the 2018 RTP/SCS include:

Land Use Framework:

- **LU-P-19:** Ensure that growth occurs in a compact and concentric fashion by implementing the General Plan's phased growth strategy.
- **LU-P-28:** Continue to use natural and man-made edges, such as major roadways and waterways within the City's Urban Growth Boundary, as urban development limit and growth phasing lines.
- **LU-P-30:** Maintain greenbelts, or agricultural/open space buffer areas, between Visalia and other communities by implementing growth boundaries and working with Tulare County and land developers to prevent premature urban growth north of the St. Johns River and in other sensitive locations within the timeframe of this General Plan.

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12 See Biological Resources section for definitions of these terms.

13 U.S. Fish & Wildlife Service. *Environmental Conservation Online System (ECOS) Habitat Conservation Plans*. Available at: https://ecos.fws.gov/ecp0/conservationPlan/region/summary?region=8&type=HCP, accessed: March 2018.

14 City of Visalia. 2014. *General Plan Update*. October.

- **LU-P-31:** Promote the preservation of permanent agricultural open space around the City by protecting viable agricultural operations and land within the City limits in the airport and wastewater treatment plan environs.

4.7.3 ENVIRONMENTAL IMPACTS

4.7.3.1 Thresholds of Significance

For the purposes of this PEIR, TCAG has determined that implementation of the proposed 2018 RTP/SCS would result in significant impacts to the land use, if any of the following could occur:

- Conflict with any applicable land use plan, policy, or regulation of an agency with jurisdiction over the project (including, but not limited to, the general plan, specific plan, or zoning ordinance) adopted for the purpose of avoiding or mitigating an environmental effect.
- Physically divide an established community.
- Conflict with any applicable HCP or NCCP (see **Section 4.4, Biological Resources**).

4.7.3.2 Methodology

The analysis assesses the land use impacts that could result from implementation of the proposed 2018 RTP/SCS. Impacts are assessed for both land use and transportation projects. By 2042, implementation of the proposed 2018 RTP/SCS would result in a land use pattern and transportation network that is different from existing conditions.

Determination of Significance

The methodology for determining the significance of land use impacts compares the existing conditions to future (2042) conditions, as required in CEQA Section 15126.2(a).

The following analysis is based on general descriptions of projects in the Plan and location of transportation planning areas (TPAs) (see **Section 3.0, Project Description**) and is regional and programmatic in nature.

4.7.3.3 Impacts and Mitigation Measures

Each applicable threshold of significance is listed below, followed by analysis of the significance of any impacts and the identification of mitigation measures that would avoid or substantially lessen impacts. Finally, the significance of impacts after implementation of all identified mitigation measures is presented.

Impact LU-1 **Conflict with any applicable land use plan, policy, or regulation of an agency with jurisdiction over the project (including, but not limited to, the general plan, specific plan, local coastal program, or zoning ordinance) adopted for the purpose of avoiding or mitigating an environmental effect.**

TCAG has developed a land use pattern as part of the SCS portion of the 2018 RTP. The SCS demonstrates Tulare County's ability to attain GHG emission reduction targets set forth by CARB.

The 2018 RTP/SCS was built primarily from assumptions derived from local General Plans and input from local governments, and local transportation agencies. As a result of this comprehensive and integrated approach, the transportation projects and land use strategies included in the 2018 RTP/SCS are generally consistent with the County and local level general plan data available to TCAG. However, general plans are updated on an inconsistent basis, except for the Housing Element, which is updated every 8 years. Some of the general plans that TCAG relied on when creating the 2018 RTP/SCS are not current and may not reflect current planning policy or practice. In addition, the RTP/SCS's 2042 horizon year is beyond the timeline of other general plans in the region For example, the City of Visalia and the County of Tulare both have General Plans with a horizon year of 2030. This PEIR has not identified specific plans, policies, or regulations (adopted for the purpose of avoiding or mitigating environmental effects) with which the 2018 RTP/SCS would conflict. In addition, such a conflict is generally not expected as the 2018 RTP/SCS was developed based on input from local jurisdictions and projects are required to comply with applicable plans and policies. However, because of the differing time horizons there remains the possibility that a conflict could arise, and potential conflicts with plans, polices, or regulations that have been adopted for the purpose of avoiding or mitigating environmental effects are therefore considered a significant impact.

As discussed above under Methodology, TCAG has no land use authority to adopt local land use plans or approve local land use projects that would implement the SCS. **Mitigation Measure MM-LU-1(a)** would reduce land use impacts related to conflicts with plans, polices, or regulations adopted for the purpose of avoiding or mitigating environmental effects.

Level of Significance Before Mitigation

Significant.

MM-LU-1(a): Consistent with the provisions of Section 15091 of the *State CEQA Guidelines*, TCAG has identified mitigation measures capable of avoiding or reducing the significant effects regarding the potential to conflict with any applicable land use plan, policy, or regulation (adopted for the purpose of avoiding or mitigating environmental effects) of an agency

with jurisdiction over the project that are within the jurisdiction and responsibility of local agencies (land use projects) and implementing agencies (transportation projects) . Where the Lead Agency has identified that a project has the potential for significant effects, the Lead Agency can and should consider mitigation measures to avoid conflicts with, land use plans, policies, or regulations of an agency with jurisdiction over the project. Such measures include, but are not limited to, the following:

- Modify the transportation or land use project to eliminate the conflict; or if an inconsistency with an adopted general plan policy or land use regulations (adopted for the purpose of avoiding or mitigating environmental effects) is identified, determine if the environmental, social, economic, and engineering benefits of the project or other factors warrant an amendment to the general plan or land use regulations.

Level of Significance After Mitigation

Because this PEIR evaluates impacts at the programmatic level, all project circumstances are not foreseeable and these mitigation measures may not be feasible or effective for some projects. Therefore, even with implementation of **Mitigation Measure MM-LU-1(a)** impacts would remain significant and unavoidable. No additional feasible mitigation measures are available to reduce significant and unavoidable impacts beyond those identified in this PEIR.

Impact LU-2 Physically divide an established community.

The 2018 RTP/SCS includes completion of major highway projects, reductions in travel delay by adding lanes to highways and arterials in areas such as Dinuba (Road 72), Porterville (Worth Ave), and Tulare (Blackstone Drive, Commercial Ave), and others, and creation of complete streets such that vehicles and non-motorized transit can both use the streets simultaneously. Construction and implementation of new transportation facilities or expansion of existing facilities could disrupt or divide established communities.

Long-term impacts could result from the completion of new or expanded roadways or transit facilities in existing communities. For example, the widening of a roadway could be perceived as too great a distance to cross by a pedestrian, thereby dividing a community. An elevated grade crossing may create a physical barrier in some locations. Impacts would most likely occur in urbanized or urbanizing parts of the region. New transit facilities are often planned in areas that have existing communities, but generally create a community benefit by connecting communities, and providing a new mode of travel or relieving overcrowding on an existing mode of travel.

New roadways and/or the addition of new lanes to existing freeways and roadways have the potential to divide communities. Roadways as well as overcrossings and under-crossings associated with new or widened roadways or freeways can create a real or perceived barrier to pedestrians, bicyclists, and motorists. New freeway or roadway segments that occur in rural areas would have the least potential to divide established communities. Rural areas do not typically have the same degree of established communities as urban areas; however, the potential for impacts still exists.

TCAG used GIS data to analyze the change in land use that would occur with the Plan. As shown in **Table 4.7-2, Existing (2017) and Plan (2042) Land Use**, commercial, industrial, and residential land uses would all increase while agriculture would decrease. The forecasted land use pattern is shown in **Figure 4.7-2, Proposed Plan Land Use**. As shown in this figure, most of the development would occur in areas that are generally developed. However, it is possible, that certain developments (residential, commercial, or industrial) could result in division of an established community either through roadway construction or new infrastructure that creates a barrier.

Table 4.7-2
Existing (2017) and Plan (2042) Land Use

Land Use	Existing (Acres)	2042 Plan (Acres)	Percent Change
Agriculture	1,351,700	1,343,352	-0.6%
Commercial	10,813	11,958	9.6%
Industrial	7,760	8,480	8.5%
State, Federal & Tribal	1,543,684	1,543,684	0.0%
Other Urban Uses	3,727	3,727	0.0%
Large Lot and Rural Residential	70,278	70,759	0.7%
Residential	24,136	30,674	21.3%
Valley and Foothill Public Lands	85,394	84,858	-0.6%

Source: Tulare County Association of Governments, 2018

Level of Significance Before Mitigation

Significant.

Mitigation Measures

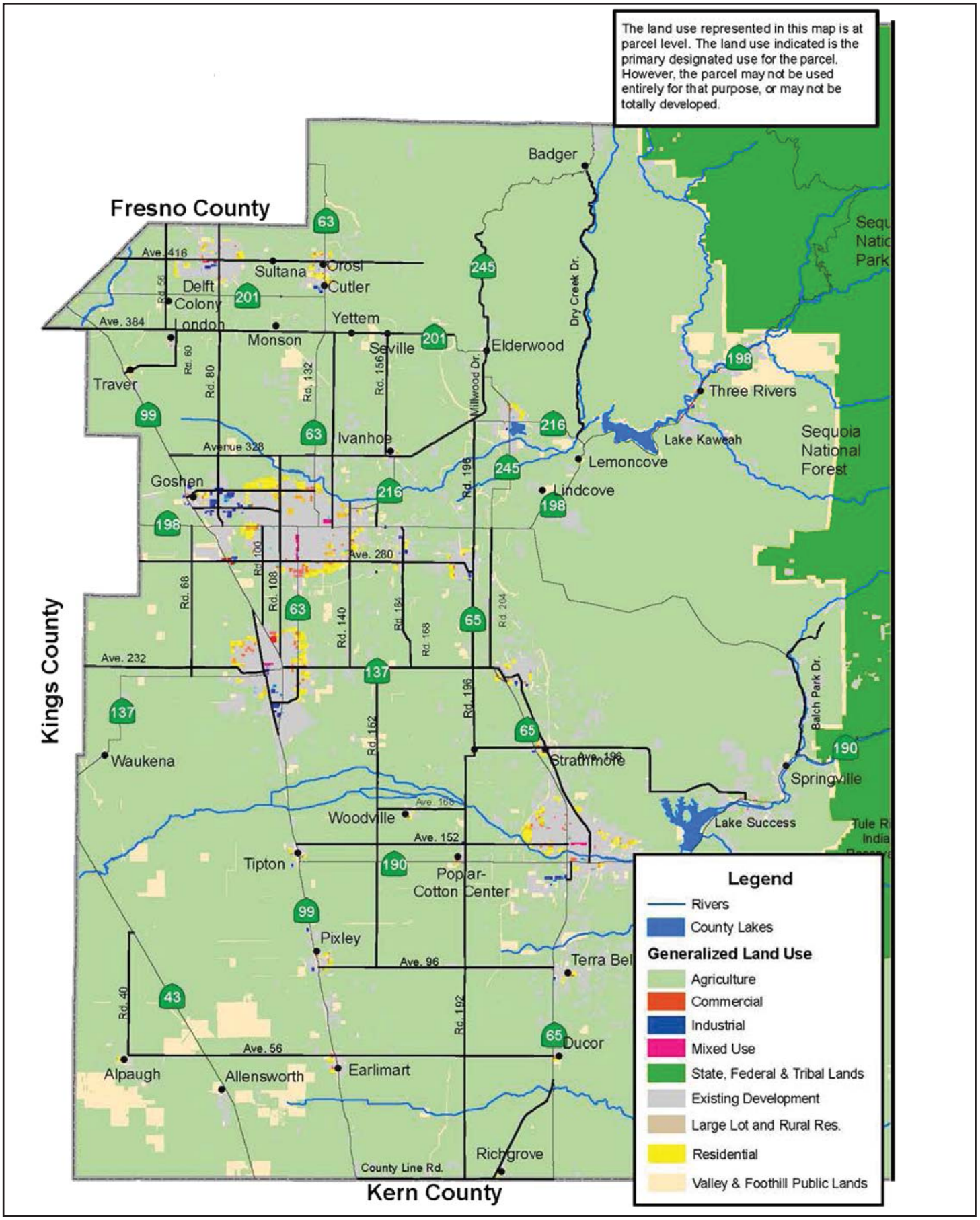
Implement **Mitigation Measure MM-LU-1(a)**.

MM-LU-2(a) Consistent with the provisions of Section 15091 of the State CEQA Guidelines, TCAG has identified mitigation measures capable of avoiding or reducing the significant effects related to the physical division of an established community in a project area within the jurisdiction and responsibility of local jurisdictions and Lead Agencies. Where the Lead Agency has identified that a project has the potential for significant effects, the Lead Agency can and should consider mitigation measures to ensure compliance with the goals and policies established within the applicable adopted county and city general plans to avoid the creation of barriers that physically divide such communities, as applicable and feasible. Such measures may include the following, or other comparable measures identified by the Lead Agency:

- Local jurisdictions can and should facilitate good design for land use projects that builds upon and improves existing circulation patterns.

- Local jurisdictions can and should encourage implementing agencies to orient transportation projects to minimize impacts on existing communities by:

    - Selecting alignments within or adjacent to existing public right-of-ways.
    - Designing sections above- or below-grade to avoid physical division of communities.
    - Providing for direct crossings, overcrossings, or undercrossings at regular intervals for various modes of travel (e.g. active transport).



SOURCE: Tulare County Association of Governments, 2018

FIGURE **4.7-2**

Proposed Plan Land Use (2042)

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Level of Significance After Mitigation

Because this PEIR evaluates impacts at the programmatic level, all project circumstances are not foreseeable and these mitigation measures may not be feasible or effective for some projects. Therefore, even with implementation of **Mitigation Measures MM-LU-1(a)** and **MM-LU-2(a),** impacts remain significant and unavoidable. No additional feasible mitigation measures are available to reduce significant and unavoidable impacts beyond those identified in this PEIR.

Impact LU-3 **Conflict with any applicable habitat conservation plan or natural community conservation plan.**

Refer to **Section 4.4, Biological Resources** and **Impact BIO-6** for the discussion regarding potential conflicts with habitat conservation plans and NCCPs.

4.7.4 CUMULATIVE EFFECTS

Implementation of the 2018 RTP/SCS would result in an increase in density and land use development over the next 24 years. By 2042, the region would add an additional 133,127 people with or without the 2018 RTP/SCS. The improved accessibility from the 2018 RTP/SCS could help facilitate urbanization to areas outside the region. Changes in the land use patterns in the region (for example, increased urbanization) could affect areas outside the region, resulting in increased urbanization in other areas as well, and would add to land use impacts of cumulative projects (the RTP/SCS plans of adjacent jurisdictions). Land use impacts (potential for conflicts with plans adopted for the purpose of avoiding or mitigating environmental impacts, and physical division of communities) of the 2018 RTP/SCS would be significant, and would add to similar impacts of other jurisdictions. Cumulative land use impacts would be significant, and the 2018 RTP/SCS contribution would be cumulatively considerable.

Implementation of **Mitigation Measures MM-LU-1(a)** and **MM-LU-2(a)** would reduce land use impacts associated with the 2018 RTP/SCS; however impacts would remain cumulatively considerable.

4.8 NOISE

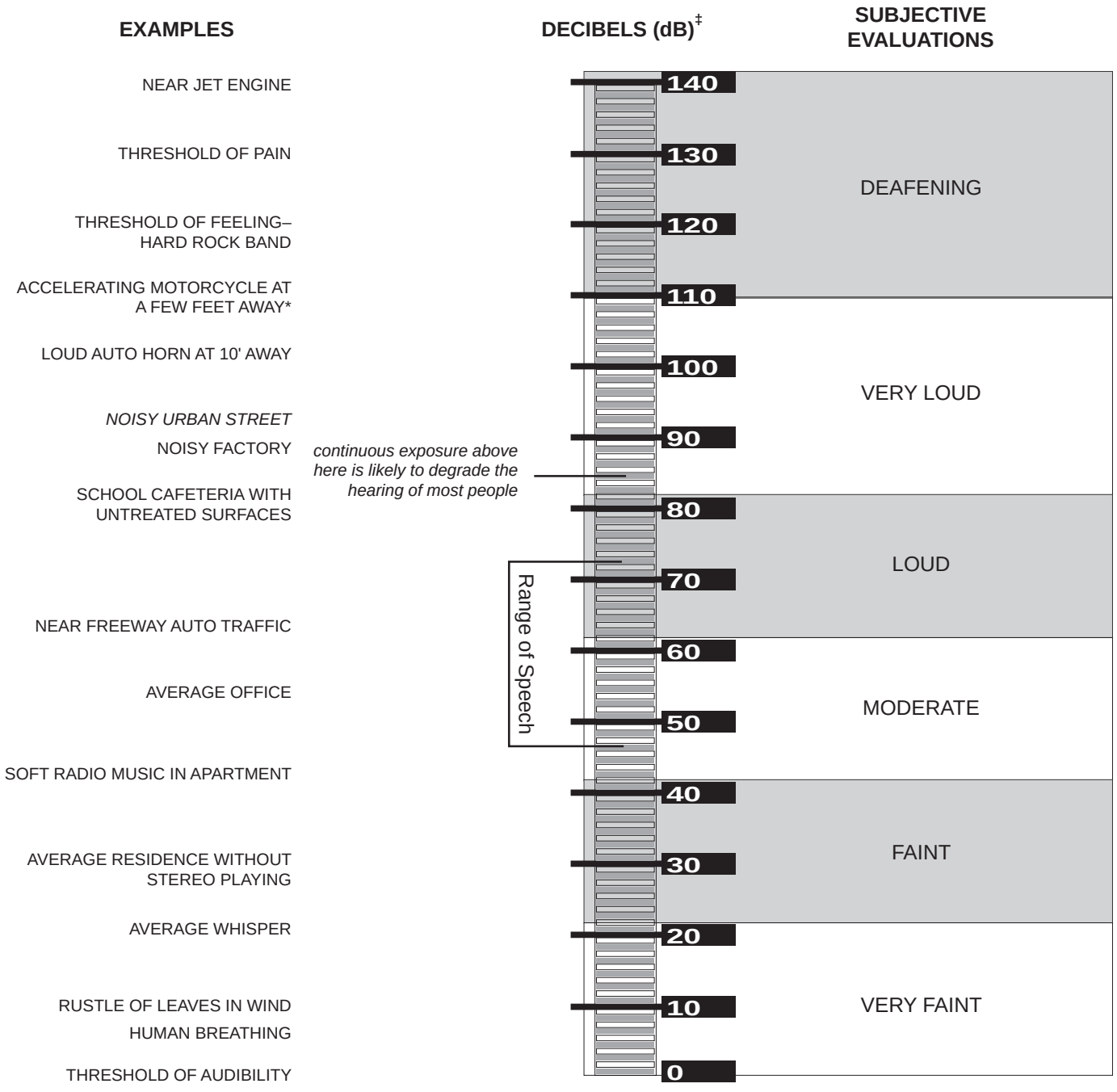
This section describes the existing noise and vibration levels within the region and evaluates the significance of changes in short- and long-term noise and groundborne vibration that could result from the 2018 Regional Transportation Plan/Sustainable Communities Strategy (2018 RTP/SCS). In addition, this Program EIR provides mitigation measures to reduce identified impacts as appropriate and feasible.

4.8.1 NOISE CHARACTERISTICS AND EFFECTS

Characteristics of Sound. Sound is technically described in terms of the loudness (amplitude) and frequency (pitch) of the sound. The standard unit of measurement for sound is the decibel (dB). The human ear is not equally sensitive to sound at all frequencies. The "A-weighted scale" (abbreviated dBA), reflects the normal hearing sensitivity range of the human ear. On this scale, the range of human hearing extends from approximately 3 to 140 dBA. **Figure 4.8-1, A-Weighted Decibel Scale**, provides examples of A-weighted noise levels from common sounds.

Noise Definitions. Environmental noise levels typically fluctuate across time of day. Different types of noise descriptors are used to account for this variability, and different types of descriptors have been developed to differentiate between cumulative noise over a given period and single noise events. Cumulative noise descriptors include the energy-equivalent noise level (Leq), Day-Night Average Noise Level (DNL or Ldn), and Community Noise Equivalent Level (CNEL). The Leq is the actual, time-averaged equivalent, steady-state sound level, which, in a stated period, contains the same acoustic energy as the time-varying sound level during the same period. DNL and CNEL values result from the averaging of Leq values (based on A-weighted decibels) over a 24-hour period, with weighting factors applied to different periods of the day and night to account for their perceived relative annoyance. For DNL, noise that occurs during the nighttime period (10:00 PM to 7:00 AM) is "penalized" by 10 dB. CNEL is similar to DNL, except that it includes a "penalty" of approximately 5 dB for noise that occurs during the evening period (7:00 PM to 10:00 PM).

Individual noise events, such as train pass-bys or aircraft over-flights, are further described using single-event and cumulative noise descriptors. For single events, the maximum measured noise level (Lmax) is often cited, as is the Sound Exposure Level (SEL). The SEL is the energy-based sum of a noise event of given duration that has been "squeezed" into a reference duration of one second, and is typically a value five to 10 dBA higher than the Lmax.



** NOTE: 50' from motorcycle equals noise at about 2000' from a four-engine jet aircraft.*

‡ *NOTE: dB are "average" values as measured on the A–scale of a sound–level meter.*

SOURCE: Impact Sciences, 2018

FIGURE **4.8-1**

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A-Weighted Decibel Scale

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Effects of Noise. Noise, for the purposes of this EIR, is generally defined as unwanted sound. The degree to which noise can impact the human environment range from levels that interfere with speech and sleep (annoyance and nuisance) to levels that cause adverse health effects (hearing loss and psychological effects). Human response to noise is subjective and can vary greatly from person to person. Factors that influence individual response include the intensity, frequency, and pattern of noise, the amount of background noise present before the intruding noise, and the nature of work or human activity that is exposed to the noise source.

Audible Noise Changes. Studies have shown that the smallest perceptible change in sound level for a person with normal hearing sensitivity is approximately 3 dBA. A change of at least 5 dBA would be noticeable and would likely evoke a community reaction (complaints). A 10 dBA increase is subjectively heard as a doubling in loudness and would cause a community response (complaints).

Noise levels decrease as the distance from the noise source to the receiver increases. Noise generated by a stationary noise source, or "point source," will decrease by approximately 6 dBA over hard surfaces (e.g., reflective surfaces such as parking lots or smooth bodies of water) and 7.5 dBA over soft surfaces (e.g., absorptive surfaces such as soft dirt, grass, or scattered bushes and trees) for each doubling of the distance. For example, if in a parking lot, if a noise source produces a noise level of 89 dBA at a reference distance of 50 feet, then the noise level would be 83 dBA at a distance of 100 feet from the noise source, 77 dBA at a distance of 200 feet, and so on. Noise generated by a mobile source will decrease by approximately 3 dBA over hard surfaces and 4.8 dBA over soft surfaces for each doubling of the distance.

Generally, noise is most audible when traveling by direct line-of-sight. Barriers, such as walls, berms, or buildings, that break the line-of-sight between the source and the receiver greatly reduce noise levels from the source since sound can only reach the receiver by bending over the top of the barrier. Sound barriers can reduce sound levels by up to 20 dBA. However, if a barrier is not high or long enough to break the line-of-sight from the source to the receiver, its effectiveness is greatly reduced.

Decibels are logarithmic units, and two decibel levels cannot be added by ordinary arithmetic means. In other words, if one automobile produces a 70-dBA noise level when it passes an observer, two cars passing simultaneously would not produce 140 dBA. Instead, the noise level would be calculated as shown in **Table 4.8-1, Adding Two Decibel Levels**.

Table 4.8-1
Adding Two Decibel Levels

Signal Level Difference between two Sources (dBA)	0	1	2	3	4	5	6	7	8	9	10	>10
Decibels to Add to the Highest Signal Level (dBA)	3	2.5	2	2	1.5	1	1	1	0.5	0.5	0.5	0

Source: Engineering ToolBox, 2003; https://www.engineeringtoolbox.com/adding-decibel-d_63.html, accessed April 24, 2018.

In this instance, two cars passing by an observer, each one of which produces a 70-dBA noise level, would combine to produce a 73-dBA noise level. Several examples are included below to further illustrate how to combine two different decibel levels to calculate a combined noise level:

Example A: A receptor is located near the interchange of two freeways. One freeway generates a 72-dBA noise level and the other freeway generates a 66-dBA noise levels. The combined noise exposure from the freeways would be 73 dBA.

Example B: A receptor is located near a freeway and underneath an airport flight path. The noise levels at a receptor could be 75 dBA from aircraft noise, and 72 dBA from freeway noise. The combined noise level from aircraft and freeway noise exposure would be 77 dBA.

4.8.2 Vibration Characteristics and Effects

Vibration is a unique form of noise. It is unique because its energy is carried through structures and the earth, whereas, noise is simply carried through the air. Thus, vibration is generally felt rather than heard. Some vibration effects can be caused by noise; e.g., the rattling of windows from truck pass-bys. This phenomenon is related to the coupling of the acoustic energy at frequencies that are close to the resonant frequency of the material being vibrated. Typically, groundborne vibration generated by man-made activities attenuates rapidly as distance from the source of the vibration increases. Vibration, which spreads through the ground rapidly, diminishes in amplitude with distance from the source. The ground motion caused by vibration is measured as particle velocity in inches per second and, in the US is referenced as vibration decibels (VdB).[1]

The vibration velocity level threshold of perception for humans is approximately 65 VdB. A vibration velocity of 75 VdB is the approximate dividing line between barely perceptible and distinctly perceptible levels for many people. Most perceptible indoor vibration is caused by sources within buildings, such as operation of mechanical equipment, movement of people, or the slamming of doors. Typical outdoor

1 Caltrans, *Transportation and Construction Vibration Guidance Manual,* September 2013.

sources of perceptible groundborne vibration are construction equipment, steel-wheeled trains, and traffic on rough roads. If a roadway is smooth, the groundborne vibration from traffic is barely perceptible. The range of interest is from approximately 50 VdB, which is the typically background vibration velocity, to 100 VdB, which is the general threshold where minor damage can occur in fragile buildings.[2]

Figure 4.8-2, Typical Levels of Groundborne Vibration, identifies the typical groundborne vibration levels in VdB and human response to different levels of vibration.

Quantifying Vibration Impacts Structures. There are several different methods that are used to quantify vibration. The peak particle velocity (PPV) is defined as the maximum instantaneous peak of the vibration signal. The PPV is most frequently used to describe vibration impacts to buildings, and is usually measured in inches per second. The root mean square (RMS) amplitude is most frequently used to describe the effect of vibration on the human body. The RMS amplitude is defined as the average of the squared amplitude of the signal. VdB is commonly used to measure RMS. The decibel notation acts to compress the range of numbers required to describe vibration.[3]

Effects of Vibration. High levels of vibration may cause direct physical injury to a person or damage to buildings. Most people do not live in close enough proximity to high levels of groundborne vibrations to have their health substantially impacted. Most people consider groundborne vibration to be an annoyance that can affect concentration or disturb sleep. In addition, high levels of groundborne vibration can damage fragile buildings or interfere with equipment that is highly sensitive to groundborne vibration (e.g., electron microscopes).

Perceptible Vibration Changes. In contrast to noise, groundborne vibration is not a phenomenon that most people experience every day. The background vibration velocity level in residential areas is usually 50 RMS or lower, well below the threshold of perception for humans which is around 65 RMS. Most perceptible indoor vibration is caused by sources within buildings, such as operation of mechanical equipment, movement of people, or slamming of doors. Typical outdoor sources of perceptible groundborne vibration are construction equipment, steel-wheeled trains, and traffic on rough roads. If the roadway is smooth, the vibration from traffic is rarely perceptible.[4]

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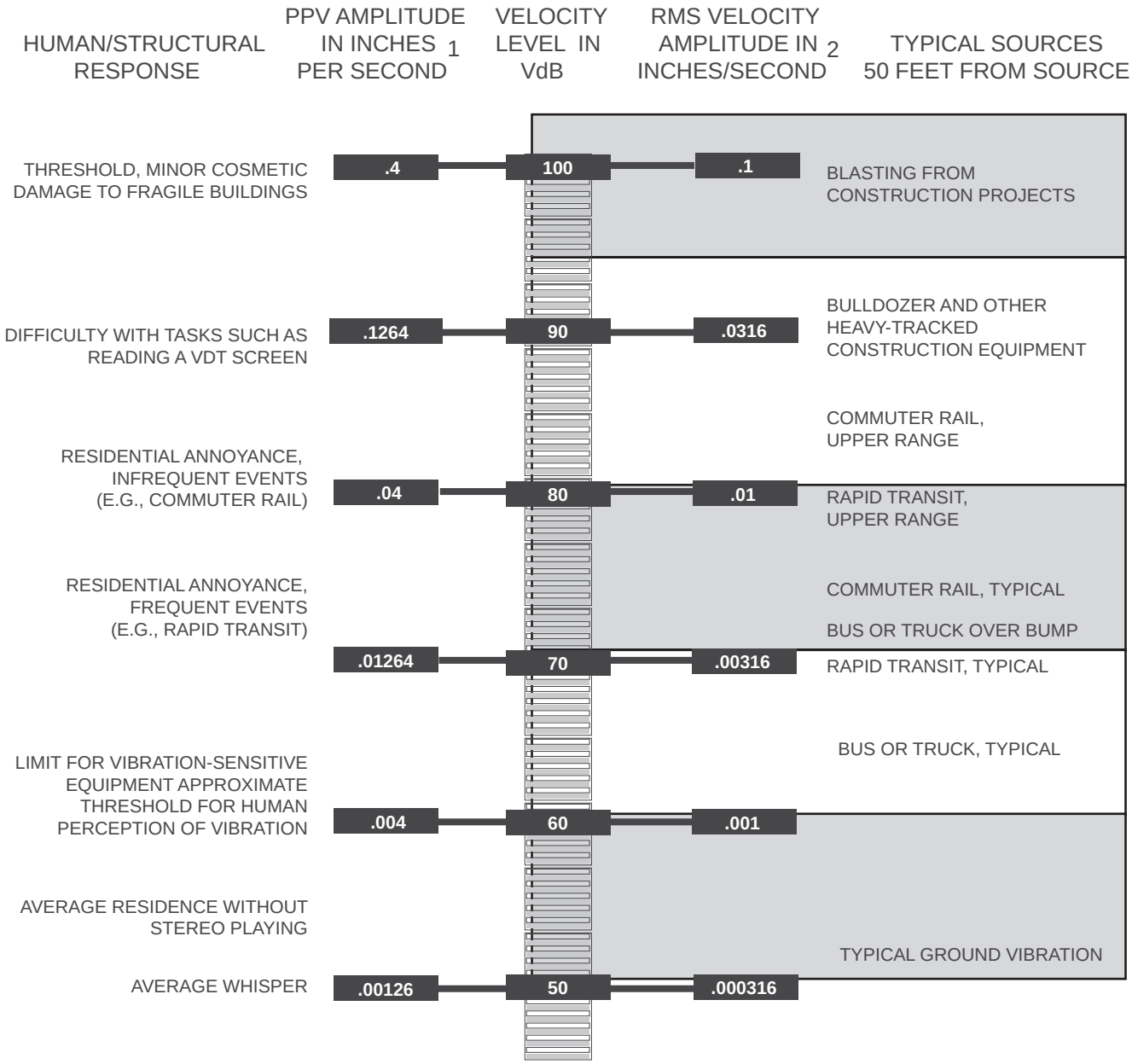
2 Federal Transit Administration, *Transit Noise and Vibration Impact Assessment*, May 2006.

3 Ibid.

4 Ibid.



[1] PPV is typically a factor 1.7 to 6 times greater than RMS vibration velocity. A factor of 4 was used to calculate noise levels.

[2] Vibration levels in terms of velocity levels are defined as: $V=20 \times \log_{10} (a/r)$
V=velocity levels in decibels
a=RMS velocity amplitude
r=reference amplitude (accepted reference quantities for vibration velocity are 1×10^{-6} inches/second in the United States)

SOURCE: Impact Sciences, 2018

FIGURE **4.8-2**

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Typical Levels of Groundbourne Vibration

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4.8.3 ENVIRONMENTAL SETTING

4.8.3.1 Sensitive Receptors

Some land uses are considered more sensitive to ambient noise levels than others due to noise exposure (in terms of both exposure time and "insulation" from noise) and the types of activities typically involved. Residences, motels and hotels, schools, libraries, churches, hospitals, nursing homes, auditoriums, natural areas, parks and outdoor recreation areas are generally more sensitive to noise than are commercial and industrial land uses. Consequently, the noise standards for sensitive land uses are more stringent than those for less sensitive uses, such as commercial and industrial.

To protect various human activities and sensitive land uses (e.g., residences, schools, and hospitals), lower noise levels are needed. A noise level of 55 dBA to 60 dBA outdoors is the upper limit for intelligible speech communication inside a typical home. In addition, social surveys and case studies have shown that complaints and community annoyance in residential areas begin to occur at 55 dBA. Sporadic complaints associated with the 55 dBA to 60 dBA range give way to widespread complaints. At 70 dBA and above, residential community reaction typically involves strong appeals to local officials to stop the noise.

Tulare County encompasses a large area with a wide variety of noise sources and noise levels. The ambient noise environment ranges from low levels associated with wilderness areas to high levels associated with airports and heavily trafficked roadways. This Program EIR presents a discussion of noise levels associated with different noise sources and thereby allows the reader to infer the noise level at different locations, depending on the proximity of a location to a noise source.

4.8.3.2 Sources of Noise Generation in Tulare County

Many principal noise generators within the County are associated with transportation (i.e., airports, roadways, and railroads). Additional noise generators include stationary sources, such as industrial manufacturing plants, construction sites, and wind turbines. Local collector streets are not considered to be a significant source of noise since traffic volume and speed are generally much lower than for freeways and arterial roadways. Generally, transportation-related noise sources characterize the ambient noise environment of an area.

Solid walls and berms may reduce noise levels by 5 to 10 dBA.[5] The minimum attenuation of exterior to interior noise provided by typical building construction in California is provided in **Table 4.8-2, Outside to Inside Noise Attenuation**.

Table 4.8-2
Outside to Inside Noise Attenuation (dBA)

Building Type	Open Windows	Closed Windows
Residences	17	25
Schools	17	25
Churches	20	30
Hospitals/Convalescent Homes	17	25
Offices	17	25
Theaters	20	30
Hotels/Motels	17	25

Source: Transportation Research Board, National Research Council. 1971. Highway Noise: A Design Guide for Highway Engineers, National Cooperative Highway Research Program Report 117.

Roadways

The extent to which traffic noise levels along the County's roads affect sensitive land uses depends upon a number of factors. These include whether the roadway itself is elevated above grade or depressed below grade, whether there are intervening structures or terrain between the roadway and the sensitive uses, and the distance between the roadway and such uses. For example, measurements show that depressing a freeway by approximately 12 feet yields a reduction in traffic noise relative to an at-grade freeway of 7 to 10 dBA at all distances from the freeway.[6] Other factors that can affect roadway noise include condition of the road, type of vehicles using the road (fleet mix), the type of roadway (freeway, arterial, collector, etc.), average speeds, gradient and signalization. Typical traffic noise levels on existing state highways within the County range from a high of 78.9 dBA on State Route 99 between Avenue 308 and Merritt Drive to a low of 54.1 dBA on State Route 245 between the Fresno County line and State Route 201. On arterials, noise levels range from 66.8 dBA on Avenue 152 between State Route 65 and Road 252 to a low of 47.0 dBA on Avenue 304 between Shirk and Giddings Avenue (Tulare County GP EIR, Table 3.5-3).

5 US Department of Transportation, Federal Highway Administration. 2017. *Highway Traffic Noise Analysis and Abatement Policy and Guidance. August.*

6 Beranek, L. L. 1988. *Noise and vibration control* (pp. 182). New York: McGraw-Hill.

Traffic noise within 300 feet from an elevated freeway is typically 2 to 10 dBA less than the noise from an equivalent at-grade facility, but beyond 300 feet, the noise radiated by an elevated and at-grade freeway (assuming equal traffic volumes, fleet mix, and vehicle speed) is the same.[7]

The County has a number of arterial roadways. Typical arterial roadways have one or two lanes of traffic in each direction, with some containing as many as four lanes in each direction. Noise from these sources can be a significant environmental concern where buffers (e.g., buildings, landscaping, etc.) are inadequate or where the distance from centerline to sensitive uses is relatively small.

An additional factor where trucks are present is gradient, road alignment, and signalization. Trucks going up or down a grade can produce significantly more noise due to de-acceleration or acceleration.

Airports

Tulare County's regional airport system includes a range of aviation facilities (see **Figure 4.11-1, Tulare County Airport**s, in **Section 4.11, Transportation and Traffic**), including seven public-use airports (Mefford, Sequoia, Porterville, Visalia Municipal, Eckert, Exeter/Thunderhawk, and Woodlake), and sixteen personal-use or special-use airports. A public–use airport is open to the general public; two of the public use airports are privately owned. Only the Visalia Municipal Airport has scheduled airline service. The Visalia Municipal Airport is classified as a "General Transport" facility. Aircraft operations by time of day are broken down into approximately 75% during the day (7:00 a.m. - 7:00 p.m.), approximately 15% during the evening (7:00 p.m. - 10:00 p.m.), with approximately 10% during the nighttime hours (10:00 p.m. - 7:00 a.m.). Based on the 60 and 65 dB CNEL noise contours for existing operations, off-airport land uses in the Visalia Municipal Airport environs are generally compatible with airport uses. Operations at the airport would increase in the future, and there is the possibility of more frequent use by larger air carriers and corporate jet aircraft.

Other publicly-owned airports operate in the County. This includes Porterville Municipal Airport, which is located adjacent to agricultural, commercial, recreational, and industrial land uses. Tulare Municipal Airport is located adjacent to both commercial and recreational land uses. Woodlake Airport is surrounded by agriculture land uses as well as housing. In addition, Sequoia Field is located near residential areas. Private airports exist at both Eckert Field and Thunderhawk Field.

Airport noise contours have been established for all airport facilities in the County. Noise contours for existing and future conditions at each of the airports are contained in individual plans for each airport, including: Airport Master Plans, Airport Land Use Compatibility Plans, Comprehensive Airport Land

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7 Beranek, L. L. 1988. *Noise and vibration control* (pp. 182). New York: McGraw-Hill.

Use Plans, Airspace Plans, and Airport Layout Plans. Most of these plans include implementation goals, objectives, and policies and/or recommendations to lessen noise impacts.

The 60 dB CNEL contour for annual average operations at most Tulare County airports is located relatively close to the runway due to the fact that air operations are relatively limited and are often undertaken by small propeller aircraft. However, maximum noise levels from individual operations by high performance single and twin engine aircraft, fire suppression aircraft and some corporate jets can result in significant short-term noise impacts for persons located near the approach or departure patterns of an airport.

Railroad Operations

Railroad operations generate high, relatively brief, intermittent noise events. These noise events are an environmental concern for sensitive uses located along rail lines and in the vicinities of switching yards. Locomotive engines and the interaction of steel wheels and rails are the most noticeable source of rail noise. The latter source creates three types of noise: (1) rolling noise due to continuous rolling contact, (2) impact noise when a wheel encounters a rail joint, turnout or crossover, and (3) squeal generated by friction on tight curves. In addition, use of air horns and crossing bell gates contribute to noise levels in the vicinity of grade crossings. **Table 4.10-3, Reference Noise Levels for Various Rail Operations,** provides reference noise levels in terms of Sound Exposure Levels for certain types of rail operations.

Most noticeable rail-associated noise occurs within approximately 100 feet of main line railroad tracks, rail noise is audible from 100 to 700 feet, and relatively minor at distances greater than about 700 feet. Site-specific factors such as sound walls, proximity to grade crossings or switching yards, and topographic shielding can affect the distances at which noises from rail are heard.

Table 4.8-3
Reference Noise Levels for Various Rail Operations

Source/Type		Reference Condition	Reference Noise Level SEL, dBA at 50 feet and 50 mph
Commuter Rail, At-Grade	Locomotives	Diesel-electric, 3,000 horsepower, throttle 5	92
		Electric	90
	Diesel Multiple Unit	Diesel-powered, 1,200 horsepower	85
	Horns	Within 0.25 mile of grade crossing	110
	Cars	Ballast, welded rail	82
Rail Transit		At-grade, ballast, welded rail	82
Transit Whistles/Warning Devices		Within 0.125 mile of grade crossing	93
Automated Guideway Transit	Steel Wheel	Aerial, concrete, welded rail	80
	Rubber Tire	Aerial, concrete, guideway	78
Monorail		Aerial, straddle beam	82
Maglev		Aerial, open guideway	72

Source: FTA, Transit Noise and Vibration Impact Assessment, May 2006

The County is affected by both freight and passenger railroad operations. While these operations generate significant noise levels in the immediate vicinity of the railroad tracks or grade crossings during train passages, these operations are intermittent (varying substantially depending on the location), and the tracks are widely dispersed throughout the County. Noise and vibrations from freight and passenger trains specifically are discussed in more detail below.

Freight Trains

Noise levels generated by freight train passby events reflect locomotive engine noise and rail car wheel rail interaction. The former depends upon track grade conditions (i.e., uphill versus downhill) and is largely independent of speed, whereas the latter is highly speed dependent, increasing approximately 6 dB for each doubling of train velocity. In addition to noise, freight trains also generate substantial amounts of groundborne noise and vibration in the vicinity of the tracks. Ground-borne noise and vibration is a function of both the quality of the track and the operating speed of the vehicles.

There are high-speed mainline railroad operations in the County on two lines: the Burlington Northern-Santa Fe (BNSF) Railroad, traversing the southwest portion of the County, and the Union Pacific (UP) Railroad which follows SR 99. The primary branch line in Tulare County is on the San Joaquin Valley

Railroad. As discussed in part above, the most noticeable noise generators associated with rail operations are locomotive engines and the interaction of steel wheels and rails (as well as use of air horns and crossing bells at grade crossings).

The noise from the BNSF Railroad primarily affects the communities of Allensworth and Angiola, as well as other rural uses located near the tracks in the southwestern corner of the County. This includes freight trains operating during both day and night, and passenger trains operating during the day. The Tulare County General Plan Background Report estimates that the type and frequency of these operations results in noise exposures of 65 and 60 dBA Ldn at 345 and 650 feet from the center of the tracks.

The noise from the UP Railroad affects the City of Tulare as well as several small communities and rural areas. Approximately 20 trains per day traverse this route, although it is entirely freight, as no regional passenger service runs on the UP tracks. Trains traverse the area during both the day and at night, resulting in noise exposures of 65 and 60 dBA Ldn at 345 and 650 feet from the center of the tracks.

Branchline operations in the County are more limited in service, generally only occurring three times a week. Speeds are restricted to 40 mph, although measurements conducted on UP branchline operations in and around Visalia have resulted in maximum levels at 100 feet ranging from 92-105 dBA with the use of the horn.

The San Joaquin Valley Railroad is a regional service that runs between Bakersfield and Fresno. Although noise measurements have not been taken to determine the decibel levels of its trains, it can be assumed that the railroad could have significant short-term impacts near grade crossings during train movements.

In addition, Tulare County has an additional network of railroad lines belonging to both BNSF and UP. As mentioned above, BNSF tracks generally affect the southwest portion of the County near SR 43, while UP tracks are along SR 99. Studies have showing that a line supporting 40 trains per day generate approximately DNL 75 dBA at 200 feet from the centerline of the tracks.[8]

Commuter Passenger Trains

Although there is no passenger train service within the boundaries of Tulare County, the Amtrak San Joaquin routes provide passenger service through the California's Central Valley, with seven northbound and seven southbound trains every day. The section of track leading from Corcoran to Bakersfield traverses the southwest portion of Tulare County.

[8] South Coast Air Quality Management District, *2012 AQMP Final Program EIR.* November 2012.

Industrial, Manufacturing, and Construction

Noise from industrial complexes (including oil extraction and other energy facilities), manufacturing plants, and construction sites are characterized as stationary, or point, sources of noise, even though they may include mobile sources, such as forklifts and graders. Local governments typically regulate noise from industrial, manufacturing, and construction equipment and activities through enforcement of noise ordinance standards, implementation of general plan policies, and imposition of conditions of approval for building or grading permits. Industrial complexes and manufacturing plants are generally located away from sensitive land uses, and, as such, noise generated from these sources generally has less effect on the local community.

In contrast to industrial and manufacturing plants, construction sites are located throughout the region and are often located within, or adjacent to, residential districts. In general, construction activities generate high noise levels intermittently, on and adjacent to the construction sites, and the related noise impacts are short-term in nature. The dominant source of noise from most construction equipment is the engine, usually a diesel engine, with inadequate muffling. In a few cases, however, such as impact pile driving or pavement breaking, noise generated by the process dominates.

Construction equipment can be considered to operate in two modes, stationary and mobile. Stationary equipment operates in one location for one or more days at a time, with either a fixed-power operation (pumps, generators, compressors) or a variable noise operation (pile drivers, pavement breakers). Mobile equipment moves around the construction site with power applied in cyclic fashion (bulldozers, loaders), or movement to and from the site (trucks).

Construction-related noise levels generally fluctuate depending on the construction phase, equipment type and duration of use, distance between noise source and receptor, and presence or absence of barriers between noise source and receptor. **Table 4.8-4, Demolition and Construction Equipment Source Noise Levels,** shows typical noise levels associated with various types of construction-related machinery. These noise levels, which correspond to a distance of 50 feet, decrease by approximately 6 dBA with each doubling of distance from the construction site (e.g., noise levels from excavation might be approximately 83 dBA at 100 feet from the site, and about 77 dBA at 200 feet from the site). Interior noise levels from construction are approximately 10 dBA (open windows) to 20 dBA (closed windows) less than exterior noise levels due to the attenuation provided by building facades.

Table 4.8-4
Demolition and Construction Equipment Source Noise Levels

Equipment	Levels in dBA at 50 feet
Front End Loader[1]	80
Trucks[2]	88
Cranes [1]	85
Vibratory Pile Driver[1]	95
Saw[2]	76
Pneumatic Tools[1,2]	85
Jackhammers[1,2]	85-88
Pumps[1,2]	76-77
Generators[1,2]	70-82
Compressors[1,2]	80-81
Concrete Mixers[2]	85
Concrete Pumps[1,2]	82
Backhoe[1,2]	80
Impact Pile Driver[1,2]	95-101
Tractor[1]	84
Scraper/Grader[1,2]	85-89
Paver[1,2]	85-89

Source:
[1] FHWA, *FHWA Highway Construction Noise Handbook,* August 2006.
[2] FTA, *Transit Noise and Vibration Impact Assessment*, May 2006.

4.10.3.3 Vibration

Similar to the environmental setting for noise, the vibration environment is typically dominated by traffic from nearby roadways and activity on construction sites, with some locations experiencing vibration from rail operations and airports. Heavy trucks can generate groundborne vibrations that vary depending on vehicle type, weight, and pavement conditions. Heavy trucks typically operate on major streets and can result in perceptible vibration.

As shown in **Table 4.8-5, Vibration Levels Associated with Construction Equipment**, the highest impact is associated with the heaviest equipment, such as pile drivers or large bulldozers, can generate vibrations of 1.518 to 0.089 inches per second PPV at a distance of 25 feet.

Table 4.8-5
Vibration Levels Associated with Construction Equipment

Equipment		PPV at 25 feet (inches per second)	Approximate Vdb at 25 feet
Pile Driver (Impact)	Upper Ranges	1.518	112
	Typical	0.644	104
Pile Driver (Sonic)	Upper Range	0.734	105
	Typical	0.170	93
Vibratory Roller		0.210	95
Clam Shovel Drop (Slurry Wall)		0.202	94
Hydrol Mill (Slurry Wall)	In Soil	0.008	66
	In Rock	0.017	75
Large Bulldozer		0.089	87
Caisson Drilling		0.089	87
Loaded Trucks		0.076	86
Jackhammer		0.035	79
Small Bulldozer		0.003	58

Source: Federal Transit Administration, Transit Noise and Vibration Impact Assessment, 2006.

4.8.4 REGULATORY FRAMEWORK

The federal government sets noise standards for transportation-related noise sources that are closely linked to interstate commerce, such as aircraft, locomotives, and trucks, and, for those noise sources, the state government is preempted from establishing more stringent standards.

The state sets noise standards for those transportation noise sources that are not preempted from regulation, such as automobiles, light trucks, and motorcycles. Noise sources associated with industrial, commercial, and construction activities are generally subject to local control through noise ordinances and general plan policies.

4.8.4.1 Federal

Federal Highway Administration

Federal regulations for railroad noise are contained in 40 Code of Federal Regulations (CFR) Part 201 and 49 CFR Part 210. The regulations set noise limits for locomotives and are implemented through regulatory controls on locomotive manufacturers.

Federal regulations also establish noise limits for medium and heavy trucks (more than 4.5 tons, gross vehicle weight rating) under 40 CFR Part 205, Subpart B. The federal truck passby noise standard is 80 dB at 15 meters from the vehicle pathway centerline. These controls are implemented through regulatory controls on truck manufacturers.

The Federal Highway Administration (FHWA) regulations for noise abatement must be considered for federal or federally-funded projects involving the construction of a new highway or significant modification of an existing freeway when the project would result in a substantial noise increase, or when the predicted noise levels approach or exceed the Noise Abatement Criteria (NAC), discussed below.

Title 23 of the Code of Federal Regulations (23 CFR § 772) provides procedures for preparing operational and construction noise studies and evaluating noise abatement considered for federal and federal-aid highway projects. Under 23 CFR section 772.7, projects are categorized as Type I or Type II projects. FHWA defines a Type I project as a proposed federal or federal-aid highway project for the construction of a highway on a new location, or the physical alteration of an existing highway which significantly changes either the horizontal or vertical alignment, or increases the number of through-traffic lanes. A Type II project is a noise barrier retrofit project that involves no changes to highway capacity or alignment.

Type I projects include those that create a completely new noise source, as well as those that increase the volume or speed of traffic or move the traffic closer to a receiver. Type I projects include the addition of an interchange, ramp, auxiliary lane, or truck-climbing lane to an existing highway, or the widening of an existing ramp by a full lane width for its entire length. Projects unrelated to increased noise levels, such as striping, lighting, signing, and landscaping projects, are not considered Type I projects.

Under 23 CFR section 772.11, noise abatement must be considered for Type I projects if the project is predicted to result in a traffic noise impact (discussed more below). In such cases, 23 CFR section 772 requires that the project sponsor "consider" noise abatement before adoption of the environmental document. This process involves identification of noise abatement measures that are reasonable, feasible, and likely to be incorporated into the project, and of noise impacts for which no apparent solution is available.

Traffic noise impacts, as defined in 23 CFR section 772.5, occur when the predicted noise level in the design year approaches or exceeds the NAC specified in 23 CFR section 772, or a predicted noise level substantially exceeds the existing noise level (a "substantial" noise increase). Under these regulations, an impact could result unrelated to the Plan if existing noise levels already exceed the NAC. A "substantial increase" is defined as an increase in Leq of 12 dBA during the peak hour of traffic noise. For sensitive

uses, such as residences, schools, churches, parks, and playgrounds, the NAC for interior and exterior spaces is Leq 57 and 66 dBA, respectively, during the peak hour of traffic noise. **Table 4.8-6, FHWA Noise Abatement Criteria,** summarizes NAC corresponding to various land use activity categories. Activity categories and related traffic noise impacts are determined based on the actual land use in a given area.

Table 4.8-6
FHWA Noise Abatement Criteria

NAC, Hourly A-Weighted Noise Level	Description of Activities
57 dBA (Exterior)	Lands on which serenity and quiet are of extraordinary significance and serve an important public need and where the preservation of those qualities is essential if the area is to continue to serve its intended purpose
67 dBA (Exterior)	Picnic areas, recreation areas, playgrounds, active sport areas, parks, residences, motels, hotels, schools, churches, libraries, and hospitals.
72 dBA (Exterior)	Developed lands, properties, or activities not included in above.
52 dBA (Interior)	Residences, motels, hotels, public meeting rooms, schools, churches, libraries, hospitals, and auditoriums.

Source: 23 CFR Part 772

Federal Aviation Administration (FAA)

Aircraft operated in the US are subject to certain federal requirements regarding noise emissions levels. These requirements are set forth in Title 14 CFR, Part 36. Part 36 establishes maximum acceptable noise levels for specific aircraft types, taking into account the model year, aircraft weight, and number of engines.

National Environmental Policy Act

The National Environmental Policy Act (NEPA) is implemented by regulations included in the Code of Federal Regulations (40 CFR § 1500 *et seq.*), which require careful consideration of the harmful effects of federal actions or plans, including projects that receive federal funds, if they may have a significant adverse effect on the environment. NEPA mandates that all federal agencies carry out their regulations, policies, and programs in accordance with NEPA's policies of environmental protection. NEPA encourages the protection of all aspects of the environment and requires federal agencies to utilize a systematic, interdisciplinary approach to agency decision-making that will ensure the integrated use of natural sciences such as geology. Noise impacts of projects are routinely considered as one of the potential environmental consequences of federal actions subject to NEPA. While NEPA compliance is not required for the 2018 RTP/SCS, NEPA compliance will be required for transportation improvement

projects that will be financed using federal funds. Some development projects (such as low-income housing) also use federal funds and are subject to NEPA.

Department of Housing and Urban Development (HUD)

The mission of HUD includes creating " strong, sustainable, inclusive communities and quality affordable homes for all." [9] Accounting for acoustics is intrinsic to this mission, as an environment's quality can be compromised by excessive noise. In order to facilitate the creation of suitable living environments, HUD has developed a standard for noise criteria. The basic foundation of the HUD noise program is set out in the noise regulation 24 CFR Part 51 Subpart B, Noise Abatement and Control.

HUD's noise policy clearly requires noise attenuation measures be provided when proposed projects are to be located in high noise areas. Within the HUD Noise Assessment Guidelines, potential noise sources are examined for projects located within 15 miles of a military or civilian airport, 1,000 feet from a road or 3,000 feet from a railroad.

HUD exterior noise regulations state that 65 dBA CNEL noise levels or less are acceptable for residential land uses and noise levels exceeding 75 dBA DNL are unacceptable. HUD's regulations do not contain standards for interior noise levels. Rather a goal of 45 dBA is set forth, and the attenuation requirements are geared toward achieving that goal. It is assumed that with standard construction any building will provide sufficient attenuation so that if the exterior level is 65 dBA DNL or less, the interior level will be 45 dBA DNL or less.

Federal Transit Administration

The Federal Transit Administration (FTA) has published guidance relative to vibration impacts. According to the FTA, engineered concrete and masonry buildings can be exposed to groundborne vibration levels of 0.3 inch per second without experiencing structural damage. Buildings extremely susceptible to vibration damage can be exposed to groundborne vibration levels of 0.12 inch per second without experiencing structural damage.[10]

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9 U.S. Department of Housing and Urban Development. 2018. Mission. Available online at: https://www.hud.gov/about/mission, accessed April 24, 2018.

10 Federal Transit Administration, *Transit Noise and Vibration Impact Assessment*, May 2006.

4.8.4.2 State

Noise Compatibility Guidelines

The state has published guidance for locating land uses in areas compatible with the existing noise environment. These guidelines are shown in **Table 4.8-7**, **Land Use Compatibility for Community Noise Environments.** For example, it would normally be acceptable for a single-family residence to be located in an area with an existing noise level of 60 dBA CNEL or less.

California's Airport Noise Standards

The State of California has the authority to establish regulations requiring airports to address aircraft noise impacts on land uses in their vicinities. The State of California's Airport Noise Standards, found at 21 California Code of Regulations section 5000 *et seq*., identify a noise exposure level of CNEL 65 dBA as the noise impact boundary around airports. Within the noise impact boundary, airport proprietors are required to ensure that all land uses are compatible with the aircraft noise environment or the airport proprietor must secure a variance from the California Department of Transportation.

State Aeronautics Act

The California State Aeronautics Act (SAA), Public Utilities Code (PUC) section 21001 *et seq*., was established "to protect the public interest in aeronautics and aeronautical progress." Airport land use compatibility planning, as required by the SAA, outlines the statutory requirements for Airport Land Use Commissions (ALUCs) including the preparation of Airport Land Use Compatibility Plans (ALUCPs) for each public use airport in California. The California Caltrans Division of Aeronautics administers much of the SAA and provides guidance for meeting the baseline safety and compatibility requirements. An ALUCP contains policies and criteria that address compatibility between airports and future land uses that surround them by addressing noise, overflight, safety, and airspace protection concerns to minimize the public's exposure to excessive noise and safety hazards within the airport influence area for each airport over a 20-year horizon.

The noise compatibility factor is considered in an ALUCP to "avoid introducing new noise-sensitive land uses in the vicinity of an airport that would be exposed to significant levels of aircraft noise, taking into account the characteristics of the airport and the communities surrounding the airport." While airport noise may be addressed by altering runway use through flight routing changes, aircraft operational procedure changes, and engine run-up restrictions, these actions generally are subject to approval by FAA, which has the authority and responsibility to control aircraft noise sources, implement and enforce flight operational procedures, and manage the air traffic control system.

ALUCPs include airport runway noise level contours that reflect the existing and anticipated growth of the airport for at least 20 years after adoption, and include potential development planning. ALUCPs differentiate allowed and prohibited land uses according to noise and land use compatibility guidelines.

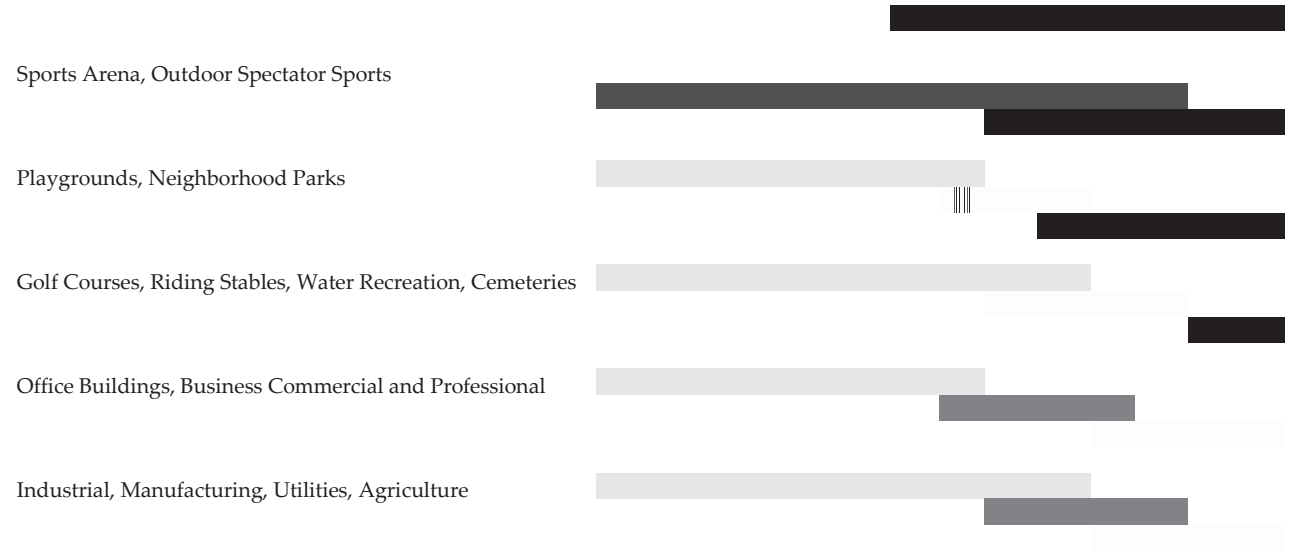
California Department of Transportation (Caltrans)

The State of California establishes noise limits for vehicles licensed to operate on public roads. For heavy trucks, the state passby standard is consistent with the federal limit of 80 dBA at 15 meters from the centerline. The state passby standard for light trucks and passenger cars (less than 4.5 tons gross vehicle rating) is also 80 dBA at 15 meters from the centerline. For new roadway projects, Caltrans employs the Noise Abatement Criteria, discussed above in connection with FHWA.

Section 216 of the California Streets and Highways Code relates to the noise effects of a proposed freeway project on public and private elementary and secondary schools. Under this code, a noise impact occurs if, as a result of a proposed freeway project, noise levels exceed 52 dBA Leq in the interior of public or private elementary or secondary classrooms, libraries, multipurpose rooms, or spaces. If a project results in a noise impact under this code, noise abatement must be provided to reduce classroom noise to a level that is at or below 52 dBA Leq. If the noise levels generated from freeway and non-freeway sources exceed 52 dBA Leq prior to the construction of the proposed freeway project, then noise abatement must be provided to reduce the noise to the level that existed prior to construction of the project.

Table 4.8-7
Land Use Compatibility for Community Noise Environments

Land Use Category	Community Noise Exposure (dBA), CNEL							
	50	55	60	65	70	75	80	85
Residential - Low Density Single-Family, Duplex, Mobile Homes								
Residential - Multi-Family								
Transient Lodging - Motels Hotels								
Schools, Libraries, Churches, Hospitals, Nursing Homes								
Auditoriums, Concert Halls, Amphitheaters								



Normally Acceptable - Specified land use is satisfactory, based upon the assumption that any buildings involved are of normal conventional construction without any special noise insulation requirements.

Conditionally Acceptable - New construction or development should be undertaken only after a detailed analysis of the noise reduction requirements is made and needed noise insulation features included in the design. Conventional construction, but with closed windows and fresh air supply system or air conditionally will normally suffice.

Normally Unacceptable - New construction or development should generally be discouraged. If new construction or development does proceed, a detailed analysis of the noise reduction requirements must be made and needed noise insulation features included in the design.

Clearly Unacceptable - New construction or development should generally not be undertaken.

Source: Governor's Office of Planning and Research. 2017. General Plan Guidelines, Appendix D.

California Noise Insulation Standards

The California Noise Insulation Standards, found at 25 California Code of Regulations section 1092, set requirements for new multi-family residential units, hotels, and motels that may be subject to relatively high levels of transportation-related noise. For exterior noise, the noise insulation standard is 45 dBA CNEL in any habitable room and requires an acoustical analysis demonstrating how dwelling units have been designed to meet this interior standard where such units are proposed in areas subject to noise levels greater than 60 dBA CNEL.

State Vibration Regulations

There are no adopted state policies or standards for groundborne vibration. However, Caltrans recommends that extreme care be taken when sustained pile driving occurs within 7.5 meters (25 feet) of any building, and 15 to 30 meters (50 to 100 feet) of a historic building or a building in poor condition.[11]

4.8.4.3 Local

General Plans

To identify, appraise, and remedy noise problems in local communities, the County and each city in the County is required to adopt a noise element as part of its General Plan. Each noise element is required to analyze and quantify current and projected noise levels associated with local noise sources, including, but not limited to, highways and freeways, primary arterials and major local streets, rail operations, air traffic associated with the airports, local industrial plants, and other ground stationary sources that contribute to the community noise environment. Beyond statutory requirements, local jurisdictions are free to adopt their own goals and policies in their noise elements, although most jurisdictions across the state have chosen to adopt noise/land use compatibility guidelines that are similar to those recommended by the state. The overlapping CNEL ranges indicate that local conditions (existing noise levels and community attitudes toward dominant noise sources) should be considered in evaluating land use compatibility at specific locations.

In addition to regulating noise through noise element policies, local jurisdictions regulate noise through enforcement of local ordinance standards. These standards generally relate to noisy activities (e.g., use of loudspeakers and construction) and stationary noise sources and facilities (e.g., air conditioning units and industrial activities).

The general plans of the largest jurisdictions that would receive the most impact from the 2018 RTP/SCS are discussed below. Other jurisdictions in the County have similar policies.

Tulare County General Plan

Applicable policies from the Tulare County General Plan[12] include the following:

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11 California Department of Transportation. Transportation Related Earthborne Vibrations, Technical Advisory Number TAV-02-01-R9601, February 20, 2002. http://www.dot.ca.gov/hq/env/noise/pub/transportation_related_earthborne_vibrations.pdf

12 Tulare County, *Tulare County General Plan 2030 Update*, 2012

- **HS-8.2 Noise Impacted Areas:** The County shall designate areas as noise-impacted if exposed to existing or projected noise levels that exceed 60 dBA Ldn (or CNEL) at the exterior of buildings.

- **HS-8.3 Noise Sensitive Land Uses:** The County shall not approve new noise sensitive uses unless effective mitigation measures are incorporated into the design of such projects to reduce noise levels to 60 dB Ldn (or CNEL) or less within outdoor activity areas and 45 dB Ldn (or CNEL) or less within interior living spaces.

- **HS-8.4 Airport Noise Contours:** The County shall ensure new noise sensitive land uses are located outside the 60 CNEL contour of all public use airports.

- **HS-8.5 State Noise Standards:** The County shall enforce the State Noise Insulation Standards (California Administrative Code, Title 24) and Chapter 35 of the Uniform Building Code (UBC). Title 24 requires that interior noise levels not exceed 45 dB Ldn (or CNEL) with the windows and doors closed within new developments of multi-family dwellings, condominiums, hotels, or motels. Where it is not possible to reduce exterior noise levels within an acceptable range the County shall require the application of noise reduction technology to reduce interior noise levels to an acceptable level.

- **HS-8.6 Noise Level Criteria:** The County shall ensure noise level criteria applied to land uses other than residential or other noise-sensitive uses are consistent with the recommendations of the California Office of Noise Control (CONC).

- **HS-8.7 Inside Noise:** The County shall ensure that in instances where the windows and doors must remain closed to achieve the required inside acoustical isolation, mechanical ventilation or air conditioning is provided.

- **HS-8.8 Adjacent Uses:** The County shall not permit development of new industrial, commercial, or other noise generating land uses if resulting noise levels will exceed 60 dB Ldn (or CNEL) at the boundary of areas designated and zoned for residential or other noise-sensitive uses, unless it is determined to be necessary to promote the public health, safety and welfare of the County.

- **HS-8.11 Peak Noise Enforcement:** The County shall limit noise generating activities, such as construction, to hours of normal business operation (7 a.m. to 7 p.m.). No peak noise generating activities shall be allowed to occur outside of normal business hours without County approval.

- **HS-8.12 Foothill and Mountain Noise:** For areas designated by Tulare County as being within Foothill and Mountain Planning Areas and outside Foothill Development Corridors, the hourly Leq resulting from the development or new noise-sensitive land uses or new noise-generating sources shall not exceed 50 dB during the day (7:00 a.m.-10:00 p.m.) or 40 dB during the night (10:00 p.m.-7:00 a.m.) when measured at the boundary of areas containing or planned and zoned for residential or other noise-sensitive land uses. For these same areas and under the same circumstances, the maximum A-weighed noise level (Lmax) shall not exceed 70 dB during the day or 60 dB during the night.

- **HS-8.13 Noise Analysis:** The County shall require a detailed noise impact analysis in areas where current or future exterior noise levels from transportation or stationary sources have the potential to exceed the adopted noise policies of the Health and Safety Element, where there is development of new noise sensitive land uses or the development of potential noise generating land uses near existing sensitive land uses. The noise analysis shall be the responsibility of the project applicant and

be prepared by a qualified acoustical engineer (i.e., a Registered Professional Engineer in the State of California, etc.). The analysis shall include recommendations and evidence to establish mitigation that will reduce noise exposure to acceptable levels (such as those referenced in Table 10-1 of the Health and Safety Element).

- **HS-8.14 Sound Attenuation Features:** The County shall require sound attenuation features such as walls, berming, heavy landscaping, between commercial, industrial, and residential uses to reduce noise and vibration impacts.

- **HS-8.15 Noise Buffering:** The County shall require noise buffering or insulation in new development along major streets, highways, and railroad tracks.

- **HS-8.16 State Noise Insulation:** The County shall enforce the State Noise Insulation Standards (California Administrative Code, Title 24) and Chapter 35 of the Uniform Building Code.

- **HS-8.18 Construction Noise:** The County shall seek to limit the potential noise impacts of construction activities by limiting construction activities to the hours of 7 am to 7pm, Monday through Saturday when construction activities are located near sensitive receptors. No construction shall occur on Sundays or national holidays without a permit from the County to minimize noise impacts associated with development near sensitive receptors.

- **HS-8.19 Construction Noise Control:** The County shall ensure that construction contractors implement best practices guidelines (i.e. berms, screens, etc.) as appropriate and feasible to reduce construction-related noise impacts on surrounding land uses.

Tulare County Comprehensive Airport Land Use Plan (CALUP)

The CALUP was adopted by Tulare County in December of 2012 to satisfy the state's aviation law requirements.[13] The CALUP provides for the orderly growth of each public use airport and minimizes land use conflicts over height and noise with the surrounding area. The CALUP includes building height restrictions, specifies allowable land uses, and determines building standards within all airports within the County. Development near airports is generally required to comply with the measures set forth in the CALUP. [14]

4.8.5 ENVIRONMENTAL IMPACTS

4.8.5.1 Thresholds of Significance

For the purposes of this Program EIR, TCAG has determined implementation of the 2018 RTP/SCS would result in significant impacts related to noise and vibration, if the Project could result in:

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13 Aries Consultants. 2012. Tulare County Comprehensive Airport Land Use Plan (CALUP). December.

14 Ibid.

- Exposure of persons or generation of noise in levels in excess of standards established in local general plans or noise ordinances, or applicable standards of other agencies.
- Exposure of persons to or generation of excessive groundborne vibration or groundborne noise levels.
- A substantial permanent increase in ambient noise levels above levels existing without the project.
- A substantial temporary or periodic increase in ambient noise levels above levels existing without the project.
- Exposure of people residing or working in the project area to excessive noise levels if the project is located within an area covered by an airport land use plan, or where such a plan has not been adopted, within 2 miles of a public airport or public use airport
- Exposure of people residing or working in the project area to excessive noise levels if the project is located in the vicinity of a private airstrip.

4.8.5.2 Methodology

The analysis assesses the impacts from noise and vibration that could result from implementation of the proposed 2018 RTP/SCS. For each impact, implementation of the proposed 2018 RTP/SCS is analyzed at the regional level.

Impacts are assessed in terms of both land use and transportation project impacts. By 2042, implementation of the proposed 2018 RTP/SCS would result in a land use pattern and transportation network that is different from existing conditions.

Since noise is generally a localized impact, project-specific and detailed analyses would occur at the individual project level. Subsequent project-specific environmental analyses will be required to analyze individual transportation and land use projects to determine the magnitude of noise and vibration impacts, and to identify appropriate mitigation measures for each project.

For purposes of this EIR, an increase of 3 dBA is considered a significant impact. In general an increase of 3 dBA is perceptible to the average human ear. In order to assess where noise levels could increase by 3 dBA or more, the TCAG model was used to identify roadway segments where one or more of the following conditions could occur: 1) truck (medium and heavy-duty) volume would increase 130 percent from existing conditions; and/or 2) truck (medium and heavy-duty) volume would increase by 100 percent with an increase in other vehicles of 50 percent and/or 3) total traffic volume would increase by 100 percent.

Determination of Significance

The methodology for determining the significance of noise and vibration impacts compares the existing conditions to the 2018 RTP/SCS conditions, as required by *State CEQA Guidelines* Section 15126.2(a).

The analysis is based on an assessment of growth (population, housing, and employment) projected for the region by 2042, and an assessment of how that growth and transportation projects could impact noise and vibration. Individual project sites within Tulare County were not physically surveyed; rather this is a programmatic analysis based on a brief description of the types of noise and vibration issues currently found within the region and reasonably expected as a result of certain growth and development patterns.

Transportation projects consist of freeway, auxiliary, arterial/expressway miles, collector and local streets, bridge construction and widening, signalization projects, railroad crossings, road maintenance, Class I bicycle and pedestrian facilities, and Class II bicycle lanes. Different project types will have different impacts on or be differently impacted by, noise and vibration. The evaluation of noise and vibration impacts in this section assumes that construction and development in Tulare County will adhere to applicable federal, state, and local regulations, as appropriate for individual projects.

4.8.5.3 Impacts and Mitigation Measures

Impact NOISE-1	**Exposure of persons or generation of noise in levels in excess of standards established in local general plans or noise ordinances, or applicable standards of other agencies.**
Impact NOISE-2	**Result in a substantial temporary or periodic increase in ambient noise levels above levels existing without the project.**
Impact NOISE-3	**Result in a substantial permanent increase in ambient noise levels above levels existing without the project.**

Construction

Grading and construction activities associated with the proposed 2018 RTP/SCS transportation and land use projects could intermittently and temporarily generate noise levels above ambient background levels. While these noise levels could be above levels allowable for operational activities in many general plans and noise ordinances, most general plans and noise ordinances make allowances for construction noise and provide limits on hours of activity rather than specific noise levels. Noise levels in the immediate vicinity of construction sites, including adjacent sensitive receptors, would increase substantially, sometimes for extended duration. Generally, construction related noise impacts would be short-term and localized in nature. Further, during construction, ground clearing, grading, structural, and other noise-

generating activities would occur at project sites between the hours designated in accordance with the applicable jurisdiction's noise ordinance and any additional applicable plans or standards. **Table 4.8-8, Types and Duration of Noise Generated from Transportation Projects,** presents examples of the various types of noise that occur during construction of transportation projects.

For land use development projects, the range of potential impacts depends on the nature, size and location of each project. **Table 4.8-10, Outdoor Construction Noise: Land Use Development** (below)**,** provides noise levels associated with different phases of construction typically associated with land use construction.

Table 4.8-8
Types and Duration of Noise Generated from Construction of Transportation Projects

Project Type	Noise Levels[a]			Duration		
	High	Medium	Low	Extended	Medium	Short
FREEWAYS AND ARTERIALS						
Arterials/Interchanges	X			X		
Freeway – Mixed-flow	X			X		
HOV Connector	X			X		
Reconfigure Ramp	X			X		
Replace Overcrossing	X			X		
Capacity Enhancement Facilities	X			X		
Widen Underpass (4-6 lanes)	X			X		
Auxiliary Lanes		X			X	
Interchange Addition		X			X	
Bikeways		X				X
Capacity Enhanced Arterial		X				X
Interchange Improvement		X			X	
Park & Ride		X				X
Roadway Operations & Maintenance			X			X
Smart Street Improvements			X			X
Transit						
Commuter Rail	X			X		
High Speed Rail	X			X		
Inter-city Rail	X			X		
Transit Center		X			X	
Grade Crossing			X			X
Intelligent Transportation Systems			X			X
Rail Improvement	X			X		
Rail Tunnel Improvement	X			X		

Source: Impact Sciences. 2018.
Note: Project-specific impacts depend on location and location of sensitive receptors. This table provides a general assessment of noise-generated by different types of impacts irrespective of the relationship to sensitive receptors.
*[a] Projects included in the "high" category are those that use the nosiest equipment (i.e., impact devices), those in the medium range use a range of construction equipment that generates engine noise operating simultaneously but no impact devices, projects in the low range are comprised of minor improvements that would not require either multiple pieces of equipment or impact devices (see **Table 4.8-4** for general equipment noise ranges).*

Table 4.8-9, Sensitive Receptors within 0.25 mile of Proposed Transportation Projects, shows the number of existing sensitive receptors located within 0.25 miles of transportation projects under the No Project Alternative and 2018 RTP/SCS. It is unlikely that there would be audible noise from transportation projects over 0.25 miles from the project site.

Table 4.8-9
Sensitive Receptors within 0.25 mile of Proposed Transportation Projects

Sensitive Receptors	No Project (2042)	2018 RTP (2042)
Schools	53	63
Hospitals	7	8
Residential Households	32,894	35,015

Source: TCAG, 2018; TCAG Model.

As shown in **Table 4.8-9,** noise-sensitive land uses are located near transportation projects anticipated to occur under the 2018 RTP/SCS, including schools, hospitals, and residences (transportation projects anticipated to occur without the 2018 RTP would also impact adjacent land uses). In addition to these receptors affected by transportation project construction, there would be sensitive receptors located within 0.25 miles of future land use construction projects. [15]

Table 4.8-10
Outdoor Construction Noise: Land Use Development

Construction Phase	Noise Level at 50 Feet (dBA, Leq)	Noise Level at 50 Feet with Mufflers (dBA, Leq)
Ground Clearing	84	82
Grading/Excavation	89	86
Foundations	78	77
Structural	85	83
Finishing	89	86

Source: USEPA, Noise from Construction Equipment and Operations, Building Equipment and Home Appliances, PB 206717, 1971.

Impacts to sensitive receptors resulting from the construction of transportation and development projects would depend on several factors, such as the type of project proposed, adjacent land use, and duration of proposed construction activities. Based on the above analysis, the 2018 RTP/SCS would substantially increase construction noise levels, and this impact would be significant. **Mitigation Measure MM-NOI-1(a)** would reduce this impact, though not to less-than-significant levels.

Operation

Operational noise is noise that occurs once a project finishes construction and begins to operate. This type of noise impact can generally be broken down into two types of noise: stationary and mobile. Stationary

15 It is too speculative to try to quantify the number of receptors close to specific land use projects, since no specific projects are proposed in the SCS.

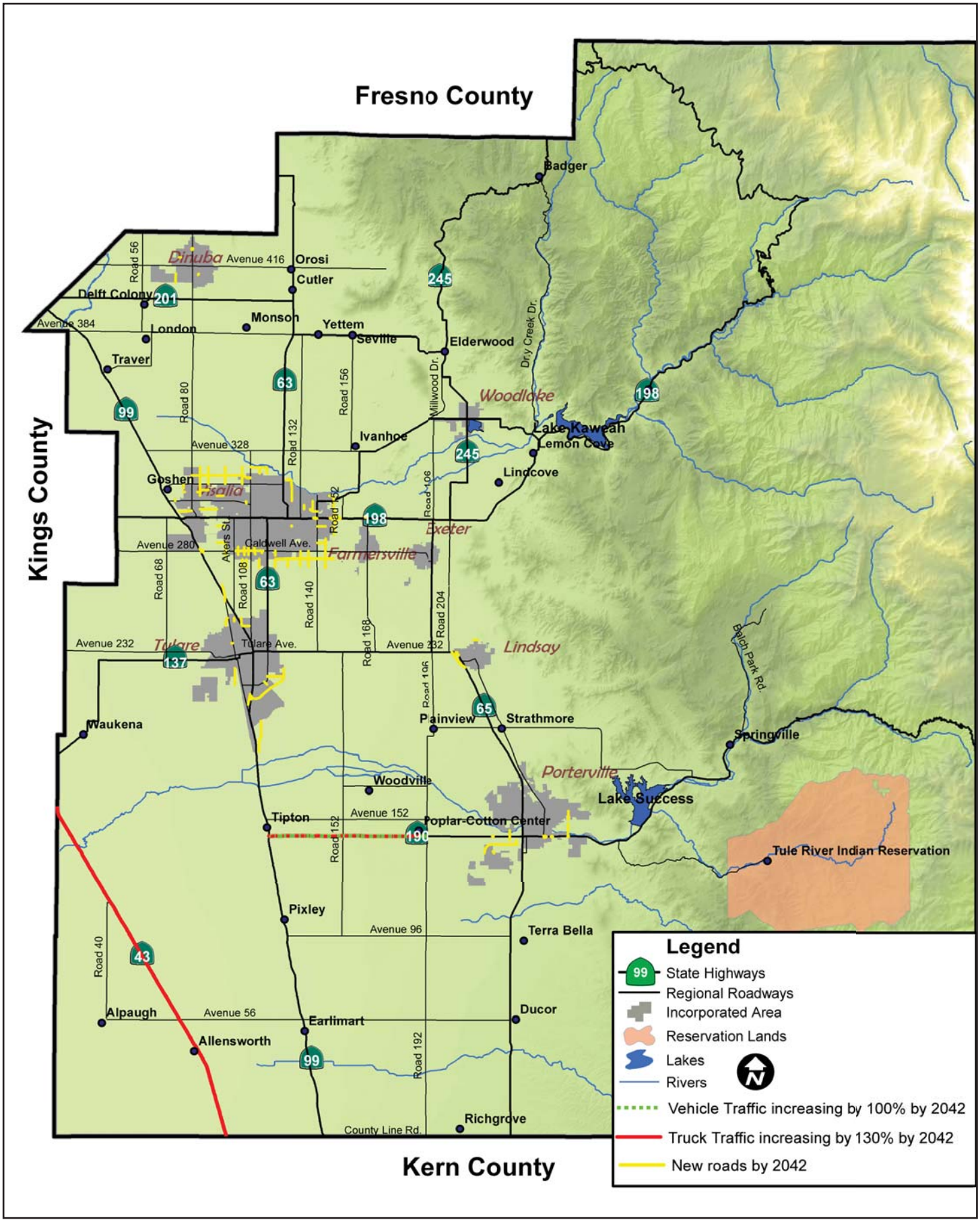
noise is anything that creates noise but does not leave the subject property. Mobile noise is anything that travels (e.g., motor vehicles coming and going from a property).

Transportation Projects

Long-term operation of transportation projects (including new highways, highway and arterial road widenings, new transit corridors, increased frequency along existing transit corridors, additional freight tracks/service) could generate noise levels in excess of standards established in applicable local general plan(s) and/or noise ordinance(s), depending on the locations of the receptors.

Caltrans identifies a noise abatement criterion (NAC) of 67 dBA where sensitive receptors are located adjacent to freeways and collectors/arterials and, as such, any perceptible increase (3 dBA or greater) above this noise level is subject to abatement measures (for Caltrans projects). Most heavily travelled roadways meet this criterion.

For purposes of this EIR, an increase of 3 dBA is considered a significant impact. In general an increase of 3 dBA is perceptible to the average human ear. In order to assess where noise levels could increase by 3 dBA or more, the TCAG model was used to identify roadway segments where one or more of the following conditions could occur: 1) truck (medium and heavy-duty) volume would increase 130 percent from existing conditions; and/or 2) truck (medium and heavy-duty) volume would increase by 100 percent with an increase in other vehicles of 50 percent and/or 3) total traffic volume would increase by 100 percent. These roadway segments are identified in **Figure 4.8-3, Substantial Increases in Roadway Noise No Project Alternative,** and **Figure 4.8-4, Substantial Increases in Roadway Noise 2018 RTP/SCS**.

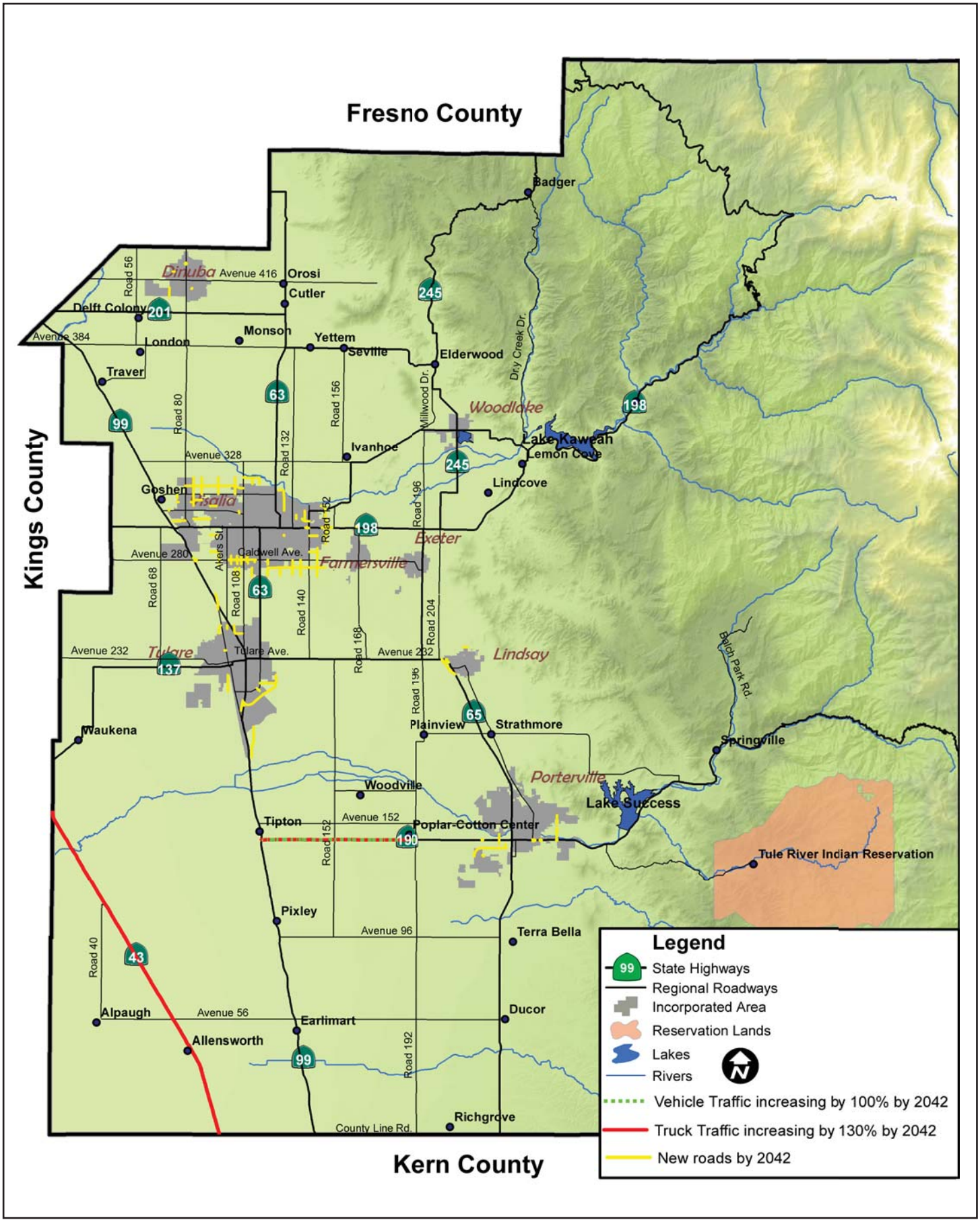


SOURCE: Tulare County Association of Governments, 2018

FIGURE **4.8-3**

IMPACT SCIENCES

Substantial Increases in Roadway Noise No Project Alternative



SOURCE: Tulare County Association of Governments, 2018

FIGURE **4.8-4**

Substantial Increases in Roadway Noise 2018 RTP/SCS

IMPACT SCIENCES

1290.001•04/18

Increases in noise levels would occur adjacent to transportation facilities, including highways, freeways, major arterials, truck-climbing lanes, freeway interchanges, passenger rail projects and freight rail projects. These projects are subject to federal and local environmental review and would be required to abate increases in noise levels in accordance with applicable criteria. Many development projects, especially larger projects, would receive project-specific environmental review and would be required to adhere to the local general plans and noise ordinances, as part of the design and approval process for each facility.

Land Use Development

The 2018 RTP/SCS is based on a preferred land use and transportation scenario which lays out a pattern of future growth, emphasizing infill and mixed-use development. This land use scenario would shift a greater share of future residential and commercial growth within urban areas and near existing transit corridors. In addition to roadway noise, other potential sources of noise exposure include: railway or bus operations, commercial activity, and industrial activity.

Noise would also increase adjacent to new bus and rail corridors where there were previously no buses or trains. For example, ambient noise at sensitive receptors near the proposed Tulare Transit Center Expansion project could increase due to increased bus activity. Increased noise levels would only be relevant where adjacent sensitive receivers are located along existing or proposed corridors. Crossings also use audible warning signals that could impact nearby residents. Increases in bus and rail traffic could also lead to more horns and/or whistles at crossings near residential areas, which is a source of annoyance, especially at night or in early morning or evening.

New noise sensitive development in infill areas could be exposed to noise levels exceeding standards established in local general plans or noise ordinances.

Conclusion Operation

Operational ambient noise levels for sensitive receptors could increase due to implementation of the 2018 RTP/SCS. This includes mobile source noise, such as noise emanating from motor vehicle traffic, as well as stationary noise from commercial and industrial activity. Based on the above analysis, the 2018 RTP/SCS would substantially increase operational noise impacts, and this impact would be significant. **Mitigation Measure MM-NOI-1(b)** would reduce this impact, though not to less than significant levels.

Level of Significance Before Mitigation

Significant.

Mitigation Measures

MM-NOISE-1(a): Consistent with the provisions of Section 15091 of the *State CEQA Guidelines,* TCAG has identified mitigation measures capable of avoiding or reducing significant construction noise impacts that are within the jurisdiction and responsibility of local agencies (land use projects) and implementing agencies (transportation projects). Where the Lead Agency has identified that a project has the potential for significant effects, the Lead Agency can and should consider mitigation measures to avoid or reduce construction noise impacts. Such measures include, but are not limited to, the following:

- Equipment and trucks used for project construction can and should utilize the best available noise control techniques (e.g., improved mufflers, equipment redesign, use of intake silencers, ducts, engine enclosures, and acoustically attenuating shields or shrouds), wherever feasible.

- Tools (e.g., jack hammers, pavement breakers, and rock drills) used for project construction can and should be hydraulically or electrically powered to avoid noise associated with compressed air exhaust from pneumatically powered tools. However, where use of pneumatic tools is unavoidable, an exhaust muffler on the compressed air exhaust should be used; this muffler can lower noise levels from the exhaust by up to about 10 dBA. External jackets on the tools themselves should be used, if such jackets are commercially available, and this could achieve a further reduction of 5 dBA. Quieter procedures should be used, such as drills rather than impact equipment, whenever such procedures are available and consistent with construction procedures.

- Stationary noise sources during construction activities (e.g., noise generators and staging areas) can and should be located as far from adjacent sensitive receptors as possible and they should be muffled and enclosed within temporary sheds or use other measures as determined by the Lead Agency (or other appropriate government agency) to provide equivalent noise reduction.

- A procedure and phone numbers for notifying the Lead Agency staff and local Police Department of noise complaints; (during regular construction hours and off-hours).

- A sign posted on-site pertaining with permitted construction days and hours and complaint procedures and who to notify in the event of a problem. The sign should also include a listing of both the Lead Agency and construction contractor's telephone numbers (during regular construction hours and off-hours).

- The designation of an on-site construction complaint and enforcement manager for the project.

- Notification of neighbors and occupants within 300 feet of the project construction area at least 30 days in advance of extreme noise generating activities about the estimated duration of the activity.

- A preconstruction meeting can and should be held with the job inspectors and the general contractor/on-site project manager to confirm that noise measures and practices (including construction hours, neighborhood notification, posted signs, etc.) are completed.

- Use of portable barriers in the vicinity of sensitive receptors during construction.

- Projects that require pile driving or other construction noise above 90 dBA in proximity to sensitive receptors, should reduce potential pier drilling, pile driving and/or other extreme noise generating construction impacts greater than 90 dBA; a set of site-specific noise attenuation measures should be completed under the supervision of a qualified acoustical consultant.

- Implement noise control at the receivers by temporarily improving the noise reduction capability of adjacent buildings (for instance by the use of sound blankets), and implement if such measures are feasible and would noticeably reduce noise impacts**.**

- Monitor the effectiveness of noise attenuation measures by taking noise measurements.

- Maximize the distance between noise-sensitive land uses and new roadway lanes, roadways, rail lines, transit centers, park-and-ride lots, and other new noise-generating facilities.

- Construct sound reducing barriers between noise sources and noise-sensitive land uses.

MM-NOISE-1(b): Consistent with the provisions of Section 15091 of the *State CEQA Guidelines*, TCAG has identified mitigation measures capable of avoiding or reducing significant operational noise impacts that are within the jurisdiction and responsibility of local agencies (land use projects) and implementing agencies (transportation projects). Where the Lead Agency has identified that a project has the potential for significant effects, the Lead Agency can and should consider mitigation measures to avoid or reduce operational noise impacts. Such measures include, but are not limited to, the following:

- Stationary noise sources can and should be located as far from adjacent sensitive receptors as possible and they should be muffled and enclosed within temporary sheds, incorporate insulation barriers, or use other measures as determined by the Lead Agency (or other appropriate government agency) to provide equivalent noise reduction.

- Implement, to the extent feasible and practicable, speed limits and limits on hours of operation of rail and transit systems, where such limits may reduce noise impacts.

- Utilize techniques such as grade separation, buffer zones, landscaped berms, dense plantings, sound walls, reduced-noise paving materials, and traffic calming measures.
- Maximize the distance of new route alignments from sensitive receptors.
- Locate transit-related passenger stations, central maintenance facilities, decentralized maintenance facilities, and electric substations away from sensitive receptors to the maximum extent feasible.
- Use land use measures such as zoning, site design, and buffers to ensure that future development is noise compatible with adjacent transportation facilities and land uses.

Level of Significance After Mitigation

Because this PEIR evaluates impacts at the programmatic level, all project circumstances are not foreseeable and these mitigation measures may not be feasible or effective for some projects. Therefore, even with implementation of **Mitigation Measures MM-NOISE-1(a) and MM-NOISE-1(b)**, impacts would remain significant and unavoidable. No additional feasible mitigation measures are available to reduce significant and unavoidable impacts beyond those identified in this PEIR.

Impact NOISE-4 Exposure of persons to or generation of excessive groundborne vibration or groundborne noise levels.

Noise and vibration impacts from the construction and operation of transportation projects and land use development could generate excessive groundborne vibration and groundborne noise levels. Construction-related (and to a lesser extent operational) vibration has the potential to damage structures, cause cosmetic damage (e.g., crack plaster), or disrupt the operation of vibration sensitive equipment. Heavy construction operations can cause substantial vibration in close proximity to the source. Vibration can also be a source of annoyance or cause health affects (depending on the severity and duration of the vibrations and the building/structure materials) to individuals who live or work close to vibration-generating activities.

Construction

Typical project construction activities, such as the use of jackhammers, other high-power or vibratory tools, compactors, and tracked equipment, generate substantial vibration (i.e., greater than 0.2 inch per second PPV) in the immediate vicinity, typically within 15 feet of equipment. Typical construction activities are restricted to daytime hours with less potential to impact residents, although sensitive receptors can still be affected. In general, perceptible vibration can be kept to a minimum and not result

in human annoyance or structural damage because of the short distance associated with vibration impacts and the limited duration of most construction activities.

Depending on the proximity of existing structures to each potential construction site, the structural soundness of the affected buildings, and the methods of construction used, vibration levels caused by foundation work with a substantial impact component could be high enough to be perceptible within 100 feet, and may be high enough to damage existing older structures within 50 feet. Examples of this type of construction include the use of impact pile driving, blasting, rock or caisson drilling, and/or site excavation or compaction. Specific construction activities, such as impact pile driving, often result in higher levels of vibration. Pile driving has the potential to generate the highest vibration levels and is the primary concern for structural damage, especially to older buildings, when it occurs within 50 feet of structures. Vibration levels generated by pile driving activities would vary depending on soil conditions and what the structure if made of. Impact pile driving activities may result in short-term annoyance.

Operations

With respect to ongoing vibrations associated with expected land use changes under the 2018 RTP/SCS, light industrial and commercial operations have, on occasion, been known to utilize equipment or processes in the manufacture and distribution of materials that have a potential to generate vibrations. However, vibrations found to be excessive for human exposure that are the result of a manufacturing process or industrial machinery are generally addressed from an occupational health and safety perspective. The residual vibrations from industrial processes or machinery are typically of such low amplitude that they quickly dissipate into the surrounding soil and are rarely perceivable at the surrounding land uses.

Distribution of materials to and from industrial and commercial land uses can have the potential to generate more substantial levels of vibration, which can affect nearby sensitive receptors, than that of the mechanical equipment. Heavy trucks used for delivery and distribution of materials to and from industrial and commercial sites generally operate at very low speeds while on the industrial or commercial site. Therefore, the vibration induced by heavy truck traffic at industrial or commercial land uses would not be perceptible at distances greater than 25 feet (typical distance from roadway centerline to edge of roadway right-of-way for a single-lane road). Vehicles traveling on a smooth roadway are rarely, if ever, the source of perceptible ground vibration. However, discontinuities in roadway pavement often develop as the result of settling of pavement sections, cracking, and faulting. When this occurs, vehicles passing over the pavement generate vibration. In most cases, only heavy trucks are capable of generating perceptible vibration. Trucks traveling over pavement discontinuities may also rattle and

make noise, which tends to make the event more noticeable when the ground vibration generated may only be barely noticeable. [16]

Based on the above analysis, sensitive receptors could be exposed to excessive groundborne vibration levels as a result of 2018 RTP/SCS implementation, for both temporary construction and ongoing operations, and this impact would be significant. Mitigation is required; **Mitigation Measure MM-NOISE-4(a)** would also address vibration.

Level of Significance Before Mitigation

Significant.

Mitigation Measures

MM-NOISE-4(a): Consistent with the provisions of Section 15091 of the *State CEQA Guidelines*, TCAG has identified mitigation measures capable of avoiding or reducing significant vibration impacts that are within the jurisdiction and responsibility of local agencies (land use projects) and implementing agencies (transportation projects). Where the Lead Agency has identified that a project has the potential for significant effects, the Lead Agency can and should consider mitigation measures to avoid or reduce vibration impacts. Such measures include, but are not limited to, the following:

- Retain a structural engineer or other appropriate professional to determine threshold levels of vibration and cracking that could damage any adjacent historic or other structure subject to damage, and design means and construction methods to not exceed the thresholds.
- Where possible smooth pavement to eliminate the discontinuities.
- Where feasible, use soil mix wall for excavation.
- Incorporate a comprehensive construction vibration specification into all construction bid documents.
- Require contractor to assess potential for damage to buildings within 100 feet of a tunnel boring.
- Require contractor to perform a physical survey to document existing condition of a building that might incur damage.

16 Caltrans, *Transportation and Construction Vibration Guidance Manual*, September 2013

- If pile driving and/or other vibration-generating construction activities are to occur within 60 feet of a historic structure whose integrity would be impaired by exceeding the vibration threshold for historic structures, implement measures to reduce vibration impacts, including but not limited to:

  – Retain a structural engineer or other appropriate professional to determine threshold levels of vibration and cracking that would damage any historic structure, and design construction methods to not exceed the thresholds.

  – Require groundborne vibration monitoring of nearby historic structures. Implement monitoring program to detect ground settlement or lateral movement of structures in the vicinity of pile-driving activities and identify corrective measures to be taken should monitored vibration levels indicate the potential for vibration damage to historic structures.

  – Require contractor to assess potential damage to buildings within 200 feet of areas where excavation requires the use of driven piles either by impact or vibratory methods. Smooth pavement to eliminate discontinuities that cause vibration from vehicle operations

Level of Significance After Mitigation

Because this PEIR evaluates impacts at the programmatic level, all project circumstances are not foreseeable and these mitigation measures may not be feasible or effective for some projects. Therefore, even with implementation of **Mitigation Measure MM-NOISE-4(a)**, impacts would remain significant and unavoidable. No additional feasible mitigation measures are available to reduce significant and unavoidable impacts beyond those identified in this PEIR.

Impact NOISE-5 **Exposure of people residing or working in the project area to excessive noise levels if the project is located within an area covered by an airport land use plan, or where such a plan has not been adopted, within 2 miles of a public airport or public use airport**

Impact NOISE-6 **Exposure of people residing or working in the project area to excessive noise levels if the project is located in the vicinity of a private airstrip.**

Some land use projects under the 2018 RTP/SCS could be located within an area covered by an airport land use plan or in the vicinity of a private airstrip. However, existing plans and regulations, including the Tulare County Comprehensive Airport Land Use Plan (ALUP) and Federal Aviation Administration regulation of airports and airstrips, would minimize noise exposure for people residing or working in the project area. Therefore, implementation of the 2018 RTP/SCS would not expose people residing or

working in the project area to excessive noise levels if an individual transportation or development project were located within an area covered by the ALUP or in the vicinity of a private airstrip.

Level of Significance Before Mitigation

Less than significant.

Mitigation Measures

None required.

Level of Significance After Mitigation

The noise impact to people residing or working in a project area located within an area covered by the ALUP or in the vicinity of a private airship would be less than significant.

4.8.6 CUMULATIVE EFFECTS

The 2018 RTP/SCS is a cumulative plan by design that integrates transportation investments with land use strategies for an entire region. As such, the analysis of noise and vibration impacts presented above is inherently a cumulative analysis compliant with the requirements of CEQA. However, the 2018 RTP/SCS would contribute to additional noise and vibration impacts beyond Tulare County. The cumulative analysis impact area for noise and vibration impacts consists of Tulare County and the three San Joaquin Valley counties adjoining the TCAG region: Kern, Kings, and Fresno.

The 2018 RTP/SCS includes transportation projects and land use strategies that will shape the region over the next 24 years. These changes would include the extension of transportation and related infrastructure that would impact noise. Some transportation projects could facilitate access, not only within the County, but also to areas outside the region. In addition, Plan projects would connect with projects outside the region, thereby contributing to the need for construction of transportation infrastructure outside the region. This additional infrastructure outside the County could facilitate development outside the region.

Construction noise and vibration impacts are generally site specific. The 2018 RTP/SCS would facilitate movement in other regions, which could increase noise and vibration levels outside the County. The proposed 2018 RTP/SCS encompasses all development (both transportation and land use changes) that would occur in the region through 2042.

Within the cumulative analysis impact area, implementation of the 2018 RTP/SCS, combined with cumulative development outside the region, has the potential to result in noise and vibration impacts

occurring outside Tulare County. As discussed above, implementation of the 2018 RTP/SCS would have significant impacts related to increases in noise and vibration impacts. The 2018 RTP would add to impacts from RTP/SCS plans in adjacent counties.

The 2018 RTP/SCS contribution to these impacts would be cumulatively considerable. Implementation of **Mitigation Measures NOI-1(a), NOI-1(b), and NOI-4** would reduce the 2018 RTP/SCS contribution to cumulative noise and vibration impacts; however, impacts from the 2018 RTP/SCS would remain cumulatively considerable.

Implementation of the 2018 RTP/SCS would not significantly expose people residing or working in the project area to excessive noise levels if an individual transportation or land use project were located within an area covered by the ALUP or in the vicinity of a private airstrip; the 2018 RTP/SCS would not result in a cumulatively considerable contribution to such impacts.

4.9 POPULATION & HOUSING

This section describes the current population, housing, and employment for Tulare County and identifies the impacts of the 2018 RTP/SCS on these three factors. In addition, this PEIR provides mitigation measures to reduce identified impacts. Residual impacts after mitigation are also identified. The data used in this section represents TCAG's most recent available data for population, housing, and employment information.

4.9.1 ENVIRONMENTAL SETTING

4.9.1.1 Existing Population, Housing, and Employment

Population

Population in Tulare County includes an estimated 471,842 people (California DOF), with the cities of Visalia, Tulare, and Porterville representing the largest population centers. The majority of people live on the eastern side of the County, close to major roadways such as SR 99, SR 190, and SR 198.

The Tulare region grew by almost 68,000 persons since 2005 and is California's eighteenth most populated of 58 counties.[1] TCAG estimates that by the 2018 RTP/SCS horizon year of 2042, Tulare County's population will be approximately 604,969 as seen in **Table 4.9-1, Population for Tulare County and Cities**.[2]

The California Department of Finance (DOF) estimated that population in Tulare County has grown at an average annual compounded rate of just over 1 percent since 2010, slightly higher than the rate for California as a whole (0.9 percent).[3]

Over the next 24 years, growth in the Tulare region could vary widely based on several factors, including spillover from California's mega-regions, water availability, employment opportunities, housing costs, interest rates, air quality regulations, availability of land, and land use regulations.

In the near term, natural increases will continue to fuel population growth as more people are born than die. At the same time, "baby boomers" are retiring, setting the stage for conversion of existing vacation

1 Tulare County Association of Governments. 2018 RTP/SCS.

2 Tulare County Association of Governments. 2018 RTP/SCS.

3 California Department of Finance. http://www.dof.ca.gov/Forecasting/Demographics/Estimates/E-2/2010-16/index.html. Accessed October, 2017.

homes in the mountain areas to primary residences. The increase of telecommuting workers will also allow more remote locations to become primary residences.

Table 4.9-1
Population for Tulare County and Cities

City/Region	Census 1980	Census 1990	Census 2000	Census 2010	Forecast 2020	Forecast 2030	Forecast 2040	Forecast 2042	1980-2000 Average Annual Historic Growth		2010-2040 Average Annual Forecast Growth	
									Rate	Increase	Rate	Increase
Dinuba	9907	12743	16844	21453	22994	24539	26086	26392	3.88%	11,546	0.72%	4939
Exeter	5606	7276	9168	10334	11363	12783	14214	14500	2.81%	4,728	1.26%	4166
Farmersville	5544	6235	8737	10588	12880	13812	14746	14931	3.03%	5,044	1.28%	4343
Lindsay	6936	8338	10297	11768	14597	15815	17038	17281	2.32%	4,832	1.46%	5513
Porterville	19707	29563	39615	54165	65607	73189	80828	82354	5.83%	34,458	1.63%	28189
Tulare	22530	33249	43994	59278	71384	80906	90512	92433	5.44%	36,748	1.75%	33155
Visalia	49729	75636	91877	124442	142516	156940	171451	174346	5.01%	74,713	1.25%	49904
Woodlake	4343	5678	6651	7279	8519	9455	10397	10585	2.25%	2,936	1.42%	3306
Unincorporated Tulare County	121436	133203	141738	142872	138434	153702	169077	172147	3.92%	21436	0.64%	29275
Tulare County (Total)	245738	311921	368921	442179	488293	541140	594348	604969	2.66%	196,441	1.15%	162790

Sources:
California Department of Finance. Demographic Reports. Historical Census Data: Historical Census Populations of Counties and Incorporated Cities in California, 1850–2010. http://www.dof.ca.gov/Reports/Demographic_Reports/ Forecast provided by TCAG using DOF projections.

Employment

According to the California Employment Development Department (EDD), Tulare County unemployment rate has steadily declined since 2010 from a high of 19.5 percent to a low of 8.8 percent in September 2017, rising again in late 2017. Wages have also steadily increased during the same time period by approximately $14,000. The occupations with the fastest growing job growth by percent of change in the Visalia-Porterville Metropolitan area for 2014-2014 according to the EDD are as follows:

Table 4.9-2
2014-2024 Fastest Growing Occupations, Visalia-Porterville Metropolitan Area

Occupational Title	Estimated Employment 2014**	Projected Employment 2024	Percent Change 2014-2024	Annual Average Percent Change
Telecommunications Equipment Installers and Repairers, Except Line Installers	210	320	52.4%	5.2%
Plumbers, Pipefitters, and Steamfitters	380	540	42.1%	4.2%
Machinists	280	390	39.3%	3.9%
Agricultural Equipment Operators	1,020	1,410	38.2%	3.8%
Construction Laborers	870	1,200	37.9%	3.8%
Electricians	350	480	37.1%	3.7%
Cooks, Restaurant	560	760	35.7%	3.6%
First-Line Supervisors of Construction Trades and Extraction Workers	320	430	34.4%	3.4%
Farm Equipment Mechanics and Service Technicians	260	340	30.8%	3.1%
Personal Care Aides	2,420	3,160	30.6%	3.1%

Sources: California Employment Development Department (EDD). http://www.labormarketinfo.edd.ca.gov/data/occupations-in-demand.html

Housing

Nearly 20,510 housing units were added to the County between 2005 and 2017. This brought the housing stock in the County to 148,898 units. Population growth exceeded household growth, and the average persons per household increased slightly from 3.15 in 2005 to 3.17 in 2017. This was in contrast to a decade-to-decade drop in household size experienced by the nation overall. [4]

4 Tulare County Association of Governments, 2018 RTP/SCS

Demographics

In 2016, 63 percent of the population identified as Hispanic or Latino, 30.1 percent of the population identified as White alone, 1.3 percent of the population identified as Black, 3.2 percent of the population identified as Asian. Net migration (people moving to the County minus those moving away) was negative between the years 2011 and 2016. The population increased at a rate of 0.9 percent due to the natural increase (new births).[5] **Table 4.9-3**, **Table 4.9-4**, and **Table 4.9-5** present age, race and demographics from the US Census Bureau:

Table 4.9-3
Tulare County 2016 Sex and Age Demographics (US Census)

Subject	Estimate	Percent
Sex and Age		
Total Population	455,769	
Male	227,963	50
Female	227,806	50
Under 5 Years	39,815	8.7
5 to 9 years	41,120	9.0
10 to 14 years	39,690	8.7
15 to 19 years	37,238	8.2
20 to 24 years	34,807	7.6
25 to 34 years	63,782	14.0
35 to 44 years	56,100	12.3
45 to 54 years	52,024	11.4
55 to 59 years	23,170	5.1
60 to 64 years	20,531	4.5
65 to 74 years	27,538	6.0
75 to 84 years	13,982	3.1
85 years and older	5,972	1.3
Median Age	30.4	

Source:
US Census Bureau 2016. www.factfinder.census.gov

5 Department of Transportation, Tulare Economic Forecast (2017), http://www.dot.ca.gov/hq/tpp/offices/eab/socio_economic_files/2017/Tulare.pdf

Table 4.9-4
Tulare County 2016 Race Demographics (US Census)

Subject	Estimate	Percent
Race		
Total Population	455,769	
One Race	445,022	96.8
Two or More Races	14,747	3.2
One Race	441,022	96.8
White	363,181	79.7
Black or African American	7,261	1.6
American Indian and Alaska Native	5,847	1.3
Cherokee tribal grouping	315	0.1
Chippewa tribal grouping	2	0.0
Navajo tribal grouping	275	0.1
Sioux tribal grouping	66	0.0
Asian	16,004	3.5
Asian Indian	1,043	0.2
Chinese	1,434	0.3
Filipino	6,796	1.5
Japanese	503	0.1
Korean	639	0.1
Vietnamese	486	0.1
Other Asian	5,103	1.1
Native Hawaiian /Other Pacific Islander	703	0.2
Native Hawaiian	168	0.0
Guamanian or Chamorro	131	0.0
Samoan	71	0.0
Other Pacific Islander	333	0.1
Some Other Race	48,026	10.5
Two or More Races	14,747	3.2
White and Black or African American	1,736	0.4
White and American Indian and Alaska Native	3,355	0.7
White and Asian	2,164	0.5
Black or African American and American Indian and Alaska Native	112	0.0

Source: US Census Bureau 2016. www.factfinder.census.gov

Table 4.9-5
2016 Tulare County Race Demographics (Hispanic or Latino)

Subject	Estimate	Percent
Hispanic or Latino and Race		
Total Population	455,769	
Hispanic or Latino (any race)	287,144	63.0
Mexican	277,109	60.8
Puerto Rican	1,215	0.3
Cuban	614	0.1
Other Hispanic or Latino	8,206	1.8
Not Hispanic or Latino	168,625	37.0
White Alone	137,157	30.1
Black or African American Alone	5,866	1.3
American Indian and Alaska Native alone	2,923	0.6
Asian Alone	14,426	3.2
Native Hawaiian and other Pacific Islander Alone	593	0.1
Some other race alone	889	0.2
Two or More Races	6,771	1.5
Two or More Races including some other race	223	0.0
Two or more races excluding some other race and three or more races	6,548	1.4

Source: US Census Bureau 2016. www.factfinder.census.gov

4.9.2 REGULATORY FRAMEWORK

4.9.2.1 Federal

Federal Transportation Planning Regulations, Title 23 CFR 450.322(e)

This federal regulation requires that in development of the regional transportation plan, that the Metropolitan Planning Organization (MPO) validate data utilized in preparing other existing modal plans (such as transit providers long-range plans) for providing input to the RTP. In updating the plan, the MPO must base the update on the latest available estimates and assumptions for population, land use, travel, employment, congestion, and economic activity. The MPO must approve transportation plan contents and supporting analyses produced by a transportation plan update.

Federal Uniform Act

The Uniform Relocation Assistance and Real Property Acquisition Policies Act of 1970 ("Uniform Act,"42 USC sections 4601 *et seq.*) is a federal law that establishes minimum standards for federally-funded programs and projects that require the acquisition of real property (real estate) or displacement of persons from their homes, businesses, or farms. The Uniform Act's protections and assistance apply to the acquisition, rehabilitation, or demolition of real property for federal or federally-funded projects. FHWA regulations implementing the Uniform Act are found at 49 CFR Part 24.

4.9.2.2 State

SB 375- The Sustainable Communities and Climate Protection Act of 2008

Senate Bill 375 (SB 375) focuses on aligning transportation, housing, and other land uses to achieve regional greenhouse gas (GHG) emission reduction targets established under AB 32.

Among other things, SB 375 imposes a number of requirements on the regional housing needs process. The Regional Housing Needs Allocation (RHNA) must allocate housing units within the region consistent with the development pattern included in the SCS. SB 375 requires the RHNA to be based upon population projections by the Department of Finance and regional population forecasts used in preparing the RTP.

Existing law requires local governments to adopt a Housing Element as part of their General Plan. Unlike the rest of the General Plan, where updates sometimes occur at intervals of 20 years or longer, under previous law, the Housing Element was required to be updated as frequently as needed, and no less than every five years. Under SB 375, this period was lengthened to eight years and timed so that the Housing Element period begins no less than 18 months after adoption of the RTP, to encourage closer coordination between housing and transportation planning. SB 375 also changes the implementation schedule required in each Housing Element. Previous law required the Housing Element to contain a program which set forth a five-year schedule to implement the goals and objectives of the Housing Element. SB 375 instead requires this schedule of actions to occur during the eight-year Housing Element planning period, and requires each action have a timetable for implementation.

California Department of Housing and Community Development

Certain provisions in the California Code require local government plans to address the existing and projected housing needs of all economic segments of the community through their housing elements (see, e.g., California Code Section 65580 *et seq.*). The housing element is one of seven state-mandated elements

that every General Plan must contain, and it is required to be updated every eight years and determined legally adequate by the state. The purpose of the housing element is to identify the community's housing needs, state the community's goals and objectives with regard to housing production, rehabilitation, and conservation to meet those needs. In addition, the Housing Element defines the related policies and programs that the community will implement in order to achieve the stated goals and objectives.

California Relocation Assistance Act

The California Relocation Assistance Act (California Code section 7260 *et seq.*) establishes uniform policies to provide for the fair and equitable treatment of people displaced from their homes or businesses as a direct result of state and/or local government projects or programs. The California Relocation Assistance Act requires that comparable replacement housing be made available to displaced persons within a reasonable period of time prior to the displacement. Displaced persons or businesses are assured payment for their acquired property at fair market value. Relocation assistance in the form of advisory assistance and financial benefits would be provided at the local level. This includes aid in finding a new home location, payments to help cover moving costs, and additional payments for certain other costs.

Homeowners and Private Property Protection Act

In 2008, California voters approved Proposition 99, the Homeowners and Private Property Protection Act, which amended the California Constitution so that local governments are prohibited from using eminent domain authority to acquire an owner-occupied residence for the purposes of conveying it to a private recipient, with limited exceptions. Proposition 99 applies only to owner-occupied residences.

Regional Housing Needs Assessment

State law requires preparation of a Regional Housing Needs Assessment (RHNA) allocation plan. The RHNA allocation quantifies the regional need for housing that is allocated to each jurisdiction for a certain planning period (e.g., the current RHNA cycle period is from 2014 to 2021). Communities then plan, consider, and decide how they will address this need through the process of completing the Housing Elements of their General Plans. The RHNA allocation plan does not necessarily encourage or promote growth, but rather allows communities to anticipate growth, so that they can grow in ways that enhance quality of life, improve access to jobs, transportation and housing, and not adversely impact the environment.

This region's RHNA allocation plan is developed periodically by TCAG, as mandated by state law, to coincide with the region's schedule for preparing Housing Elements. It consists of two measurements of

housing need: (1) existing need; and (2) future need for very-low income, low-income, moderate, and above-moderate income categories.

The existing need assessment is based on data from the most recent US Census and DOF, which is analyzed to measure ways in which the housing market is not meeting the needs of current residents. Some of the factors in this assessment include the number of low-income households paying more than 30 percent of their income for housing, as well as identifying any severe overcrowding.

The future need for housing is determined primarily by the forecasted growth in households in a community, based on historical growth patterns, job creation, household formation rates, and other factors. Using this information, TCAG estimates how many households will be added to each community over the projection period. The housing need for new households is then adjusted to account for an ideal level of vacancy needed to promote housing choice, maintain price competition, and encourage acceptable levels of housing upkeep and repair. Total "construction need" for RHNA numbers is comprised of three components: (1) the number of housing units needed to accommodate future household growth; (2) an additional allowance for vacant units to ensure a healthy housing market; and (3) a further additional allowance to account for units that will be demolished, converted to non-housing uses or otherwise removed from the housing stock.

Finally, the RHNA allocation plan considers how each jurisdiction might grow in ways that will decrease the concentration of low-income households in certain communities. The need for new housing is distributed among income groups so that each community moves closer to the regional average income distribution.

4.9.2.3 Local

General plans can be described as a city or county's "blueprint" for future development. They represent the community's view of its future; a constitution made up of the goals and policies upon which the planning commission and the city council and/or board of supervisors will base their land use decisions. To illustrate its importance, all subdivisions, public works projects, and zoning decisions (except in charter cities) must be consistent with the general plan.

State law requires that each city and each county adopt a general plan containing the following seven components or "elements": land use, circulation, housing, conservation, open-space, noise, and safety (California Code sections 65300 *et seq.*). At the same time, each jurisdiction is free to adopt a wide variety of additional elements covering subjects of particular interest to that jurisdiction such as recreation, urban

design, or public facilities. The general plan of the largest jurisdictions that would receive the most impact from the 2018 RTP/SCS, Tulare County, is discussed in some detail below.[6]

Tulare County General Plan

The County General Plan is a policy document with planned land use maps and related information that are designed to give long-range guidance to those County officials making decisions affecting the growth and resources of the unincorporated Tulare County jurisdiction. This document helps to ensure that day-to-day decisions are in conformance with the long-range program designed to protect and further the public interests related to Tulare County's growth and development. It lays out specific policies to guide and improve employment in the County, such as increasing the viability of agriculture production, maintaining an Economic Development Strategy, and the encouragement of new industries. The General Plan also serves as a guide to the private sector of the economy, so that the private sector may relate its development initiatives to the public plans, objectives, and policies of the County.

The County General Plan has guiding principles for economic development as follows:

- The beauty of the County and the health and safety of its residents will be protected and enhanced.
- The County will create and facilitate opportunities to improve the lives of all County residents.
- The County will protect its agricultural economy while diversifying employment opportunities.
- Every community will have the opportunity to prosper from economic growth.

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[6] General plans of each city within Tulare County are available below:
City of Visalia: Adopted in 2014, their general plan has a vision year of 2030. http://www.visalia.city/depts/community_development/planning/gp.asp
City of Tulare: Adopted in 2014, their general plan has a vision year of 2035.
http://www.tulare.ca.gov/departments/community-development/development-services/planning/2035-tulare-general-plan
City of Porterville: Adopted in 2008, their general plan has a vision year of 2030.
http://www.ci.porterville.ca.us/depts/communitydevelopment/generalplan.cfm
City of Dinuba: Adopted in 2008, their plan has a 20-year time frame.
http://www.dinuba.org/services/business-services/general-plan-zoning
County of Tulare: Adopted in 2012, their general plan has a vision year of 2030.
http://generalplan.co.tulare.ca.us/
City of Farmersville: Adopted in 2002, their general plan has a vision year of 2025.
https://www.cityoffarmersville-ca.gov/315/2025-General-Plan
City of Exeter: Adopted in 2003, their general plan has a vision year of 2020.
https://cityofexeter.com/document-category/general-plan/
City of Lindsay: Their general plan was adopted in 1981, and is still in effect.
http://lindsay.ca.us/city-hall-2/departments/planning-economic-development/
City of Woodlake: http://www.cityofwoodlake.com/planning-documents/

- Growth will pay its own way providing sustainable, high quality infrastructure and services.

Other employment related policies of the plan include "support[ing] trends in agricultural production that shift suitable land into a variety of crops that can support a more diverse agricultural sector," supporting efforts of various entities that provide technical assistance to farmers attempting to switch to higher value crops, encouraging regional workforce training programs in agriculture, supporting the expansion of agricultural tourism, allowing existing and outdated agricultural facilities to be retrofitted for new use if they provide employment, and the encouragement of rural type mixed use land designations which promotes services and employment opportunities.

Tulare County General Plan Housing Element[7]

The County's housing element illustrates how the County plans to develop and improve the area's housing stock with specific goals. The following are guiding principles for the County in regard to housing: [8]

- Housing Guiding Principle 1.1 Endeavor to improve opportunities for affordable housing in a wide range of housing types in the communities throughout the unincorporated area of the County.
- Housing Guiding Principle 1.2 Promote equal housing opportunities for all persons regardless of race, religion, sex, marital status, ancestry, national origin, color, family status, disability, or any other arbitrary basis.
- Housing Guiding Principle 1.3 Strive to meet the housing needs of migrant and non-migrant farmworkers and their families with a suitable, affordable and satisfactory living environment.
- Housing Guiding Principle 1.4 Enhance and support emergency shelters and transitional and supportive housing programs that assist the homeless and others in need.
- Housing Guiding Principle 1.5 Encourage and support programs that assist and help meet the housing needs of special needs groups, including but not limited to the elderly, persons with disabilities, female headed households, large families, farmworkers, and the homeless.
- Housing Guiding Principle 1.6 Assess and amend County ordinances, standards, practices and procedures considered necessary to carry out the County's essential housing goal of the attainment of a suitable, affordable and satisfactory living environment for every present and future resident in unincorporated areas.

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7 Tulare County Housing Element. http://tularecounty.ca.gov/rma/index.cfm/planning/housing-element/

8 Additionally, Community Plans and Hamlet Plans help guide land use regulations, available here:
http://tularecounty.ca.gov/rma/index.cfm/planning/community-plans/
http://tularecounty.ca.gov/rma/index.cfm/planning/hamlet-plans/

- Housing Guiding Principle 1.7 Remove constraints on low-income households' ability to participate in multiple affordable housing assistance programs, including the FTHB program, mutual self-help housing program, youth build, infill housing programs, etc.

- Housing Guiding Principle 2.1 Encourage the development, improvement, and expansion of necessary public infrastructure serving the unincorporated communities.

- Housing Guiding Principle 2.2 Require proposed new housing developments located within the development boundaries of unincorporated communities to have the necessary infrastructure and capacity to support the development.

- Housing Guiding Principle 3.1 Encourage "smart growth" designed development that serves the unincorporated communities, the environment, and the economy of Tulare County.

- Housing Guiding Principle 3.2 Encourage development towards communities already served by infrastructure, seeking to utilize the resources that already exist while conserving the open space and irreplaceable agricultural resources in the bordering urban fringe.

- Housing Guiding Principle 4.1 Support and encourage County ordinances, standards, practices and procedures that promote residential energy conservation.

- Housing Guiding Principle 4.2 Encourage developments that will maximize energy efficiency and contribute to the reduction of GHGs.

- Housing Guiding Principle 5.1 Seek federal, state and other funding sources for the rehabilitation of substandard housing and for homebuyer assistance for low- and moderate-income residents of County's unincorporated area.

- Housing Guiding Principle 5.2 Encourage housing to be maintained in such a manner to provide a safe and satisfactory living environment.

- Housing Guiding Principle 5.3 Encourage a reduction of blight in communities and hamlets.

4.9.3 ENVIRONMENTAL IMPACTS

4.9.3.1 Thresholds of Significance

For the purposes of this PEIR, TCAG has determined that implementation of the proposed 2018 RTP/SCS would result in significant impacts to the County's population, housing, and employment resources, if either of the following would occur:

- Induce substantial unplanned population, housing, or employment growth either directly (for example, by proposing new homes and businesses) or indirectly (for example, through extension of roads or other infrastructure)

- Displace a substantial number of existing housing, necessitating the construction of replacement housing elsewhere; displace substantial numbers of people, necessitating the construction of replacement housing elsewhere; or displace a substantial number of jobs.

4.9.3.2 Methodology

The analysis assesses the impacts to population, housing, and employment resources that could result from implementation of the 2018 RTP/SCS. For each impact, implementation of the proposed 2018 RTP/SCS is analyzed at the regional level. Implementation of the proposed 2018 RTP/SCS is also analyzed in terms of its impacts to the region's Transit Priority Areas (TPAs).

Impacts are assessed for both proposed land use and proposed transportation changes. By 2042, implementation of the proposed 2018 RTP/SCS would result in a land use pattern and transportation network that is different from existing conditions. Unless otherwise stated, "existing conditions" refers to conditions in the year 2017.

Determination of Significance

The methodology for determining the significance on population, housing, and employment impacts compares the existing conditions to conditions under the 2018 RTP/SCS, as required by *State CEQA Guidelines* Section 15126.2(a).

The land use analysis is based on an assessment of the amount of growth (population, housing, and employment) projected for the region and in the TPAs by 2042, and an analysis of how that growth could impact the existing residents, housing stock, and job opportunities in the region.

4.9.3.3 Impacts and Mitigation Measures

Impact POP-1 **Induce substantial unplanned population, housing, or employment growth either directly (for example, by proposing new homes and businesses) or indirectly (for example, through extension of roads or other infrastructure)**

Figure, 4.7-2 Proposed Land Use (2042), depicts forecasted population, household, and employment growth to 2042. Projected population, housing unit, and employment growth is shown below in **Table 4.9-6, Population, Housing and Employment Existing and 2042,** below. Additional details on growth projections are located in the 2018 RTP/SCS and its associated appendices.

Table 4.9-6
Population, Housing and Employment Existing and 2042

	Population	Households	Persons Per Household	Employment
Existing (2017)	471,842	148,898	3.17	176,289
Plan (2042)	604,969	186,333	3.25	220,210
Change	133,127	37,435	0.08	43,921
Percent Change	28.2%	25.1%	2.5%	24.9%

Source: TCAG 2018

The population growth projection described in the 2018 RTP/SCS represents the amount and distribution of people that would occur in 2042 if the policies and investments included in the Plan are implemented. The total Tulare County population would increase by approximately 133,127 persons by 2042. The land use development pattern of the proposed 2018 RTP/SCS, assumes a greater increase in multifamily units located in urbanized areas than under the No Project scenario**. Table 4.9-7, RTP/SCS Housing Types,** provides a summary of new housing under the 2018 RTP/SCS.

Table 4.9-7
RTP/SCS Housing Types

Housing Type	2017 Existing Units	Percent of New Development	Total Units (Existing Plus Growth)	Percent of Total Units
Single-Family	115,844 (78%)	56%	136,688	73%
Multi-Family	33,053 (22%)	44%	49,645	27%
Total	148,897 (100%)	100%	186,333	100%

Source: TCAG 2018

Of the 37,436 new housing units projected by 2042, 44 percent would be multi-family housing. In accordance with California Code Section 65080(b)(2)(B)(ii), this increase in projected housing densities would help the region accommodate the projected housing needs at all income levels over the life of the proposed 2018 RTP/SCS, but especially housing at the lower-income categories. When the RHNA is updated, jurisdictions will revise their Housing Elements to meet their respective allocations. The land use strategies in the RTP/SCS will inform the development of the RHNA allocation and of those Housing Elements.

The proposed 2018 RTP/SCS land use development pattern encourages housing as infill within TPAs, without changing local General Plans or other land use regulations. It moves the region towards more

compact, mixed-use development leading to more opportunities for walking and biking, more transit use, and shorter auto trips.

The transportation investments and urban form strategies in the proposed RTP/SCS would foster economic and household growth and would remove some obstacles to growth in some parts of the region. As communities develop, pressure could be placed on the urban and suburban fringes. Growth strategies within the 2018 RTP/SCS would strategically target growth in areas proximate to jobs and transit, and as shown above, the share of multifamily housing would increase compared to existing conditions. However, the improved accessibility from the proposed 2018 RTP/SCS transportation projects could also help facilitate population and economic growth in areas of the region that are currently not developed, despite RTP/SCS policies designed to limit such development. Further, the RTP/SCS forecasts growth beyond the time horizons of current General Plans, which may result in future developments in areas that are currently unplanned.

The 2018 RTP/SCS housing and employment growth pattern continues the emphasis developed in the 2014 RTP/SCS of focusing on areas of existing development. Although forecasted growth is typically planned for in the General Plans of the County and the Cities, the timeline of the 2018 RTP/SCS goes well beyond General Plans and could therefore result in unplanned growth in urban areas as well. Therefore, impacts related to inducing unplanned growth are considered significant**.** Mitigation is required. **Mitigation Measure MM-POP-1** is described below.

Level of Significance Before Mitigation

Significant.

Mitigation Measures

MM-POP-1(a): Consistent with the provisions of Section 15091 of the *State CEQA Guidelines*, TCAG has identified mitigation measures capable of avoiding or reducing significant effects of population growth that are in the jurisdiction and responsibility of local agencies (land use projects) and implementing agencies (transportation projects).. Where the Lead Agency has identified that a project has the potential for significant effects, the Lead Agency can and should consider mitigation measures. Such measures include but are not limited to the following:

- Review capacities of available urban infrastructure and augment capacities as needed to accommodate demand in locations where growth is desirable and encouraged by the SCS (primarily TPAs, where applicable).

- When General Plans and other local land use regulations are amended or updated, use the most recent growth projections and RHNA allocation plan.

Level of Significance After Mitigation

Because this PEIR evaluates impacts at the programmatic level, all project circumstances are not foreseeable and this mitigation measure may not be feasible or effective for some projects. Therefore, even with implementation of **Mitigation Measure MM-POP-1**, impacts would remain significant and unavoidable. No additional feasible mitigation measures are available to reduce significant and unavoidable impacts beyond those identified in this PEIR. TCAG has no control over the amount of growth the region would experience during the implementation of the proposed Plan, and has no land use authority to control where growth occurs. The proposed Plan has been developed to accommodate forecasted regional growth, and failing to include such growth would be inconsistent with the federal and state requirements for RTP/SCSs. In addition, precluding growth would conflict with the requirements to provide sufficient housing for the region's population contained in SB 375.

Impact POP-2(a) **Displace a substantial number of existing housing, necessitating the construction of replacement housing elsewhere; or displace substantial numbers of people, necessitating the construction of replacement housing elsewhere; or displace a substantial number of jobs.**

In general, transportation projects included in the 2018 RTP/SCS would use existing rights-of-way (ROWs). However, development of some highway, arterial, and transit projects proposed under the 2018 RTP/SCS could result in the disturbance and/or loss of residential and/or business uses. In particular, the 2018 RTP/SCS includes system expansion projects and numerous roadway widening projects that have the potential to displace existing homes, residents and businesses. This is particularly true in urban areas where often there is little room for expansion due to existing development. These types of project, along with capacity enhancing roadway project (i.e., widenings and new roadways), as proposed on SR 99 and in Visalia on SR 198, have the potential to result in the loss of land currently used for residential or other uses.

Additional residential lands and jobs could be affected by the growth associated with the 2018 RTP/SCS as there many unknown details of multiple projects anticipated under the RTP/SCS. Implementation of **Mitigation Measure MM POP-2(a)** would reduce impacts related to population displacement; however, the impacts would remain significant.

Displacement of affordable housing in particular can have a negative impact on a community, as these types of units are in low supply. As populations are increasingly using transit (as documented in the

RTP) and showing more interest in living and working in areas with active transportation opportunities or other transit-rich neighborhoods (as is evidences by a land use strategy that emphasizes development in urban areas) and communities, changes could occur in existing communities. As such, displacement of lower-income residents could occur if new development envisioned by the 2018 RTP/SCS brings higher-income residents into a previously lower-income neighborhood. Hence, the displacement of population or housing in such an area could occur. **Mitigation Measure MM-POP-2(a)** could reduce impacts, but not below a significant level.

Due to the emphasis on development in urbanized areas, including TPAs, widenings and other capacity enhancing project in urbanized areas such as in Visalia have particular potential for displacement. As described above, proposed transportation facilities could displace homes and businesses. Growth associated with the 2018 RTP/SCS could also result in the displacement of existing businesses and housing, which could result in the need for construction of additional housing. Therefore, impacts associated with displacement would be significant.

Level of Significance Before Mitigation

Significant.

Mitigation Measures

MM-POP-2(a) Consistent with the provisions of Section 15091 of the *State CEQA Guidelines*, TCAG has identified mitigation measures capable of avoiding or reducing the significant effects related to displacement that are within the jurisdiction and responsibility of local agencies (land use projects) and implementing agencies (transportation projects). Where the Lead Agency has identified that a project has the potential for significant effects, the Lead Agency can and should consider mitigation measures to: (1) minimize the displacement of existing housing, people, and jobs; and (2) to ensure compliance with local jurisdiction's Housing Elements and local land use regulations, as applicable and feasible. Such measures may include but are not limited to the following:

- Evaluate alternate route alignments, transportation facilities, and alternative site locations for development projects that minimize the displacement of homes and businesses. Use an iterative design and impact analysis where impacts to homes or businesses are involved to minimize the potential of impacts on housing and displacement of people.

- Prioritize the use of existing ROWs, wherever feasible.

- Develop a construction schedule that minimizes potential neighborhood deterioration and protracted waiting periods between right-of-way acquisition and construction.

Level of Significance After Mitigation

Because this PEIR evaluates impacts at the programmatic level, all project circumstances are not foreseeable and these mitigation measures may not be feasible or effective for some projects. Therefore, even with implementation of **Mitigation Measure MM-POP-2(a),** impacts could remain significant and unavoidable. No additional feasible mitigation measures are available to reduce significant and unavoidable impacts beyond those identified in this PEIR.

4.9.4 CUMULATIVE EFFECTS

Result in Unplanned Growth

Implementation of the 2018 RTP/SCS would facilitate an increase in population, housing, and employment in certain locations over the next 24 years (although the same regional increases would occur whether or not the Plan is adopted). Implementation of the transportation projects included in the 2018 RTP/SCS, when taken into consideration with related development and infrastructure projects in surrounding areas, would have the potential to result in an increase in land use density and development over the next 24 years. When considered in combination with other land use changes and infrastructure development in the region and surrounding counties, the Plan would have the potential to influence substantial population, housing, and employment growth in the region, thus constituting a significant cumulative impact.

Although the 2018 RTP/SCS includes a set of regional land use strategies that are intended to guide future land development patterns to focus new growth in TPAs, population growth will take place regardless of whether the transportation projects included in the 2018 RTP/SCS are implemented. By 2042, the region would add an additional 133,127 people, regardless of the 2018 RTP/SCS. Improved mobility and accessibility from implementation of the Plan's transportation investments and strategies, integrated with land use strategies, could result in a population increase in areas within and beyond the County. Therefore, the Plan would result in significant cumulative impacts with regard to the potential for inducing substantial population growth in an area, and the RTP/SCS plans of adjacent jurisdictions would add to these significant cumulative impacts. The 2018 RTP/SCS's contribution to these impacts would be cumulatively considerable. Implementation of Mitigation Measures **MM-POP-1** and **MM-POP-2** would reduce impacts; however, project impacts would remain cumulatively considerable.

Displacement of Existing Housing or Population

The construction of transportation projects that require the expansion of existing or designation of new ROWs have the potential, when considered in combination with other land use changes and infrastructure development in the region and the RTP/SCS plans in adjacent jurisdictions, to result in the displacement of existing housing, jobs, or populations, necessitating the construction of replacement housing. These factors may cause people to move outside the County for both housing and/or employment needs. As indicated in the Table 4.9-3 and discussed above, all types of land uses, including residential uses, would be impacted by Plan projects. Therefore, the Plan in combination with the RTP/SCS plans in adjacent jurisdictions would result in significant cumulative impacts with regard to displacement of substantial amounts of existing housing, jobs, or population, necessitating the construction of replacement housing elsewhere. The Plan's contribution to these impacts would be cumulatively considerable. Implementation of **Mitigation Measures MM-POP-1** and **MM-POP-2** would reduce impacts; however, Plan impacts would remain cumulatively considerable.

4.10 PUBLIC SERVICES

This section describes the existing public services within the region, identifies the regulatory framework with respect to regulations that addresses public services, and evaluates the significance of the changes to public services that could result from implementation of the proposed 2018 RTP/SCS. In addition this section provides mitigation measures for subsequent, site-specific environmental review documents prepared by lead agencies to reduce identified impacts. Sources utilized in this discussion include the Bureau of Land Management, National Park Service, National Forest Service, Tulare County Fire Department, the California Highway Patrol, the Tulare County Sheriff's Office, and the Tulare County Superintendent of Schools.

4.10.1 Fire Protection

4.10.1.1 ENVIRONMENTAL SETTING

Fire Protection Services

Tulare County is served by a variety of fire protection services. These services include federal, state, county, and local fire protection services. On the local level, the County's three largest cities (Visalia, Tulare, and Porterville) all have their own fire departments which serve within their own area of responsibilities. Tulare County is generally served by the Tulare County Fire Department, but through mutual aid agreements the County's Fire Department as well as other fire protection services can be called upon for fire support. Generally, fire departments take proactive and preventative measures to provide fire suppression and emergency response services for all private, institutional, and public facilities within their area of responsibility. Wildfire threat in Tulare County is shown **in Figure 4.10.1-1, Tulare County Wildfire Hazard Severity Zones**.

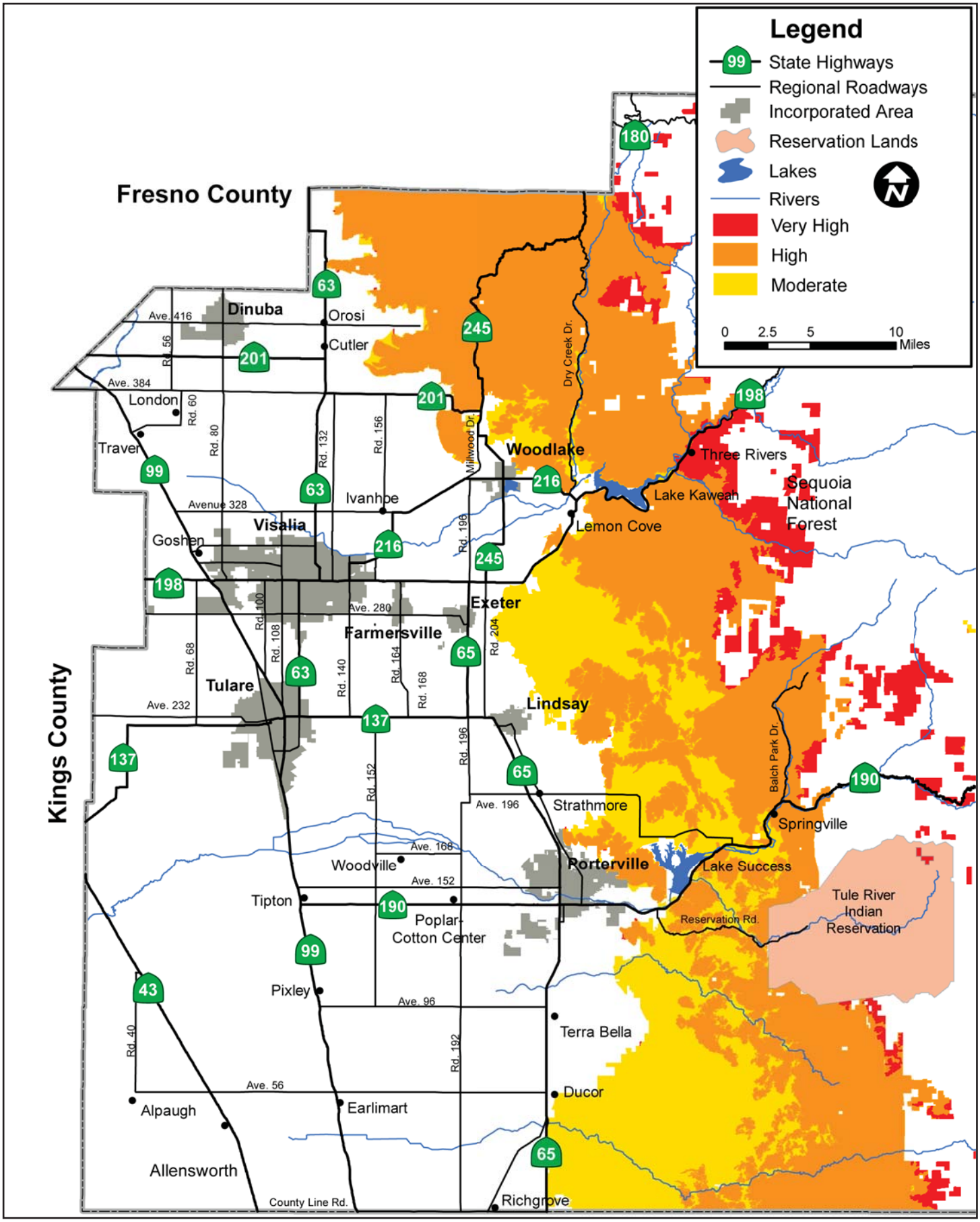
Tulare County Fire Department

The Tulare County Fire Department responds to regional based needs across the County. These services include responding to fires, medical emergencies, motor vehicle collisions, technical rescues, and other life threatening or dangerous conditions. The Tulare County Fire Department maintains goals consistent with National Fire Protection Association (NFPA) Standards, seen in **Table 4.10.1-1.**

Table 4.10.1-1
Tulare County Fire Department Response Time Goals
National Fire Protection Association (NFPA) Standards

Demand Zone	Demographics (Persons/mile)	Staffing/ Response Time (FF/min.)[1]	Percent of Calls (%)
Urban	Greater than 1000	15 FF/ 9 min.	90
Suburban	500-1000	10 FF/ 10 min.	80
Rural	Less than 500	6 FF/ 14 min.	80
Remote[2]	Travel Distance less than 8 miles	4 FF	90

Source: Tulare County Fire Department. Accessed 2 November 2017. Website. http://tularecounty.ca.gov/fire/index.cfm/about-tcfd/continued-about-tulare-county-fire-department/
Note:
[1] *FF/min. = Firefighter per minute*
[2] *Upon assembling the necessary resources at the emergency scene, the fire department should have the capability to safely commence an initial attack within 2 minutes 90% of the time.*



SOURCE: Tulare County Association of Governments, 2018

FIGURE **4.10.1-1**

Tulare County Wildfire Hazard Severity Zones

IMPACT SCIENCES

1290.001•04/18

Tulare County Fire Department has locations throughout the county. There are 27 County fire stations, far surpassing the three largest jurisdictions in the area: Visalia, Porterville, and Tulare. **Table 4.10.1-2, Fire Protection Service Providers for Jurisdictions within TCAG,** provides the names and locations of fire stations in the County.

Table 4.10.1-2
Fire Protection Service Providers for Jurisdictions within TCAG

Jurisdiction	Name	Location
Tulare County[1]		
	Visalia Fire Station #11968	Lovers Lane, Visalia CA 93292
	Kings River Fire Station # 2	3811 Avenue 400, Kingsburg CA 93631
	Dinuba Fire Station #3	40404 Road 80, Dinuba, CA 93618
	Cutler-Orosi Fire Station #4	40779 Road 128, Cutler, CA 93615
	Cal Hot Springs Station #6	45122 Manter Meadow Drive, Cal Hot Springs 93207
	Goshen Fire Station #7	30901 Road 67, Goshen, CA 93291
	Ivanhoe Fire Station #8	32868 Hawthorne Road, Ivanhoe, CA 93235
	Alpaugh Fire Station #9	3939 Avenue 54, Alpaugh, CA 93201
	Richgrove Fire Station #10	20890 Grove Drive, Richgrove, CA 93261
	Exeter Fire Station #11	137 North "F" Street, Exeter, CA 93291
	Woodlake Fire Station #12	216 East Naranjo Boulevard, Woodlake, CA 93286
	Lemon Cove Fire Station #13	32490 Highway 198, Lemon Cove, CA 93244
	Three Rivers Fire Station #14	41412 South Fork Drive, Three Rivers, CA 93271
	Lindsay Fire Station #15	19603 Avenue 228, Lindsay, CA 93247
	Strathmore Fire Station #16	22908 Avenue 196, Strathmore, CA 93267
	Badger Fire Station #17	51345 Eshom Valley Drive, Badger, CA 93603
	West Olive Fire Station #19	22315 Avenue 152 Porterville, CA 93257
	Doyle Colony Fire Station #20	551 East Success Drive, Porterville, CA 93257
	Terra Bella Fire Station #21	23658 Avenue 95, Terra Bella, CA 93270
	Springville Fire Station #22	35659 Highway 190, Springville, CA 93265
	Camp Nelson Fire Station #23	1500 Nelson Drive, Camp Nelson, CA 93208
	Tulare Fire Station #25	2082 Foster Drive, Tulare, CA 93274
	Pixley Fire Station #27	200 North Park Drive, Pixley, CA 93256
	Earlimart Fire Station	808 East Washington, Earlimart, CA 93219
	Posey Fire Station #5	45656 Old Stage Road, Posey, CA 93260
	Kennedy Meadow Fire Station #18	99075 Goman Road, Inyo-Kern, CA 93527
Visalia[2]		
	Fire Station #51	309 South Johnson Street, Visalia, CA 93291
	Fire Station #52	2224 West Monte Vista, Visalia, CA 93277
	Fire Station #53 (New)	Walnut/Atwood, Visalia, CA 93277
	Fire Station #54	440 West Ferguson Street, Visalia, CA 93291
	Fire Station #55	6921 West Ferguson Avenue, Visalia, CA 93291
	Fire Station #56	1968 South Lovers Lane, Visalia, CA 93292
Porterville[3]		

Jurisdiction	Name	Location
	Fire Station #1	40 West Cleveland Avenue, Porterville, CA 93257
	Fire Station #2	500 North Newcomb Street, Porterville, CA 93257
Tulare[4]		
	Fire Station #61	800 South Blackstone Street, Tulare, CA 93274
	Fire Station #62	138 North E Street, Tulare, CA 93274
	Fire Station #63	2900 North M Street, Tulare, CA 93274

Source:
[1] *Tulare County Fire Stations Map. Tulare County Fire Department. Accessed 2 November 2017. Website. http://tularecounty.ca.gov/fire/index.cfm/tulare-county-fire-stations-map/*
[2] *Visalia Fire Department Information. City of Visalia. Accessed 2 November 2017. Website. http://www.visalia.city/depts/fire/facilities/default.asp*
[3] *Porterville Fire Department History. City of Porterville. Accessed 2 November 2017. Website. http://www.ci.porterville.ca.us/depts/Fire/firedepartmenthistory.cfm*
[4] *Tulare Fire Suppression Division. Tulare Fire Department. Accessed 2 November 2017. Website. http://www.tulare.ca.gov/departments/fire/suppression*

Bureau of Land Management

The Bureau of Land Management (BLM) is a federal agency which manages the nation's subsurface mineral resources under the U.S. Department of the Interior. The land and minerals under BLM authority include, but are not limited to, forests, mountains, and rangelands.

The BLM operates the Fire and Aviation program which works with state and field offices to provide a fire and aviation management program. The BLM provides coordination with state offices to provide effective interagency activities and policy through the National Interagency Fire Center (NIFC) in Boise, Idaho. The BLM's fire and aviation program has three organizational levels: (1) the national office which provides leadership and oversight, and develops policy, procedures and budgets for the fire and aviation program; (2) state offices which are responsible for coordinating policies and interagency activities within their state; and (3) field offices which are responsible for on-the-ground fire management and aviation activities, often partnering with other agencies to maximize rapid initial attack.[1]

The BLM plays a primary role in the nation's wildland fire management efforts and undertakes a broad range of activities to protect the public, natural landscape, wildlife habitat, and recreational areas. The BLM trains firefighters in fire suppression, preparedness, predictive services, vegetative fuels management, prescribed fire, community assistance and protection, and education.[2]

1 Fire and Aviation Program. U.S. Bureau of Land Management. Website. https://www.blm.gov/programs/public-safety-and-fire/fire-and-aviation

2 Ibid.

National Park Service

The National Park Service (NPS), a federal agency under the U.S. Department of the Interior, helps manage wildland fires in designated National Parks such as Sequoia National Park. The NPS finds wildfires beneficial to ecosystems, but NPS fire staff are trained and equipped to aggressively put out an unwanted fire when it is necessary for resource protection or public safety.[3]

U.S. Forest Service

The National Forest Service (USFS) is a federal agency under the U.S. Department of Agriculture. Similarly to the National Park Service, the USFS works with other agencies to manage wildland fires that threaten lives, homes, communities, and natural and cultural resources.[4] The USFS provides assistance with fire protective services especially within the Sequoia National Forest.

Division of Forestry and Wildland Fire Management

The Division of Forestry and Wildland Fire Management (DFWFM) oversees the National Indian Forestry and Wildland Fire Management Program which is an effort between the U.S. Department of the Interior, the Bureau of Indian Affairs, and other federal agencies and tribal governments.[5] The Tule River Tribe and Reservation is a federally recognized tribe of Native Americans located on the eastern side of Tulare County. The Tule River Fire Department supports fire protection services within the Reservation.[6]

California Department of Forestry and Fire Protection (CAL FIRE)

The California Department of Forestry and Fire Protection (CAL FIRE) provides fire protection services to California's privately-owned wildlands and works in collaboration with counties and local governments to provide emergency services. CAL FIRE responds to medical aids; hazardous material spills; swiftwater rescues; search and rescue missions; civil disturbances; train wrecks; floods; earthquakes and more.[7]

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3 About Wildland Fire. Fire and Aviation Management. National Park Service. Website. https://www.nps.gov/fire/wildland-fire/about.cfm

4 Wildland Fire. U.S. Forest Service. Website. https://www.fs.fed.us/managing-land/fire

5 Division of Forestry and Wildland Fire Management. Bureau of Indian Affairs. Website. https://www.bia.gov/bia/ots/dfwfm/content

6 Tule River Fire Department. Website. http://fire.tulerivertribe-nsn.gov/

7 California Department of Forestry and Fire Protection. http://calfire.ca.gov/about/about

4.10.1.2 REGULATORY FRAMEWORK

Federal

Federal Emergency Management Act (FEMA)

The Federal Emergency Management Agency (FEMA), under the U.S. Department of Homeland Security has a mission to lead the effort and prepare the nation for all hazards and effectively manage federal response and recovery efforts following any national incident. FEMA also initiates proactive mitigation activities, trains first responders, and manages the National Flood Insurance Program and the U.S. Fire Administration.

Disaster Mitigation Act of 2000

The Disaster Mitigation Act of 2000 (Public Law 106-390) was signed into law to amend the Robert T. Stafford Disaster Relief Act of 1988 (42 U.S.C. §5121-5207). Among other things, this legislation reinforces the importance of pre-disaster infrastructure mitigation planning to reduce disaster losses nationwide, and is aimed primarily at the control and streamlining of the administration of federal disaster relief and programs to promote mitigation activities. Some of the major provisions of the Disaster Mitigation Act include:

- funding pre-disaster mitigation activities;
- developing experimental multi-hazard maps to better understand risk;
- establishing state and local government infrastructure mitigation planning requirements;
- defining how states can assume more responsibility in managing the Hazard Mitigation Grant Program (HMGP); and
- adjusting ways in which management costs for projects are funded.

The mitigation planning provisions outlined in Section 322 of the Act establish performance-based standards for mitigation plans and requires states to have a public assistance program (Advance Infrastructure Mitigation—AIM) to develop county government plans. The consequence for counties that fail to develop an infrastructure mitigation plan is the chance of a reduced federal share of damage assistance from 75 percent to 25 percent if the damaged facility has been damaged on more than one occasion in the preceding 10-year period by the same type of event.

State

All law enforcement agencies within the State of California are organized and operate in accordance with the applicable provisions of the California Penal Code. This code sets forth the authority, rules of conduct, and training for peace officers. Under state law, all sworn municipal and County officers are state peace officers.

California Department of Forestry and Fire Protection (CAL FIRE)

CAL FIRE is an emergency response and resource protection department that protects lives, property, and natural resources from fire; responds to emergencies of all types, and protects and preserves timberlands, wildlands, and urban forests. Department personnel and equipment serve to protect more than 31 million acres of California's privately owned wildlands, as well as provide some type of emergency service under cooperative agreement with 150 counties, cities, and districts.[8]

California Fire Code

Title 24, Part 9 of the California Code of Regulations (CCR) is the California Fire Code. The California Fire Code sets regulations for building standards, fire protection and notification systems. The development of improvement projects under the 2018 RTP/SCS would be subject to the applicable regulations of the California Fire Code.

Local

County and Cities General Plan and Safety Elements

Local planning policies related to public services and recreation are established in each jurisdiction's general plan. In general, jurisdictions have policies in place that indicate that public services must be provided as the need for those services arises. In addition to these general policies, jurisdictions may have more specific policies tailored to performance objectives, such as those outlined below.

Policies and strategies for fire protection services generally include language pertaining to the development of law enforcement programs to reduce and control crime, the planning of future law enforcement facilities concurrently with growth, and the prevention of crime through education. Many jurisdictions also have specific goals, such as a maintaining a certain ratio of sworn officers to citizens, reducing response times, or reducing the overall number of crimes in the community.

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8 California Department of Forestry and Fire Protection (CAL FIRE). What is CAL FIRE? http://www.calfire.ca.gov/communications/downloads/fact_sheets/WhatisCALFIRE.pdf

Applicable General Plan policies from the two largest jurisdictions and the ones that would be most affected by the Plan are identified below.

Tulare County General Plan

Applicable policies from the Tulare County General Plan's Public Facilities and Services Chapter include the following:

- **PFS-7.1 Fire Protection:** The County shall strive to expand fire protection service in areas that experience growth in order to maintain adequate levels of service.
- **PFS-7.2 Fire Protection Standards:** The County shall require all new development to be adequately served by water supplies, storage, and conveyance facilities supplying adequate volume, pressure, and capacity for fire protection.
- **PFS-7.3 Visible Signage for Roads and Buildings:** The County shall strive to ensure all roads are properly identified by name or number with clearly visible signs.
- **PFS-7.4 Interagency Fire Protection Cooperation:** The County shall continue to promote cooperate fire protection agreements with municipal and special district fire departments, State and federal agencies, and adjacent County fire departments to provide added fire protection on a year round basis.
- **PFS-7.5 Fire Staffing and Response Time Standards:** The County shall strive to maintain fire department staffing and response time goals consistent with National Fire Protection Association (NFPA) standards.
- **PFS-7.6 Provision of Station Facilities and Equipment:** The County shall strive to provide sheriff and fire station facilities, equipment (engines and other apparatus), and staffing necessary to maintain the County's service goals. The County shall continue to cooperate with mutual aid providers to provide coverage throughout the County.
- **PFS-7.7 Cost Sharing:** The County shall require new development to pay public facility fees associated with new sheriff/fire station facilities and equipment necessary to maintain the County's service standards in that area. New development may also be required to create or join a special assessment district, or other funding mechanism, to pay the costs associated with the operation of a sheriff/fire station.
- **PFS-7.11 Location of Fire and Sheriff Stations/Sub-stations:** The County shall strive to locate fire and sheriff sub-stations in areas that ensure the minimum response times to service calls.
- **HS-1.1 Maintain Emergency Public Services**: The County shall ensure that during natural catastrophes and emergency situations, the County can continue to provide essential emergency services.

- **HS-1.2 Development Constraints:** The County shall permit development only in areas where the potential danger to the health and safety of people and property can be mitigated to an acceptable level.

- **HS-1.3 Hazardous Lands:** The County shall designate areas with a potential for significant hazardous conditions for open space, agriculture, and other appropriate low intensity uses.

- **HS-1.4 Building and Codes:** Except as otherwise allowed by State law, the County shall ensure that all new buildings intended for human habitation are designed in compliance with the latest edition of the California Building Code, California Fire Code, and other adopted standards based on risk (e.g., seismic hazards, flooding), type of occupancy, and location (e.g., floodplain, fault).

- **HS-1.5 Hazard Awareness and Public Education:** The County shall continue to promote awareness and education among residents regarding possible natural hazards, including soil conditions, earthquakes, flooding, fire hazards, and emergency procedures.

- **HS-1.6 Public Safety Programs:** The County shall promote public safety programs, including neighborhood watch programs, child identification and fingerprinting, public awareness and prevention of fire hazards, and other public education efforts.

- **HS-1.7 Safe Housing and Structures:** The County shall continue to seek grant funding for the rehabilitation of deteriorated and dilapidated structures and provide available information regarding housing programs and other public services including the identification of existing nonconforming building construction specific to building codes that apply in the Very High Fire Hazard Safety Zones.

- **HS-1.8 Response Times Planning in GIS:** The County shall utilize its Geographic Information Systems (GIS) technology to track fire and law enforcement responses times and provide technical assistance to fire and law enforcement agencies.

- **HS-1.9 Emergency Access:** The County shall require, where feasible, road networks (public and private) to provide for safe and ready access for emergency equipment and provide alternate routes for evacuation.

- **HS 6.1. New Building Fire Hazards:** The County shall ensure that all building permits in urban areas, as well as areas with potential for wildland fires, are reviewed by the County Fire Chief. The following minimum requirements should be met to review developments or uses within areas of varying fire hazards:

  1. Very High Hazard – Extreme caution should be used in allowing development, particularly critical facilities.
  2. High Hazard – Strict compliance with existing State statutes and local ordinances should provide adequate fire protection.
  3. Moderate Hazard – Development should be allowed, with recommendations for mitigation of hazard by Fire Warden.

- **HS-6.2 Development in Fire Hazard Zones:** The County shall ensure that development in very high or high fire hazard areas is designed and constructed in a manner that minimizes the risk from

fire hazards and meets all applicable State and County fire standards. This shall include promoting the use of fire resistant materials designed to reduce fire vulnerability within high or very high fire hazard areas through use of Article 86-A of the 2001 California Fire Code, SRA Fire Safe Regulations, and other nationally recognized standards, as may be updated periodically. Special consideration shall be given to the use of fire-resistant-materials and fire-resistant- construction in the underside of eaves, balconies, unenclosed roofs and floors, and other similar horizontal surfaces in areas with steep slopes. Ensure new development proposals contain specific fire protection plans, actions, and codes for fire engineering features for structures in Very High Fire Hazard Safety Zones including automatic sprinklers as required by applicable codes.

- **HS-6.3 Consultation with Fire Service Districts:** The County shall consult the appropriate fire service district in areas identified as subject to high and very high fire hazard, for particular regulations or design requirements prior to issuance of a building permit or approval of subdivisions.

- **HS-6.4 Encourage Cluster Development:** The County shall encourage cluster developments in areas identified as subject to high or very high fire hazard, to provide for more localized and effective fire protection measures such as consolidations of fuel build-up abatement, firebreak maintenance, firefighting equipment access, and water service provision.

- **HS-6.5 Fire Risk Recommendations:** The County shall encourage the County Fire Chief to make recommendations to property owners regarding hazards associated with the use of materials, types of structures, location of structures and subdivisions, road widths, location of fire hydrants, water supply, and other important considerations regarding fire hazard that may be technically feasible but not included in present ordinances or policies.

- **HS-6.6 Wildland Fire Management Plans:** The County shall require the development of wildland fire management plans for projects adjoining significant areas of open space that may have high fuel loads.

- **HS-6.7 Water Supply Systems:** The County shall require that water supply systems be adequate to serve the size and configuration of land developments, including satisfying fire flow requirements. Standards as set forth in the subdivision ordinance shall be maintained and improved as necessary.

- **HS-6.8 Private Water Supply:** The County shall require separately developed dwellings with individual private water supply to provide an acceptable guaranteed minimum supply of water for fire safety, in addition to the amount required for domestic needs.

- **HS-6.9 Fuel Modification Programs:** The County shall actively support fuel modification and reduction programs on public and private lands throughout the County, including vacant residential lots and greenbelts and, with the relevant partners, on adjacent private wildlands or federal lands with fire hazards that threaten the entity's jurisdiction as feasible and appropriate.

- **HS-6.10 Fuel Breaks:** In the Foothill and Mountain Plan Areas, the County shall require fuel breaks of at least 100 feet around structures that are in a wildland fire area to limit the risk of fires and property loss. Secondary fuel breaks up to 200 feet in width shall be required when the County Fire Chief finds that additional precautions are necessary.

- **HS-6.11 Fire Buffers:** The County shall strive to maintain fire buffers along heavily traveled roads within high and very high hazard zones by thinning, disking, or controlled burning. Parks, golf courses, utility corridors, roads, and open space areas shall be encouraged to locate so they serve a secondary function as a fuel break.

- **HS-6.12 Weed Abatement:** The County shall continue to encourage weed abatement programs throughout the County in order to promote fire safety.

- **HS-6.13 Restoration of Disturbed Land:** The County shall support the restoration of disturbed lands resulting from wildfires.

- **HS-6.14 Coordination with Cities:** The County shall coordinate with cities to develop cohesive fire safety plans with overlapping coverage.

- **HS-6.15 Coordination of Fuel Hazards on Public Lands:** The County shall work with local and Federal agencies to support efforts to reduce fuel related hazards on public lands.

- **HS-6.16 Consideration of Diverse Occupancies and their effects on Wildfire Protection:** The County shall strive to ensure risks to uniquely occupied structures, such as seasonally occupied homes, multiple dwelling structures, or other structures with unique occupancy characteristics, are considered for appropriate and unique wildfire protection needs.

- **HS-6.17 Integration of Open Space into Fire Safety Effectiveness:** The County shall strive to address the facilitation of safe fire suppression tactics, standards for adequate access for firefighting, fire mitigation planning with agencies/private landowners managing open space adjacent to the County jurisdictional area, water sources for fire suppression, and other fire prevention and suppression needs.

- **HS-6.18 Mitigation for unique pest, disease and other forest health issues leading to hazardous situations:** The County shall strive to address unique pest, disease, exotic species and other forest health issues in open space areas for purposes of reducing fire hazard and supporting ecological integrity.

- **HS-6.19 Wildfire Risk Reduction related to Climate Change:** The County shall strive to reduce the wildfire risk as it relates to climate change, such as the drought and it's relation to tree mortality by implementing the Tree Mortality Removal Plan.

- **HS-6.20 Fire Suppression Defense Zones:** The County shall support the creation of wildfire defense zones for emergency services, including fuel breaks or other staging areas where WUI firefighting tactics could be most effectively deployed as appropriate consistent with the strategies identified in the Multi- Jurisdictional Local Hazard Mitigation Plan.

- **HS-6.21 Redevelopment of Structures in High and Very Hazardous Areas:** In High and Very hazardous areas, the County shall strive to ensure that the redevelopment of structures utilize state of the art fire resistant building and development standards to improve past 'substandard" fire safe conditions as feasible and appropriate according to applicable codes.

- **HS-6.22 Long Term Maintenance of Fire Hazard Reduction Mitigation Projects:** Consistent with the Multi-Jurisdictional Local Hazard Mitigation Plan, the County shall support maintenance of the post-fire-recovery projects, activities, or infrastructure as feasible and appropriate.

- **HS-6.23 Reassessment of Fire Hazards Following Wildfire Events:** The County shall strive as reasonable and appropriate to adjust fire prevention and suppression needs for both short and long term fire protection in the reassessment of fire hazards following wildfire events.

- **HS-6.24 Consideration of Wildlife Habitat/Endangered Species in Developing Long Term Fire Area Recovery and Protection Plans:** The County shall consider wildlife habitat/endangered species in developing long term fire area recovery and protection plans, including environmental protection agreements such as natural community conservation plans.

- **HS-6.25 Emergency Response Barriers:** The County shall support the identification of vital access routes that if removed would prevent fire fighter access (bridges, dams, etc.) as included in the Multi-Jurisdictional Local Hazard Mitigation Plan to address emergency access planning for these areas.

Tulare County Code

In addition to following the rules and regulations of the California Penal Code, Tulare County maintains the Tulare County Code which explains the existing laws and regulations throughout the County. Ordinances 2907, 3124 and 3227 all govern the Uniform Fire Code within the County. The California Fire Code is under Part VII Chapter 15 Article 3 relating to building regulations and land use development.

Cities Municipal Codes

The cities of Porterville, Tulare, Visalia, Dinuba, and Woodlake operate their own fire departments, with specific rules and regulations which residents and visitors must abide by when in the local jurisdictions. Other cities such as Exeter, Farmersville, and Lindsay on rely on other fire protection services such as the County along with mutual aid agreement and regulations.

4.10.1.3 ENVIRONMENTAL IMPACTS

4.10.1.3.1 Thresholds of Significance

For the purposes of this PEIR, TCAG has determined that implementation of the proposed 2018 RTP/SCS would result in significant adverse impacts to fire protection services if any of the following would occur (these thresholds are based on Appendix G and clarified for how they apply to the RTP/SCS):

- Result in substantial adverse physical impacts associated with the provision of new or physically altered fire protection facilities, need for new or physically altered fire protection facilities, the construction of which could cause significant environmental impacts in order to maintain acceptable service ratios, response times or other service objectives for fire protection.

4.10.1.3.2 Methodology

The analysis assesses the impacts to fire protection facilities that could result from implementation of the proposed 2018 RTP/SCS. Implementation of the proposed 2018 RTP/SCS is analyzed at the regional level.

Impacts are assessed in terms of both land use and transportation project impacts. By 2042, implementation of the proposed 2018 RTP/SCS would result in a land use pattern and transportation network that is different from existing conditions.

Determination of Significance

The methodology for determining the significance of fire protection impacts compares the existing conditions to conditions under the 2018 RTP/SCS, as required by *CEQA Guidelines* Section 15126.2(a). Impacts on the known fire protection facilities located within the County were evaluated using the criteria set forth by the fire departments and the *CEQA Guidelines*.

Generally, with regard to impacts on fire protection facilities, the greater the change from existing conditions, the more likely the impact to the existing resources and the more likely construction of new facilities would be. The addition of new jobs, housings, and residents would affect existing fire protection facilities and could result in construction of new facilities that could result in significant impacts at the local level.

The development of new transportation facilities may affect fire protection facilities through by increasing the number of users on the road, and thus increasing the number of incidents requiring response and deployment of fire protection equipment. Further, as the population would grow by 133,127 people, the potential for additional demand for fire protection and the need to construct new facilities exists.

Since this PEIR analyzes impacts to fire protection resources on a program level, project-level analysis of impacts would be undertaken as appropriate.

4.10.1.3.3 Impact and Mitigation Measures

Impact FIRE-1 **Result in substantial adverse physical impacts associated with the provision of new or physically altered fire protection facilities, need for new or physically altered fire protection facilities, the construction of which could cause significant environmental impacts in order to maintain acceptable service ratios, response times or other service objectives for fire protection.**

Impacts to fire protection services are limited to the physical impacts that would occur as a result of construction of new or physically altered facilities. Service ratios and response times are one tool jurisdictions use to determine the need for such facilities, but are not necessarily an environmental impact under CEQA.

Fire services are provided by at the local level in urban areas; federal agencies and CAL FIRE fight fires on state and federal lands, as described in the Existing Setting above. Major jurisdictions within the County that provide fire protection services include the County of Tulare and the cities of Visalia, Tulare, and Porterville. Each jurisdiction has a methodology for determining appropriate response times and service ratios. As 2018 RTP/SCS projects are constructed, depending upon the timing, location, and duration of construction activities, several of the proposed transportation projects, including grade crossings, arterials, interchanges, and widenings, could result in temporary changes in fire vehicle response times which is one factor that can affect the need for new facilities. By closing off one or more lanes of a roadway, response times could temporarily and intermittently increase as fire vehicles take longer routes due to construction activity. The closure of lanes could also potentially cause traffic delays and ultimately inhibit access when responding to service calls. Generally, fire response times during project construction are reduced through adherence to road encroachment permits. Traffic control plans are typically required to further reduce impacts on traffic which would also reduce impacts to fire and emergency response vehicles. These impacts would be brief in nature and would be unlikely to result in a determination by a jurisdiction that new facilities would be required. Therefore, construction phase impacts would be less than significant.

By 2042, to the TCAG region would grow by approximately 133,127 people, 49,921 jobs, and 37,435 housing units. Implementation of the proposed 2018 RTP/SCS would convert approximately 8,884 acres of vacant land to more urban uses. Depending on the growth and housing patterns, existing fire protection facilities and services may become overextended during the lifetime of the 2018 RTP/SCS. In particular, the 2018 RTP/SCS includes a shift in housing patterns (similar to the 2014 RTP) to emphasize development in urbanized areas. For example, 44 percent of new residential development would be

multi-family residential (as compared to 22 percent of existing development being multi-family residential).

Public service standards, performance measures, and related policies are usually set in city and county general plans. To meet the demand for services generated by increasing population, existing facilities would likely need additional personnel and equipment to maintain adequate service levels. As part of project specific environmental review, local agencies would determine the degree of impact to fire services and mitigate any impacts in accordance with county and city requirements to protect public safety.

In some cases, depending on the pattern of development, it could be necessary to construct new facilities to maintain adequate response times, equipment, and personnel. Construction of fire protection facilities themselves does not typically result in environmental impacts (depending on the size of the facility); occasionally operation of the new facility can have the potential to impact sensitive receptors in the immediate area. Such construction could also have impacts on aesthetics, air quality, cultural resources, and utilities, but typically the primary significant impact is noise associated with use of sirens in emergencies.

In planning new facilities, local jurisdictions take into account growth projections. Many of the environmental impacts of the construction and operation of new facilities are the types of impacts that have been analyzed in this PEIR. Specifically, this PEIR analyzes effects of growth, including infrastructure required to serve growth, related to air quality, noise, traffic, utilities, and other environmental impact areas. Therefore, any additional impacts as a result of construction of new or physically altered fire protection facilities related to the land use changes and transportation improvements from implementation of the proposed 2018 RTP/SCS are considered less than significant for **Impact FIRE-1**. Mitigation is not required.

Level of Significance Before Mitigation

Less than significant.

Mitigation Measures

None required.

Level of Significance After Mitigation

Impacts to fire protection facilities would be less than significant.

4.10.1.4 CUMULATIVE EFFECTS

In general, any impact as a result of construction of new fire protection facilities would be confined to the immediate area of construction of each facility. There is the potential for overlapping impacts from other cumulative projects (development as a result of RTP/SCSs in neighboring jurisdictions) to occur, since the 2018 RTP/SCS could encourage growth in surrounding jurisdictions which could lead to impacts to fire departments outside Tulare County which could incrementally add to impacts from growth from RTP/SCSs in surrounding jurisdictions. Nonetheless the projects contribution to cumulative impacts is not considered cumulatively considerable.

4.10.2 Police Protection

4.10.2.1 ENVIRONMENTAL SETTING

Police Protection Services

Primary law enforcement is at the community level, with city police and County Sheriff's departments providing this service. Additionally, there are more specialized law enforcement agencies that assist in law enforcement at the community or resource level. These specialized agencies include, but are not limited to State Highway Patrol, School Police, Airport Police, Transit Police, Park Rangers (federal, state, County, and city), and a wide variety of federal agencies (FBI, ATF, etc.). Each agency has its own responsibilities, some of which may overlap with other law enforcement agencies. State Park Rangers may call upon Sheriff's Deputies for assistance. Transit Police might call upon City Police to aid them. In general, law enforcement agencies provide first response to all emergencies, perform preliminary investigations, and provide basic patrol services in their service area.

California Highway Patrol

The California Highway Patrol (CHP) enforces state and local regulations along interstate and state highways. While monitoring the roadways the CHP provides traffic regulation enforcement, accident management, and assistance to stopped motorists. The CHP maintains two offices in Tulare County, located at 861 West Morton Avenue, Porterville, CA 93257 and 5025 West Noble Avenue, Visalia, CA 93277. When necessary the CHP coordinates with both the Tulare County's Sheriff Department and the six local police departments (Dinuba, Exeter, Porterville, Tulare, Visalia, and Woodlake Police Department) within the County.

Tulare County Sheriff's Department

The Tulare County Sheriff's Department is the law enforcement agency in the County which provides police services to unincorporated portions of the County. The County Sheriff's headquarters is located at 2404 West Burrel Avenue, Visalia, CA 93291-4580. The County's Sheriff's substations are located throughout the County to provide further support and safety to the surrounding communities. The substation locations are identified in **Table 4.10.2-2, Tulare County Sheriff's Sub Stations Location**.

Table 4.10.2-1
Tulare County Sheriff's Sub Stations Location

Station	Address
Culter-Orosi Substation	414 Road 128, Orosi, CA 93647
Headquarters Patrol	2404 W. Burrel Avenue, Visalia, CA 93291
Pixley Substation	161 N. Pine Street, Pixley, CA 93256
Porterville Substation	379 N. Third Street, Porterville, CA 93257

Source: Tulare County Sheriff's Department. Annual Report 2014-2015. http://tularecounty.ca.gov/sheriff/index.cfm/community/2014-2015-annual-report/.

The Sheriff's department employs 592 sworn and 252 civilian employees. Within those employed by the Sheriff's department, staff members are deployed at substations, at court services, and with detention operations.[9] The main sheriff is an elected position and all other positions are County employees.

Administrative Services

The Sheriff's administrative services include personnel and training; court services; and patrol services. The court services main responsibilities are to ensure the safety of judges, attorneys, witnesses, defendants, jurors, and the general public at Tulare County Superior Court locations. There are five locations of the Superior Court system: the Civic Center complex in Visalia, and satellite locations in Porterville, Dinuba, the Adult Pre-Trial Detention Facility at Sequoia Field, and the Juvenile Justice Center in Visalia.

The Civil unit serves a variety of court document through the collection of fees for the general public. The Personnel and Training unit is tasked with hiring, training, promoting, and equipment of Sheriff staff members. This unit also includes Internal Affairs for allegations of misconduct by Sheriff's deputies and civilian staff. The Patrol Services unit provides the Sheriff's office with a variety of services to assist in investigations, cooperation with other law enforcement agencies, administrative tasks, and public relations.

Volunteers

The Sheriff's department uses citizen volunteers to provide and assist in a variety of programs such as being a chaplain; drug and alcohol counselors; Sequoia Mountain rescue operations; the Sheriff's Posse, a group of local farmers and ranchers; and the Sheriff's Volunteers in Patrol (VIP) program.[10]

9 Tulare County Sheriff's Department 2014-2015 Annual Report. Tulare County Sheriff's Department. http://tularecounty.ca.gov/sheriff/index.cfm/community/2014-2015-annual-report/

Explorer Post 355

The Explorer Post 355 is a group within the Tulare County Sheriff's Office designed to provide young men and women between the ages of 14 and 21 years with insight into a sheriff's career. The program teaches youth law enforcement skills such as report writing, police radio operations, and communications. Members are guided by several Sheriff's office staff and are able to participate in department functions such as patrolling and even take part in competitions between other posts.[11]

Search and Rescue

The Tulare County Sheriff's Department maintains a group of trained deputies and volunteers to form the Search and Rescue Unit (SAR) located throughout the County. The SAR responds to incidents through the dramatically different landscapes present within the County. From the San Joaquin Valley to the Southern Sierra Nevada Mountains, the SAR unit works with other jurisdictions like the California Governor's Office of Emergency Service (OES).

Detention Facilities

There are four detention facilities within Tulare County under the County Sheriff's Department. These facilities are the Bob Wiley Detention Facility, the Men's Correctional Facility, the Main Jail, and the Pre-Trial Facility.

City Police Departments

Each of the cities, excluding Farmersville and Lindsay, operate their own police department with specific rules and regulations which residents and visitors must abide by when in the local jurisdictions. A majority of the Tulare County Sheriff's substations are located in or adjacent to the eight incorporated cities. Similar to other public services, various cities within the County are contracted with the Tulare County Sheriff's Department to secure police services for the residents living in each jurisdiction.

4.10.2.2 REGULATORY FRAMEWORK

State

All law enforcement agencies within the State of California are organized and operate in accordance with the applicable provisions of the California Penal Code. This code sets forth the authority, rules of

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10 Ibid.

11 Ibid.

conduct, and training for peace officers. Under state law, all sworn municipal and County officers are state peace officers.

13 California Code Regulations Division 2

Division 2 of Title 13 of the California Code Regulations (CCR) governs the operations of the California Highway Patrol.

Local

County and Cities General Plan and Safety Elements

Local planning policies related to public services are established in each jurisdiction's general plan. In general, jurisdictions have policies in place that state that public services must be provided as the need for those services arises. In addition to these general policies, jurisdictions may have more specific policies tailored to performance objectives, such as those outlined below.

Policies and strategies for police protection services generally include language pertaining to the development of law enforcement programs to reduce and control crime, the planning of future law enforcement facilities concurrently with growth, and the prevention of crime through education. Many jurisdictions also have specific goals, such as a maintaining a certain ratio of sworn officers to citizens, reducing response times, or reducing the overall number of crimes in the community.

Applicable General Plan policies from the largest jurisdiction and the one that would be most affected by the RTP/SCS (Tulare County) are identified below.

Tulare County General Plan

Applicable policies from the Tulare County General Plan are as follows:

- **PFS-7.6 Provision of Station Facilities and Equipment:** The County shall strive to provide sheriff and fire station facilities, equipment (engines and other apparatus), and staffing necessary to maintain the County's service goals. The County shall continue to cooperate with mutual aid providers to provide coverage throughout the County.
- **PFS-7.7 Cost Sharing:** The County shall require new development to pay public facility fees associated with new sheriff/fire station facilities and equipment necessary to maintain the County's service standards in that area. New development may also be required to create or join a special assessment district, or other funding mechanism, to pay the costs associated with the operation of a sheriff/fire station.

- **PFS-7.8 Law Enforcement Staffing Ratios**: The County shall strive to achieve and maintain a staffing ratio of 3 sworn officers per 1,000 residents in unincorporated areas.
- **PFS-7.9 Sheriff Response Time:** The County shall work with the Sheriff's Department to achieve and maintain a response time of:
  - Less than 10 minutes for 90 percent of the calls in the valley region; and
  - 15 minutes for 75 percent of the calls in the foothill and mountain regions.
- **PFS-7.10 Interagency Law Enforcement Protection Cooperation:** The County shall continue to promote cooperative law enforcement protection agreements with the Sheriff's Department, California Highway (CHP), local city police, and adjacent County law enforcement agencies to provide added public protection on a year round basis.
- **PFS-7.11 Locations of Fire and Sheriff Stations/Sub-stations:** The County shall strive to locate fire and sheriff sub-stations in areas that ensure the minimum response times to service calls.
- **PFS-7.12 Design Features for Crime Prevention and Reduction:** The County shall promote the use of building and site design features as means for crime prevention and reduction.

Cities

Each of the cities, excluding Farmersville and Lindsay, operate their own police department with specific rules and regulations which residents and visitors must abide by when in the local jurisdictions. While almost every city maintains their own police department, the policies are generally similar throughout the County.

4.10.2.3 ENVIRONMENTAL IMPACTS

Thresholds of Significance

For the purposes of this EIR, TCAG has determined that implementation of the proposed 2018 RTP/SCS would result in significant adverse impacts to police protection services if any of the following would occur (these thresholds are based on Appendix G and clarified for how they apply to the RTP/SCS):

- Result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, the construction of which could cause significant environmental impacts in order to maintain acceptable service ratios, response times or other service objectives for police protection services.

Methodology

The analysis assesses the impacts to police facilities that could result from implementation of the proposed 2018 RTP/SCS. Implementation of the proposed RTP/SCS is analyzed at the regional level.

Impacts are assessed in terms of both land use and transportation project impacts. By 2042, implementation of the proposed 2018 RTP/SCS would result in a land use pattern and transportation network that is different from existing conditions.

Determination of Significance

The methodology for determining the significance of police resources compares the existing conditions to the RTP/SCS conditions, as required by *CEQA Guidelines* Section 15126.2(a). Impacts on known police resources located within the region were evaluated using the criteria set forth by the CHP, the Tulare County Sheriff's Office, and the *CEQA Guidelines*.

Generally, with regard to impacts to police resources, the greater the change from existing conditions, the more significant the impact on the existing resources. The addition of new jobs, housings, and residents will affect existing police resources and can have significant local impacts.

The development of new transportation facilities may affect police resources, through direct effects by increasing the number of users on the road, and thus increasing the number of incidents to which police officials must respond. Further, as the population would to grow by 133,127 people, and therefore there is the potential for increased demand for police services and potential need for construction of new or expanded facilities.

Since this PEIR analyzes impacts to police resources on a program level only, project-level analysis of impacts would be undertaken as appropriate.

Impact and Mitigation Measures

Impact POLICE-1 **Result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, the construction of which could cause significant environmental impacts in order to maintain acceptable service ratios, response times or other service objectives for police protection services.**

Impacts to police protection services are limited to the physical impacts that would occur as a result of construction of new or physically altered facilities. Service ratios and response times are one tool jurisdictions use to determine the need for such facilities, but are not an environmental impact under CEQA.

Police services are provided by at the local level, as described in the Existing Setting above; major jurisdictions within the County that provide police protection services include the County of Tulare and

the cities of Visalia, Tulare, and Porterville. Each jurisdiction has a methodology for determining appropriate response times and service ratios. As RTP projects are constructed, depending upon the timing, location, and duration of construction activities, several of the proposed transportation projects, including grade crossings, arterials, interchanges, and widenings, could result in temporary changes in police response times (which is one factor that can affect the need for new facilities). By closing off one or more lanes of a roadway, response times could temporarily and intermittently increase as police vehicles take longer routes due to construction activity. The closure of lanes could also potentially cause traffic delays and ultimately inhibit access when responding to service calls. Generally, police response times during project construction are reduced through adherence to road encroachment permits. Traffic control plans are typically required to further reduce impacts on traffic which would also reduce impacts to police response. These impacts would be brief in nature and would be unlikely to result in a determination by a jurisdiction that new facilities would be required. Therefore, construction phase impacts would be less than significant.

By 2042, TCAG region would grow by approximately 133,127 people, 43,921 jobs, and 37,435 housing units. Implementation of the proposed 2018 RTP/SCS would convert approximately 8,884 acres of undeveloped land to more urban uses. Depending on the growth and housing patterns, existing facilities and services may become overextended during the lifetime of the 2018 RTP/SCS. In particular, the 2018 RTP/SCS includes a shift in housing patterns (similar to the 2014 RTP) to emphasize development in urbanized areas. For example, 44 percent of new residential development would be multi-family residential (as compared to 22 percent of existing development being multi-family residential).

Public service standards, performance measures, and related policies are usually set in city and county general plans. To meet the demand for services generated by increasing population, existing facilities would likely need additional personnel and equipment to maintain adequate service levels. As part of project specific environmental review, local agencies would determine the degree of impact to police services and mitigate any impacts in accordance with county and city requirements to protect public safety.

In some cases, depending on the pattern of development, it could be necessary to construct new facilities to maintain adequate response times, equipment, and personnel. Construction of police protection facilities themselves does not typically result in environmental impacts (depending on the size of the facility). In planning new facilities, local jurisdictions take into account growth projections. Many of the environmental impacts of the construction and operation of new facilities are the types of impacts that have been analyzed in this PEIR. Specifically, this PEIR analyzes effects of growth, including infrastructure needed to serve growth, related to air quality, noise, traffic, utilities, and other environmental impact areas. Therefore, any additional impacts as a result of construction of new or

physically altered police protection facilities related to the land use changes and transportation improvements from implementation of the proposed 2018 RTP/SCS are considered less than significant for **Impact POLICE-1**. Mitigation is not required.

Level of Significance Before Mitigation

Impacts related to the construction of new police facilities are considered less than significant.

Mitigation Measures

None required.

Level of Significance After Mitigation

Less than significant.

4.10.2.4 CUMULATIVE EFFECTS

In general, impacts as a result of construction of new police facilities would be confined to the immediate area of the construction of each facility. The potential for overlapping impacts from other cumulative projects is minor, but could add to impacts in surrounding areas (development as a result of RTP/SCSs in neighboring jurisdictions), since the 2018 RTP/SCS could encourage growth in surrounding jurisdictions which could lead to impacts to police departments outside Tulare County which could incrementally add to impacts from growth from RTP/SCSs in surrounding jurisdictions. Nonetheless the contribution of the 2018 RTP/SCS to cumulative impacts is not considered cumulatively considerable.

4.10.3 Schools

4.10.3.1 ENVIRONMENTAL SETTING

Education Facilities

Several institutions within Tulare County provide public education facilities and services to residents including elementary schools, middle schools, secondary schools, postsecondary schools, and colleges/universities, as well as special and adult education. This section addresses impacts that could result from development of new school facilities; discussion of impacts to sensitive receptors including schools is provided in **Section 4.3, Air Quality; Section 4.7, Land Use and Planning;** and **Section 4.8, Noise**.

Tulare County's Office of Education

The Tulare County Superintendent of Schools (TCSOS), Tulare County's Office of Education, oversees, governs, and supports all of the Tulare County kindergarten through 12th grade (K–12) school districts. During the 2016-2017 school year, the Office of Education oversaw 33 elementary school districts, 9 unified districts, 1 high school district and 1 community college district. Charter schools and private schools are also located throughout the County. There are over 100,000 students enrolled in 212 public schools county-wide in school districts range from small to large. Hot Springs School District has 17 students enrolled whereas Visalia Unified has over 28,000 students. Despite the range in size, 85 percent of the districts within the county are considered small with less than 2,500 students and 70 percent of the districts have less than 1,000 students each.[12]

The TCSOS leads the Office of Education through staff development and trainings, new curriculum and instructional procedures, as well as library and media technology services. The County is third in the State with the most districts served behind Kern and Los Angeles counties. The services vary and are geographically spread out throughout rural and urban areas.[13]

Facility planning for public schools is generally based on generation rates. The generation rates are compared against current capacity of individual school facilities that would be affected by the growth. Historical data and future plans for an area are used to project the number of students that will eventually be a part of the community. Generation rates vary by jurisdiction and type of development.

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12 Tulare County Office of Education. About Our Commitment. http://www.tcoe.org/Commitment/index.shtm

13 Ibid.

4.10.3.2 REGULATORY FRAMEWORK

State

California Government Code Section 65995.

California Code Section 65995 authorizes school districts to collect impact fees from developers of new residential and commercial/industrial building space. Senate Bill 50 (SB 50) amended California Code Section 65995 in 1998. Under the provisions of SB 50, Leroy Greene School Facilities Act of 1998, eliminated the ability of cities and counties to require full mitigation of school impacts and replaced it with the ability for school districts to assess fees directly to offset the costs associated with increasing school capacity as a result of new development. The Act states that payment of developer fees is "deemed to be complete and full mitigation" of the impacts of new development. The development that would occur in Tulare County between now and 2042 would be subject to applicable fees determined by the local school districts per California Code Section 65995. The local school districts determine fees in accordance with California Code Section 65995 which can be adjusted every two years.

California Education Code

School facilities and services are subject to the rules and regulations of the California Education Code and governance of the State Board of Education (SBE). The SBE is the 11-member governing and policymaking body of the California Department of Education (CDE) that sets K–12 education policy in the areas of standards, instructional materials, assessment, and accountability.

California Department of Education

The CDE is the government agency responsible for public education throughout the state. The CDE's mission is to provide leadership, assistance, oversight, and resources so that every Californian has access to an education that meets world-class standards. The core purpose of the CDE is to lead and support the continuous improvement of student achievement, with a specific focus on closing achievement gaps. The department oversees funding, and student testing and achievement levels for all state schools. A sector of the CDE, the California State Board of Education is the governing and policy making sector responsible for education policies regarding standards, instructional materials, assessment, and accountability. The CDE and the State Superintendent of Public Instruction are responsible for enforcing education law and regulations; and for continuing to reform and improve public elementary school, secondary school, and childcare programs, as well as adult education and some preschool programs.

Class Size Reduction Kindergarten-University Public Education Facilities Bond Act of 1998

Proposition 1A, the Class Size Reduction Kindergarten-University Public Education Facilities Bond Act of 1998 (Ed. Code, §§ 100400–100405) is a school construction funding measure that was approved by voters on the November 3, 1998 ballot. The Act created the School Facility Program where eligible school districts may obtain state bond funds from Proposition 1A and subsequent propositions.

Local

School Districts

Although the California public school system is under the policy direction of the Legislature, the California Department of Education relies on local control for the management of school districts. In allocating resources among the schools of the district, school district governing boards and district administrators must follow the law, but also set the educational priorities for their schools.

General Plans

Local planning policies related to education services are established in each jurisdiction's general plan. In general, jurisdictions have policies in place that state that public services must be provided as the need for those services arises. In addition to these general policies, jurisdictions may have more specific policies tailored to performance objectives, such as those outlined below.

Tulare County General Plan

Applicable policies from the Tulare County General Plan are as follows:

- **PFS-8.1 Work with Local School Districts:** The County shall work with local school districts to develop solutions for overcrowded schools and financial constraints of constructing new facilities.
- **PFS-8.2 Joint Use Facilities and Programs:** The County shall encourage the development of joint school facilities, recreation facilities, and educational and service program between school district and other public agencies.
- **PFS-8.3 Location of School Sites:** The County shall work with school districts and land developers to locate school sites consistent with current and future land uses. The County shall also encourage siting new schools near the residential areas that they serve and with access to safe pedestrian and bike routes to school.
- **PFS-8.6 School Funding:** To the extent allowed by State law, the County may require new projects to mitigate impacts on school facilities, in addition to the use of school fees. The County will also

work with school districts, developers, and the public to evaluate alternatives to funding/providing adequate school facilities.

4.10.3.3 ENVIRONMENTAL IMPACTS

Thresholds of Significance

For the purposes of this EIR, TCAG has determined that implementation of the proposed 2018 RTP/SCS would result in significant adverse impacts to schools if any of the following would occur (these thresholds are based on Appendix G and clarified for how they apply to the RTP/SCS):

- Result in substantial adverse physical impacts associated with the provision of new or physically altered governmental school facilities, the construction of which could cause significant environmental impacts in order to maintain acceptable service objectives for schools.

Methodology

The analysis assesses the impacts to school facilities that could result from implementation of the proposed 2018 RTP/SCS. Implementation of the proposed 2018 RTP/SCS is analyzed at the regional level. Impacts are assessed in terms of both impacts that could result from transportation projects and changes in land use. By 2042, implementation of the proposed 2018 RTP/SCS would result in a land use pattern and transportation network that is different from existing conditions.

Determination of Significance

The methodology for determining the significance of impacts to schools compares the existing conditions to conditions under the 2018 RTP/SCS, as required by *CEQA Guidelines* Section 15126.2(a). Impacts on known education resources located within the region were evaluated using the criteria set forth by the *CEQA Guidelines*.

Generally, with regards to impacts to schools, the greater the change from existing conditions, the more significant the impact and the more likely construction of facilities would be. The addition of new housing and residents would affect the existing education resources and could result in construction of new facilities that could result in significant impacts at the local level.

The development of new housing units would affect schools directly by increasing the number of residents and therefore children in the area attending local schools. Further, as the population would grow by 133,127 people, the number of students attending public schools would increase.

Since this PEIR analyzes impacts to schools on a program level only, project-level analysis of impacts would be undertaken as appropriate.

Impact and Mitigation Measures

Impact EDU-1 **Result in substantial adverse physical impacts associated with the provision of new or physically altered governmental school facilities, the construction of which could cause significant environmental impacts in order to maintain service objectives for schools.**

By 2042, the TCAG region would grow by approximately 133,127 people; some of this population increase would include school-age children. The addition of 37,435 housing units would result in the addition of approximately 21,336 school-aged children.[14] Depending on the growth and housing patterns, existing schools may become overcrowded during the lifetime of the 2018 RTP/SCS. In particular, the 2018 RTP/SCS includes a shift in housing patterns (as compared to prior RTPs) to emphasize development in urbanized areas. For example, 44 percent of new residential development would be multi-family residential (as compared to 22 percent of existing development being multi-family residential). This increase in development in urban areas could result in the need for additional schools in these areas to ensure adequate school capacity; the construction and operation of these new schools could result in significant impacts.

School standards, performance measures, and related policies are generally set in school district long-range plans. To meet increased demand, existing schools would likely need additional facilities and other resources to maintain adequate educational standards. In some cases, depending on the pattern of development, it would be necessary to construct new schools. Such construction could have impacts on aesthetics, air quality, cultural resources, noise, transportation, as well as public services and utilities.

The timing, siting, and project-specific details of individual development projects will dictate the necessity of constructing new facilities/schools in existing urban areas or creating additional schools to serve new urban areas.

In planning new schools, local school districts take into account growth projections. The environmental impacts of the construction and operation of new schools have been evaluated throughout this PEIR. Specifically, this PEIR analyzes effects of growth, including public service facilities needed to serve growth, related to air quality, noise, traffic, utilities, and other environmental impact areas.

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14 Assumes a single-family generation rate of 0.25 for elementary, 0.22 for middle and 0.10 for high school for all new units as this would be the largest potential number of students generated (multi-family housing generates fewer students).

Therefore, the additional impacts as a result of construction of new or physically altered schools related to the land-use changes and transportation improvements from implementation of the proposed 2018 RTP/SCS are considered less than significant for **Impact EDU-1**. Mitigation is not required.

Level of Significance Before Mitigation

Less than significant.

Mitigation Measures

None required.

Level of Significance After Mitigation

Less than significant.

4.10.3.4 CUMULATIVE EFFECTS

In general, impacts as a result of construction of new schools would be confined to the immediate area of each school. The potential for overlapping impacts from other cumulative projects is minor, but the 2018 RTP/SCS could add to impacts in surrounding areas (development as a result of RTP/SCSs in neighboring jurisdictions), since the 2018 RTP/SCS could encourage growth in surrounding jurisdictions which could lead to impacts to schools outside Tulare County which could incrementally add to impacts from growth from RTP/SCSs in surrounding jurisdictions. Nonetheless the contribution of the 2018 RTP/SCS to cumulative impacts is not considered cumulatively considerable.

4.10.4 Recreation

4.10.4.1 ENVIRONMENTAL SETTING

Parks and Recreation

The diverse resources located in Tulare County provide a wide range of recreational opportunities for residents and tourists alike. Within the County there are approximately 5,701 square miles of forests, parks, trails, and wildlife areas providing multiple opportunities for recreation.[15] The eastern half of the County is comprised primarily of public lands within the Sequoia National Park, the Inyo, Sierra, and Sequoia National Forests, and the Mineral King, Golden Trout, and Domelands Wilderness areas. Recreational lands in the County are governed by a variety of agencies, including municipal park departments, independent park districts, counties, cities, community service districts, and federal and state agencies.

Parkland Existing Conditions

Federal Parks and Recreation

There are seven parks and recreation areas under federal jurisdiction within Tulare County; see **Table 4.10.4-1, National Parks and Recreation in Tulare County**. Tulare County contains significant portions of federal public lands, largely Sequoia National Forest and Sequoia National Park. These are maintained by the U.S. Forest Service and the National Park Service, respectively. Sequoia National Forest lies in the southeastern corner of Tulare County while the Sequoia National Park is located in the northeastern portions of the County. Both national forests and parks provide camping facilities and an extensive range of other outdoor recreation opportunities.

Lake Kaweah and Lake Success are two federally maintained recreational areas. Lake Kaweah was built and is maintained by the Army Corps of Engineers and features recreational activities like biking, boating, and hiking. Lake Success was also built and is maintained by the Army Corps of Engineers mainly for flood control of the Tule River. The lake features activities such as boating and camping.

15 Recirculated Draft EIR Tulare County General Plan 2030 Update. February 2010

Table 4.10.4-1
National Parks and Recreation in Tulare County

Name	Location	Acres
Lake Kaweah	25 miles east of Visalia on Highway 198	2558.0
Lake Success	10 miles SE of Porterville on Highway 198	2450.0
Sequoia National Forest	Southeastern portion of Tulare County	n/a
Giant Sequoia National Monument	Covers areas north and south of Sequoia and Kings Canyon National Parks	n/a
Sequoia and Kings Canyon National Parks (SEKI)	Northeastern portion of Tulare County	n/a
Inyo National Forest	Northeastern Tulare County	n/a
Sierra National Forest	Northeastern Tulare County	n/a
Total Acres		**5,008.0**

Source: Recirculated Draft EIR Tulare County General Plan 2030 Update. February 2010
Note: Giant Sequoia National Forest, Sequoia National Monument, Inyo National Forest, Sierra National Forest and Sequoia and Kings Canyon National Parks span several counties. The exact number of acres in Tulare County is not available.

State Parks and Forests

There is one state park and one state forest in Tulare County. Colonel Allensworth State Historic Park is managed by the California Department of Parks and Recreation and preserved for its significance to the history and culture of one of the first African-American settlements in Tulare County. Today, the park, located outside the City of Earlimart, features a museum and variety of buildings that are restored to show the original lifestyle of the community. In addition, the state park provides nearby camping facilities as well as outdoor recreational activities such as biking. Tulare County also contains Mountain Home State Forest which consists of 4,807 acres of parkland outside of the City of Porterville. The Forest is used for forestry education, research, and recreation.[16]

Tulare County Parks

The Tulare County Parks and Recreation Department (TCPRD) maintains approximately 460 acres of parks and open space at 13 sites. The County's facilities include fishing lakes, veterans and senior

16 Tulare County. Tulare County General Plan 2030 Update (p 8-5). February, 2010.

community and recreation buildings, group and individual campgrounds, boating, and museums.[17] The location and acreage of Tulare County parks are shown in **Table 4.12.4-2**.

Table 4.12.4-2
Tulare County Parks

Name	Location	Acres
Alpaugh Park	Located in Alpaugh on Road 40	3.0
Balch Park Campgrounds	20 miles NE of Springville in the Sierras	160.0
Bartlett Park	8 miles east of Porterville on North Drive	127.5
Camp COTYAC	Near Ponderosa in Eastern Tulare County	8.0
Cutler Park	5 miles east of Visalia on Highway 216 to Ivanhoe	50.0
Elk Bayou Park	6 miles SE of Tulare on Avenue 200	60.0
Kings Rivers Nature Preserve	2 miles east of Highway 99 on Road 28	85.0
Ledbetter Park	1 mile northwest of Cutler on Road 124/Hwy 63	11.0
Mooney Grove Park	2 miles south of Caldwell Avenue on Mooney Blvd. in South Visalia	143.0
Pixley Park	1 mile NE of Pixley on Road 124	22.0
Tulare County Museum	In Mooney Grove Park, South Visalia	8.5
Woodville Park	Located in Avenue 166 in Woodville	10.0
West Main Street Park	2 blocks west of County Courthouse on Main Street in Downtown Visalia	5.0
Total Acres		**693.0**

Source: Recirculated Draft EIR Tulare County General Plan 2030 Update. February 2010

City Parks

All eight incorporated cities in Tulare County operate a parks and recreation department. Below in **Table 4.10.4-3, City Parks in Tulare County**, the name and location of each park under local jurisdiction is described. The cities of Tulare and Visalia have the most parks in the County, 18 and 43 respectively. Some cities like the City of Woodlake have as few as three parks. The City of Porterville has four pocket parks, three neighborhood parks, four community parks, two specialized recreation parks, and two trails/parkways.

17 County of Tulare, General Plan 2030 Update, 2010 Background Report, page 4-3, 2010a

Table 4.10.4-3
City Parks in Tulare County

City	Number of Parks
Dinuba	9
Exeter	6
Farmersville	6
Lindsay	3
Porterville	15
Tulare	18
Visalia	40
Woodlake	4

Sources:
City of Exeter, Google Earth, 2018
City of Farmersville Parks and Recreation Department. http://www.cityoffarmersville-ca.gov/200/Parks-Recreation
City of Lindsay Comprehensive General Plan. July 1989
City of Tulare Department of Parks and Recreation. http://www.tulare.ca.gov/departments/community-development/parks-recreation/parks
City of Visalia Parks and Trail Department. https://www.visalia.city/depts/parks_n_recreation/parkinfo/default.asp
Google Maps, 2018

Private Recreational Resources

Private recreational resources within the County provide for various facilities and programs to the community. Providers include organizations such as the Boys & Girls Club and the YMCA, along with various sports leagues, clubs, and other organizations.

4.10.4.2 REGULATORY FRAMEWORK

Federal

US Department of Transportation Act

Section 4(f) of the US Department of Transportation Act of 1966 (US DOT Act) (49 USC Section 303) was enacted as a means of protecting publicly owned public parks, recreation areas, and wildlife/waterfowl refuges as well as historic sites of local, state or national significance, from conversion to transportation uses. Section 4(f) requires a comprehensive evaluation of all environmental impacts resulting from federal-aid transportation projects administered by the Federal Highway Administration, Federal Transit Administration, and Federal Aviation Administration that involve the use, or interference with use, of the following types of land:

- Public park lands
- Recreation areas
- Wildlife and waterfowl refuges
- Publicly or privately owned historic properties of federal, state, or local significance

This evaluation – called the Section 4(f) statement – must be sufficiently detailed to permit the US Secretary of Transportation to determine that:

- there is no feasible and prudent alternative to the use of such land;
- the program includes all possible planning to minimize harm to any park, recreation area, wildlife and waterfowl refuge, or historic site that would result from the use of such lands; or
- if there is a feasible and prudent alternative, a proposed project using Section 4(f) lands cannot be approved by the Secretary; or if there is no feasible and prudent alternative, the proposed project must include all possible planning to minimize harm to the affected lands.

Detailed inventories of the locations and likely impacts on resources that fall into the Section 4(f) category are required in project-level NEPA environmental assessments.

In August 2005, Section 4(f) was amended to simplify the process for approval of projects that have only minimal impacts on lands affected by Section 4(f). Under the new provisions, the US Secretary of Transportation may find such a minimal impact if consultation with the State Historic Preservation Officer (SHPO) results in a determination that a transportation project will have no adverse effect on the historic site or that there will be no historic properties affected by the proposed action. In this instance, analysis of avoidance alternatives is not required and the Section 4(f) evaluation process is complete.

State

Quimby Act

The Quimby Act of 1975 (Gov. Code, § 66477) states that "the legislative body of a city or county may, by ordinance, require the dedication of land or impose a requirement of the payment of fees in lieu thereof, or a combination of both, for park or recreational purposes as a condition to the approval of a tentative or parcel map." Revenues generated through the Quimby Act cannot be used for the operation and maintenance of park facilities. The dedicated land or fees may only be used for the development or rehabilitation of neighborhood or community parks or recreational facilities in the subdivision they were provided for, according to AB 1359 (Chapter 412, Statutes of 2013), unless certain requirements are met and an exception is made.

Mitigation Fee Act

The California Mitigation Fee Act, California Code sections 66000, *et seq*., allows local governments to establish fees to be imposed on development projects for the purpose of mitigating the impact of development on a city's ability to provide specified public facilities. In order to comply with the Mitigation Fee Act a city or county must follow the following primary requirements: (1) Make certain determinations regarding the purpose and use of a fee and establish a nexus or connection between a development project or class of project and the public improvement being financed with the fee; (2) Segregate fee revenue from the General Fund in order to avoid commingling of capital facilities fees and general funds; (3) For fees that have been in the possession of a local government for five years or more and for which the dollars have not been spent or committed to a project, the local government must make findings each fiscal year.

Local

General Plans

Local planning policies related to recreation are established in each jurisdiction's general plan. In general, jurisdictions have policies in place that state that recreation services must be provided as the need for those services arises. In addition to these general policies, jurisdictions may have more specific policies tailored to performance objectives, such as those outlined below. Policies for parks and recreation may include standards for park acreage and requirements for the provision of parks in new residential developments. General Plans also contain policies to develop self-supporting recreation programs and pursue joint use of school sites, utility rights-of-way, and other public lands for park, recreation, and open space purposes.

Tulare County General Plan

Specifically in regards to parks, applicable policies from the Tulare County General Plan include the following:

- **ERM-5.1 Parks as Community Focal Points:** The County shall strengthen the role of County parks as community focal points by providing community center/recreation buildings to new and existing parks, where feasible.
- **ERM-5.2 Park Amenities:** The County shall provide a broad range of active and passive recreational opportunities within community parks. When possible, this should include active sports fields and facilities, community parks. When possible, this should include active sports fields and facilities, community center/recreation buildings, children's play areas, multi-use areas and trails, sitting areas, and other specialized uses as appropriate.

- **ERM-5.3 Park Dedication Requirements:** The County shall require the dedication of land and/or payment of fees, in accordance within local authority and State law (for example the Quimby Act), to ensure funding for the acquisition and development of public recreation facilities.

- **ERM-5.4 Park-Related Organizations:** The County shall consider the use of existing entities or the creation of assessment districts, homeowners associations, or other types of districts to generate funds for the acquisition and development of parkland and/or historical properties as development occurs in the County.

- **ERM-5.5 Collocated Facilities:** The County shall encourage the development of parks near public facilities such as schools, community halls, libraries, museums, prehistoric sites, and open space areas and shall encourage joint-use agreements whenever possible.

- **ERM-5.6 Location and Size Criteria for Parks:** Park types used in Tulare County are defined as follows:

  – Neighborhood Play Lots (Pocket Parks). The smallest park type, these are typically included as part of a new development to serve the neighborhood in which they are contained. Typical size is one acre or less. If a park of this type is not accessible to the general public, it cannot be counted towards the park dedication requirements of the County. Pocket Parks can be found in communities, hamlets, and other unincorporated areas.

  – Neighborhood Parks. Neighborhood parks typically contain a tot lot and playground for 2-5 year olds and 5-12 year olds, respectively, one basketball court or two half-courts, baseball field(s), an open grassy area for informal sports activities (for example, soccer), and meandering concrete paths that contain low-level lighting for walking or jogging. In addition, neighborhood parks typically have picnic tables and a small group picnic shelter. These park types are typically in the range of 2 to 15 acres and serve an area within a ½ mile radius. Neighborhood parks can be found in communities, hamlets, and other unincorporated areas.

  – Community Parks. Community parks are designed to serve the needs of the community as a whole. These facilities can contain the same facilities as the neighborhood park. In addition, these parks can contain sports facilities with night lighting, community centers, swimming pools, and facilities of special interest to the community. These parks are typically 15 to 40 acres in size and serve an area within a 2 mile radius. Community parks can be found in communities, planned community areas, and large hamlets.

  – Regional Parks. Regional parks are facilities designed to address the needs of the County as a whole. These facilities may have an active recreation component (play area, group picnic area, etc.), but the majority of their area is maintained for passive recreation (such as hiking or horseback riding), and natural resource enjoyment. Regional parks are typically over 200 acres in size, but smaller facilities may be appropriate for specific sites of regional interest.

  – The following guidelines should be observed in creating and locating County parks:

    1. The County shall strive to maintain an overall standard of five or more acres of County owned improved parkland per 1,000 population in the unincorporated portions of the County;

2. Neighborhood play lots (pocket parks) are encouraged as part of new subdivision applications as a project amenity, but are not included in the calculation of dedication requirements for the project;

3. Neighborhood parks at three acres per 1,000 population, if adjoining an elementary school and six acres per 1,000 population if separate [ERME IV-C; Open Space; Policy 3; Pg. 101];

4. Community parks at one-acre per 1,000 population if adjoining a high school and two acres per 1,000 population if separate [ERME IV-C; Open Space; Policy 4; Pg. 101];

5. Regional parks at one-acre per 1,000 population;

6. Only public park facilities shall be counted toward Countywide parkland standards; and

7. A quarter mile walking radius is the goal for neighborhood parks.

- **ERM-5.11 Cooperation with Federal and State Agencies:** The County shall work with federal and state agencies that manage land within the County, as appropriate.

- **ERM-5.15 Open Space Preservation:** The County shall preserve natural open space resources through the concentration of development in existing communities, use of cluster development techniques, maintaining large lot sizes in agricultural areas, discouraging conversion of lands currently used for agricultural production, limiting development in areas constrained by natural hazards, and encouraging agricultural and ranching interests to maintain natural habitat in open space areas where the terrain or soil is not conducive to agricultural production.

- **ERM-5.18 Night Sky Protection:** Upon demonstrated interest by a community, mountain service center, or hamlet the County will determine the best means by which to protect the visibility of the night sky.

- **ERM-5.19 Interagency Cooperation:** The County shall cooperate with federal land management agencies to develop and promote the establishment of Three Rivers and Springville as gateway communities.

- **ERM-5.20 Allowable Uses on Timber Production Lands:** The County shall allow uses (not related to forest production) on lands designated Resource Conservation in forestry production areas, provided it is demonstrated that:

  – they are compatible with forestry uses;

  – will not interfere with forest practices;

  – consider forest site productivity and minimize the loss of productive forest lands;

  – will meet standards relating to the availability of fire protection, water supply, and waste disposal; and

  – will not degrade the watershed and/or water quality due to increased erosion.

In regards to recreation, applicable policies from the Tulare County General Plan include the following:

- **ERM-5.7 Public Water Access:** The County shall give a high priority to the acquisition of public access rights to water courses. Acquisition of multi-purpose sites, such as the protection of drainage ways, wildlife habitats, and scenic assets, shall be encouraged. In the lakefront areas of Lake Success and Lake Kaweah, special consideration should be given to matching recreational needs of the community with lake access.

- **ERM-5.8 Watercourse Development:** The County, in approving recreational facilities along major watercourses, shall require a buffer of at least 100 feet from the high-water line edge/bank and screening vegetation as necessary to address land use compatibility issues. The establishment of a buffer may not be required when mitigated or may not apply to industrial uses that do not impact adjoining uses identified herein.

- **ERM-5.9 Encourage Development of Private Recreation Facilities:** The County should encourage private interests to establish new commercial recreation opportunities in the County. The intensity of such development should not exceed the ability of the natural environment of the site and its surroundings to accommodate the new development and should be compatible with surrounding land uses.

  Such facilities may include, but are not limited to, campgrounds, destination resorts, hotels, ball courts, skeet clubs and facilities, hunting and fishing clubs, equestrian facilities, and recreational camps.

- **ERM-5.10 Recreational Facilities for Special Use Groups:** The County should encourage the provision of recreation facilities and activities for special use groups such as physically disabled, mentally handicapped, and senior citizens.

- **ERM-5.12 Meet Changing Recreational Needs:** The County shall promote the continued and expanded use of national and state forests, parks, and other recreational areas to meet the recreational needs of County residents.

- **ERM-5.13 Funding for Recreational Areas and Facilities:** The County shall support the continued maintenance and improvement of existing recreational facilities and expansion of new recreational facilities opportunities for County, state, and federal lands. The County shall strive to obtain adequate funding to improve and maintain existing parks, as well as construct new facilities.

- **ERM-5.15 Open Space Preservation:** The County shall make efforts to involve community members in the design and development of park facilities.

- **ERM-5.16 Regional Recreation Planning:** Tulare County shall, on a cooperative, regionally planned basis, provide for regional recreation needs in fair proportion to the demand from each County, specifically Fresno, Kings, and Kern Counties.

- **ERM-5.17 Activity Prioritization:** Where necessary, one or more conflicting recreational uses shall be restricted, or prohibited, and a priority of uses established. This is particularly important in water-oriented sports, where such uses as power-boating, swimming, sailing, canoeing, water skiing, skin

diving, and fishing all compete for the same water and cannot safely co-exist if concentrations become too great.

Tulare County Code

Part II Chapter 5 of the County Code describes additional requirements for County parks and recreation areas.

Cities

Similarly to the County of Tulare, the eight incorporated cities within the County have ordinances that establish policies and requirements for parks and recreation.

4.10.4.3 ENVIRONMENTAL IMPACTS

Thresholds of Significance

For the purposes of this EIR, TCAG has determined that implementation of the proposed 2018 RTP/SCS would result in significant adverse impacts to recreational facilities if any of the following would occur (these thresholds are based on Appendix G and clarified for how they apply to the RTP/SCS):

- Result in substantial adverse physical impacts associated with the provision of new or physically altered parks and recreational facilities, need for new or physically altered parks and recreational facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios or other performance objectives for parks.
- Increase the use of existing neighborhood and regional parks or other recreational facilities such that substantial deterioration of the facilities would occur.

Methodology

This section summarizes the methodology used to evaluate the impacts of implementation of the 2018 RTP/SCS on recreational facilities.

The analysis assesses the impacts to recreational resources that could result from implementation of the proposed 2018 RTP/SCS. Impacts are analyzed at the regional level.

Impacts are assessed in terms of both land use and transportation project impacts. By 2042, implementation of the proposed 2018 RTP/SCS would result in a land use pattern and transportation network that is different from existing conditions and that would affect recreation resources.

Determination of Significance

The methodology for determining the significance of recreational facilities impacts compares the existing conditions to the RTP/SCS conditions, as required by *CEQA Guidelines* Section 15126.2(a). Impacts on known recreational facilities located within the region were evaluated using the criteria set forth by the *CEQA Guidelines*.

Generally, with regard to recreational impacts, the greater the increase in population, the more significant the impact to the recreational facilities. As the area's population continues to grow, the County's recreational facilities will be used more often and by more people.

The development of new transportation facilities may also affect recreational facilities, through indirect effects, including traversing recreational lands. While the region contains a fair number of recreational facilities; additional growth will lead to wear and tear on these facilities, therefore, the impacts to recreational facilities could be significant.

Since this PEIR analyzes impacts to recreational facilities on a program level only, project-level analysis of impacts would be undertaken as appropriate.

Impacts and Mitigation Measures

Impact REC-1 **Result in substantial adverse physical impacts associated with the provision of new or physically altered parks and recreational facilities, need for new or physically altered parks and recreational facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios or other performance objectives for parks.**

Implementation of the transportation projects and land use patterns in the 2018 RTP/SCS would require the construction or expansion of recreational facilities which might have an adverse physical effect on the environment. The 2018 RTP/SCS includes linear recreation facilities such as bicycle and pedestrian networks, and recreational trails (funded through the TAP program) construction of which might have an adverse physical effect on the environment.[18]

[18] TAP is funding through MAP 21 set asides. TAP funds are reserved for a variety of special projects on the Federal-aid system, which serve to enhance or enlarge the function or purpose of a project beyond that normally required for transportation service or environmental mitigation requirements.

The Plan also encourages increased development in TPAs to accommodate growth, the result of which may necessitate the construction or expansion of recreation facilities within or in nearby accessible locations to TPAs, which are typically urban areas.

Most local jurisdictions have goals and standards for parkland/open space per capita (for example Visalia's standard is 5.0 acres per 1,000 residents) and strive to ensure that new developments make adequate provisions for new recreational facilities. See discussion of Tulare County and Visalia policies and standards in the Reregulate Setting section.

Development and expansion of parks and recreational facilities in urban areas is normally beneficial, although there may be limited instances where impacts will occur during construction of the park. Occasionally operation of such new facilities can have the potential to impact sensitive receptors in the immediate area (noise and lighting in particular). As part of project specific environmental review, local agencies would determine the degree of impact from any new parks and recreational facilities and mitigate such impacts as feasible.

In planning new facilities, local jurisdictions take into account growth projections. Many of the environmental impacts of the construction and operation of new facilities have been analyzed throughout this PEIR. Specifically, this PEIR analyzes effects of growth, including public service facilities needed to serve growth, related to air quality, noise, traffic, utilities, and other environmental impact areas.

Implementation of the 2018 RTP/SCS would not result in additional significant impacts as a result of construction of new or physically altered parks and recreational facilities. **Impact REC-1** would be less than significant. Mitigation is not required.

Level of Significance Before Mitigation

Less than significant.

Mitigation Measures

None required.

Level of Significance After Mitigation

Impacts associated with construction of new parks and recreational facilities would be less than significant.

Impact REC-2 **Increase the use of existing neighborhood and regional parks or other recreational facilities such that substantial physical deterioration of the facility would occur or be accelerated.**

Implementation of the transportation projects and land use patterns in the 2018 RTP/SCS could increase the use of existing neighborhood and regional parks or other recreational facilities such that substantial physical deterioration of the facilities would occur or be accelerated, constituting a significant impact. The 2018 RTP/SCS provides transportation improvements to accommodate the population increase of approximately 133,127 persons from 2017 to 2042. The 2018 RTP/SCS would encourage new growth in urbanized areas such as TPAs sometimes above their existing planned density levels due in part to the fact that the timeframe of the 2018 RTP/SCS extends beyond even the most current general plans. Therefore, there would be an increase in the use of existing neighborhood parks and other recreational facilities such that substantial physical deterioration of facilities may occur.

The County offers significant amounts of federally protected national parks that provide a respite from city life and play an important role in providing regional open space to residents. Due to their large size and federally protected status, these parks would not be likely to experience an accelerated rate of deterioration of facilities.

Local jurisdictions generally have planned for additional residents and a growth pattern consistent with the 2018 RTP/SCS. However, as noted in **Section 4.7, Land Use and Planning,** the 2018 RTP/SCS has a horizon year beyond the current horizon year of the existing general plans.

As discussed under **Impact REC-1,** existing parks and recreation facilities would be impacted as the population grows. The increased demand on some existing facilities (in particular urban neighborhood and community parks) would have the potential to physically affect these facilities.

However, TCAG has played an important role in promoting active transportation in the county by providing funding and logistical support to its member agencies for the implementation of pedestrian and bicycle projects and programs. The Tulare County Regional Active Transportation Plan (RATP), known more informally as Walk 'n Bike Tulare County, is further demonstration of TCAG's commitment to active transportation. The projects consist of trails, bike lanes, and marked and signed bike routes, as well as sidewalk improvements along street frontages where they do not currently exist. These projects are integrated with a more compact land use pattern to encourage daily recreational opportunities.

Nonetheless, because physical deterioration could result, impacts on existing parks and recreational facilities from the combination of development and transportation projects associated with the 2018

RTP/SCS are considered significant for **Impact REC-2.** Mitigation is required. **Mitigation Measure MM-REC-2(a)** is provided below.

Level of Significance Before Mitigation

Significant.

Mitigation Measures

MM-REC-2(a): Consistent with the provisions of Section 15091 of the *State CEQA Guidelines*, TCAG has identified mitigation measures capable of avoiding or reducing the significant effects on the integrity of recreation facilities, particularly neighborhood parks in the vicinity of TPAs that are within the jurisdiction and responsibility of local agencies (land use projects) and implementing agencies (transportation projects).. Where the Lead Agency has identified that a project has the potential for significant effects, the Lead Agency can and should consider mitigation measures capable of avoiding or reducing significant impacts on the use of existing neighborhood and regional parks or other recreational facilities to ensure compliance with county and city general plans and the Quimby Act,. Such measures include but are not limited to the following:

- Prior to the issuance of permits, where projects require the construction or expansion of recreational facilities or the payment of equivalent Quimby fees, consider increasing the accessibility to natural areas and lands for outdoor recreation, in coordination with local and regional recreational planning and/or responsible management agencies.

- Prior to the issuance of permits, where projects require the construction or expansion of recreational facilities or the payment of equivalent Quimby fees, encourage measures which reduce recreational facility costs and make better use of existing recreational facilities, using strategies such as:

  – Utilizing "green" development techniques;

  – Promoting water-efficient land use and development;

  – Encouraging multiple uses; and

  – Including trail systems and trail segments identified in General Plans.

- Prior to the issuance of permits, where construction and operation of projects would require the acquisition or development of protected recreation lands, expand existing neighborhood parks or develop new neighborhood parks such that there is no net decrease in acres of neighborhood park area available per capita in the area.

Level of Significance After Mitigation

Because this PEIR evaluates impacts at the programmatic level, all project circumstances are not foreseeable, and these mitigation measures may not be feasible or effective for some projects. Even with implementation of **Mitigation Measure MM REC-2(a)**, impacts could remain significant and unavoidable. No additional feasible mitigation measures are available to reduce significant and unavoidable impacts beyond those identified in this PEIR.

4.10.4.5 CUMULATIVE EFFECTS

The 2018 RTP/SCS would increase demand for parks and recreational facilities. To the extent that the 2018 RTP/SCS would encourage development on the periphery of the County, it could increase demand for parks and recreational facilities in Tulare and surrounding counties. Similarly, development on the periphery of these other counties would result in demand for recreational facilities in Tulare County. Given the recreational resources in Tulare County, development in other counties would tend to increase demand for recreational facilities with statewide appeal. Therefore the 2018 RTP/SCS would add to impacts from surrounding counties on physical deterioration of existing parks and recreational facilities. The 2018 RTP/SCS impact would be significant and cumulatively considerable, and would add to the impacts of development in surrounding areas (transportation projects and development in accordance with RTP/SCS plans of other jurisdictions). Implementation of **Mitigation Measure MM-REC-2(a)** would reduce the 2018 RTP/SCS impacts; however, the Plan's impact would remain significant and cumulatively considerable.

4.11 TRANSPORTATION

This section describes the current transportation system in the TCAG region and discusses the impacts of the 2018 RTP/SCS on transportation. In addition, this PEIR provides mitigation measures for subsequent, site-specific environmental review documents prepared by lead agencies to reduce identified impacts.

4.11.1 ENVIRONMENTAL SETTING

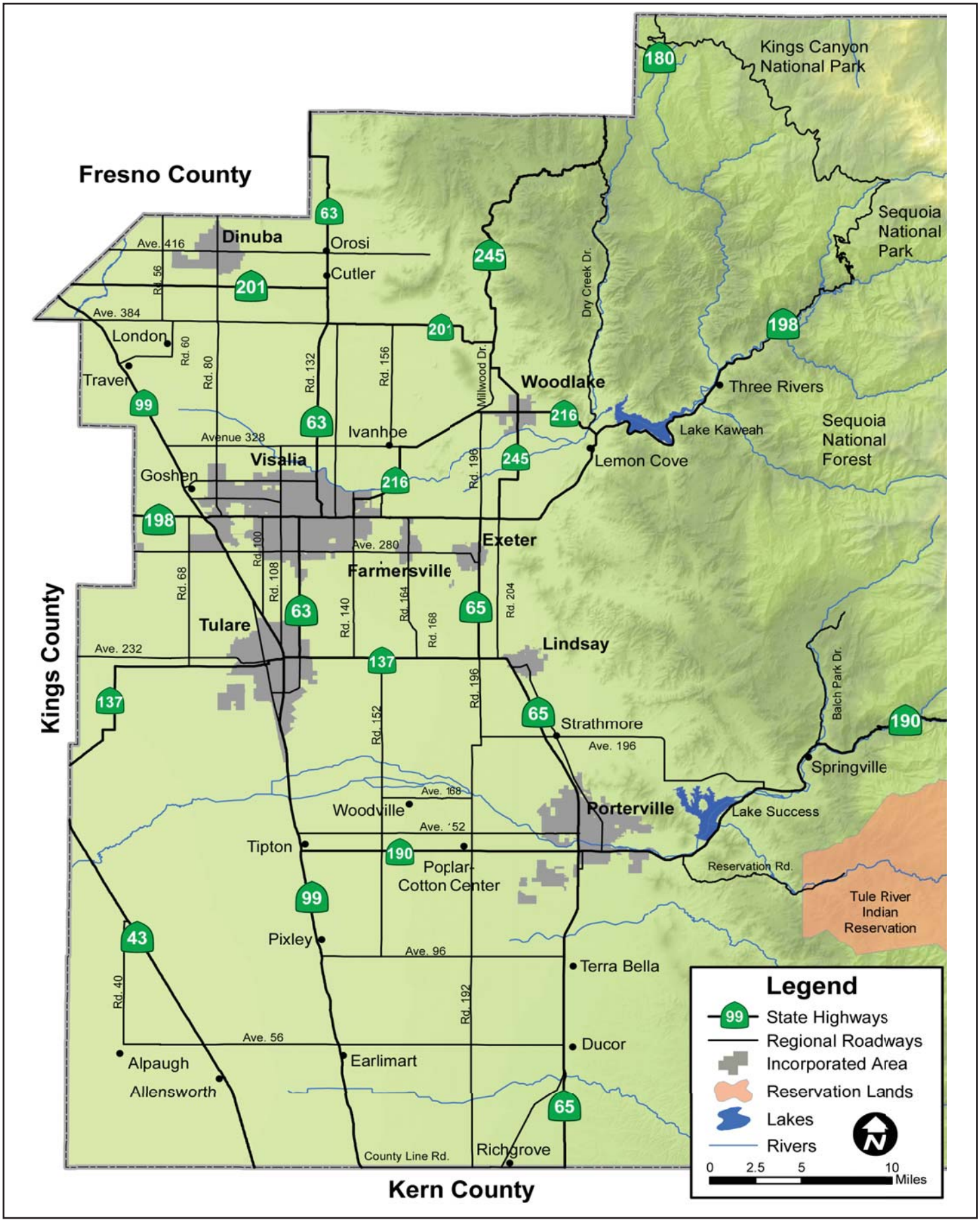
The environmental setting is an assessment of existing conditions relevant to transportation. It includes a description of the highway and street system, the public transit system and services, as well as "active mode" (walking and biking) facilities. Tulare's airports and goods movement systems (rail, truck, and air) are also essential parts of the regional transportation network and the 2018 RTP/SCS. This section also includes baseline data on the use of these transportation networks.

Regional Highway and Local Street System

Regional highways represent the fundamental network for longer distance movement of goods and people in and beyond the region. Regional streets and highways are used by nearly all travel modes including automobiles, ridesharing vehicles, public and common carrier transit, the intra- and inter-regional trucking industry, bicyclists, pedestrians, and other non-motorized or "active" modes of transportation where permitted. These layered transportation systems must operate efficiently in order to reduce traffic congestion, improve air quality, and move people and goods safely.

Regionally significant facilities are defined as those with an arterial or higher functional classification, as well as any other facility that serves regional travel needs, including local roads which provide access roads to major activity centers in the region. There are no Interstate or US Highways in Tulare County. There are 10 State Routes: State Routes 43, 63, 65, 99, 137, 190, 198, 201, 216 and 245. The 2018 RTP/SCS defines the regional road system as those routes having regional significance to Tulare County's circulation infrastructure. Refer to **Figure 4.11-1, Tulare County Regional Road System,** for the location of major roadways.

State Route 43 is a state highway in the southwest edge of the County, connecting Bakersfield to Selma, intersected by SR 198, a state highway with portions of expressway and freeway which runs east to west, connecting the California Central Coast to the Central Valley, from US 101 to the Sequoia National Park, famous for its ancient trees and old-growth forests, and holding the highest point in the contiguous United States. SR 198 is intersected by SR 99, also known as the Golden State Highway, connecting most major Central Valley cities from Sacramento to the Grapevine in Los Angeles County, a famous ascent through the Tejon Pass in the Tehachapi Mountains and Los Padres National Forest. SR 99 connects to



SOURCE: Tulare County Association of Governments, 2018

FIGURE **4.11-1**

IMPACT SCIENCES

Tulare Country Regional Road System

1290.001•04/18

SR 201, SR 190, and SR 137, which run east to west, connecting the cities of Dinuba, Tulare, Lindsay, and Porterville to the State Highway system. SR 190 has a roundabout and multiple planned roundabouts as well as portions of freeway, running east/west from SR 99 to the Sequoia National Forest. SR 65 is a highway with portions of freeway in Porterville, connecting the eastern cities of Porterville, Lindsay, and Exeter to Visalia and Tulare, with SR 63 connecting the urbanized area of Visalia and Tulare. SR 63 is also known as Mooney Boulevard, with portions from 4-6 lanes, high volume, and high frequency transit in Visalia. SR 245 and SR 216 are state highways east of Visalia connecting to the city of Woodlake, with SR 245 running north/south, near to the entrance of Kings Canyon National Park.

TCAG, in conjunction with its member agencies and Caltrans, has defined its regionally significant road system for transportation modeling purposes based on the Federal Highways Administration (FHWA) Functional Classifications System of Streets and Highways. In general, the classification systems used by local agencies coincides with the FHWA Functional Classification System; however, with respect to design standards or geometrics of a particular street or road within a local jurisdiction, each local agency has their own specific design criteria. Regionally significant roadways, which are thoroughfares significant to region-wide travel with a preferred limited spacing of intersections and signals, total approximately 850 miles in the county

Roadway Classification System. Functional classification is a process for grouping streets and highways into classes, or system subsets, according to the type of service they are intended to provide. Fundamental to this process is the recognition that individual streets and roads usually do not serve travel in isolation; most travel involves movement through a network of roads. It is necessary to plan how this travel can be channeled through the network in a logical and efficient manner. Functional classifications define the channelization process by defining the role that a particular road or street should service within the larger network. **Table 4.11-1** identifies the functional classes in urban areas and **Table 4.11-2** identifies functional classes in rural areas. **Figure 4.11-2, Roadway Classifications**, shows roadways classifications as defined by FHWA; however, for modeling purposes, roadway classifications do not necessarily match that of FHWA.

Table 4.11-1
Urban Functional Classification System-Definitions

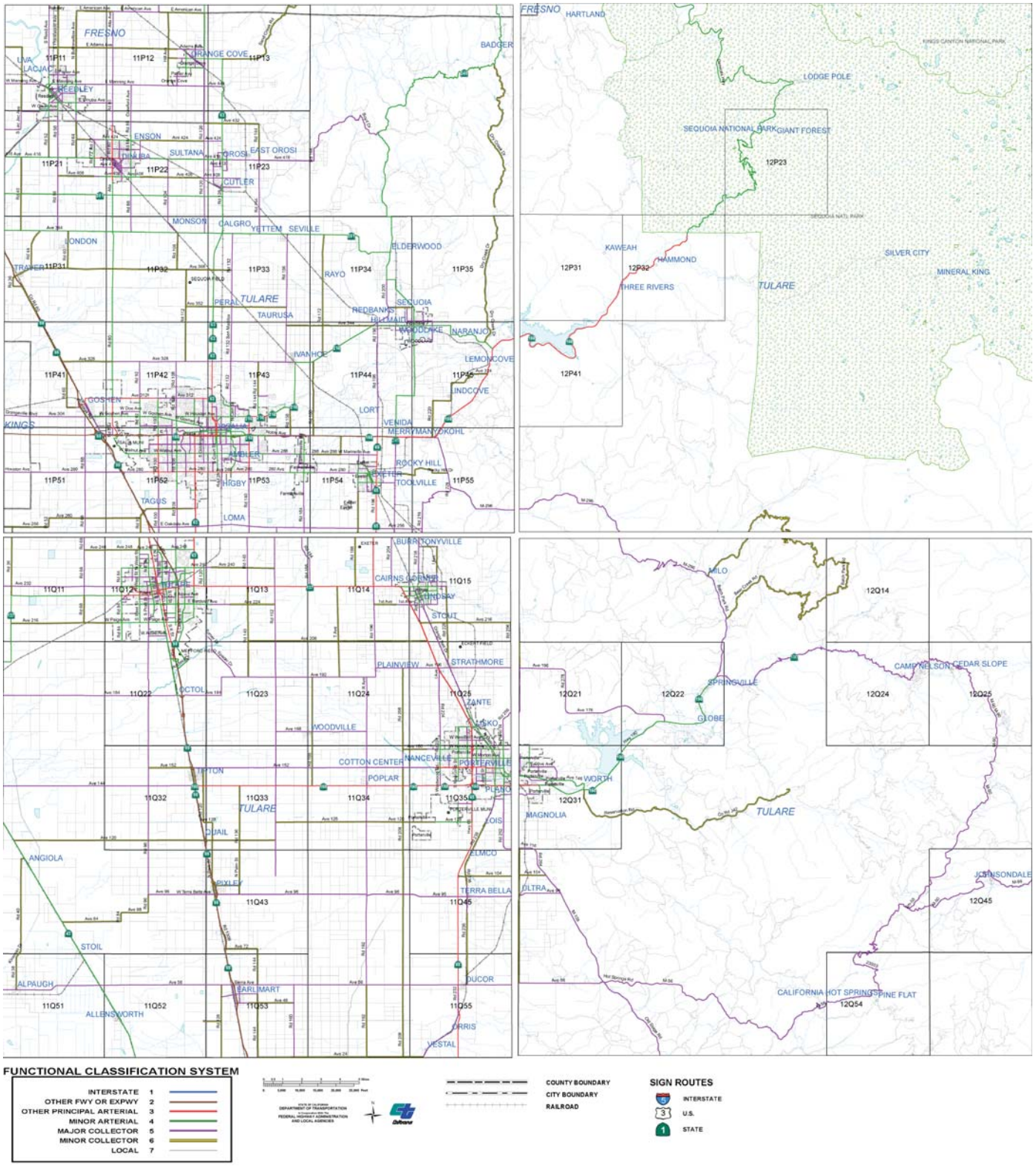
Classification	Primary Function	Direct Land Access	Speed Limit	Parking
Freeway/Expressway	Traffic Movement	None	46-70	Prohibited
Primary Arterial	Traffic Movement/ Land Access	Limited	35-45	Prohibited
Secondary Arterial	Traffic Movement/ Land Access	Restricted	30-35	Generally Prohibited
Collector	Distribute Traffic Between Local Streets & Arterials	Safety Controls, Limited Regulation	25-30	Limited
Local	Land Access	Safety Controls Only	25	Permitted

Source: Federal Highway Administration (1989)

Table 4-11-2
Rural Functional Classification System-Definitions

Classification	Primary Function	Direct Land Access*	Speed Limit**	Parking***
Freeway/Expressway	Traffic Movement	Safety Controls	55-70	Prohibited
Arterial	Traffic Movement/ Land Access	Safety Controls	55	Permitted
Collector	Distribute Traffic Between Local Streets & Arterials	Safety Controls	55	Permitted
Local	Land Access	Safety Controls	55	Permitted

** Access to arterials is generally limited or restricted if it provides access to a land subdivision or an industrial, commercial, or multi-family use. Access is granted on a controlled basis to parcels fronting on expressways where there is not a frontage road or access to another road.*
*** All County roads have a 55 mph operating speed unless otherwise indicated.*
**** Parking is permitted on all County roads unless otherwise indicated.*
Source: Highway Functional Classification - Concepts, Criteria and Procedures US Department of Transportation, Federal Highway Administration (1989)



SOURCE: California Department of Transportation, 2018

FIGURE **4.11-2**

Roadway Classifications

IMPACT SCIENCES

1290.001•04/18

Existing Transit Service[1]

Tulare County transit services include fixed-route, inter-city, dial-a-ride, and demand response operations. Fixed route services are offered by Visalia Transit, Porterville Transit, TIME (Tulare Intermodal Express), DART (Dinuba Area Rural Transit), and TCAT (Tulare County Area Transit). Cities with Transit Centers include Visalia, Tulare, Porterville, Dinuba, and Woodlake. Other carriers within Tulare County include Amtrak Thruway Bus, Greyhound, Orange Belt Stage Lines, and Kings County Area Transit (KART). Ridesharing services include Uber, Lyft, and others are also available. Statewide rail connectivity may improve in the future with the California High Speed Rail project during construction phases 2-3, connecting Fresno to Kern County. Connectivity to the California High Speed Rail could be enhanced from the Cross Valley Corridor Plan, which hopes to preserve right of way for BRT and light-rail across the county for a future network.

Amtrak, California's only operating interregional passenger rail service, does not directly serve Tulare County with a rail line. However, "Thruway Buses" from Amtrak are available from Visalia to Hanford, the closest available Amtrak rail line in Kings County. KART's fixed route also offers service from Visalia to Hanford. Amtrak's San Joaquin's route passes through Hanford Station eight times a day, connecting County residents to either the San Francisco Bay Area or Sacramento to the north, and Bakersfield to the south Amtrak also provides bus service or partners with third parties to provide connections to other major cities in the state.

Tulare County: Tulare County Area Transit (TCAT) has provided rural route service between various cities and communities since 1981. TCAT operates nine different fixed routes which includes demand response services, and provides a Dial-a-Ride program. TCAT is the most extensive transit system in Tulare County and connects with all other providers.

City of Visalia: Visalia Transit operates both fixed route and Dial-a-Ride services. Visalia Transit began serving Visalia in 1981 and is now serving over 120,000 people. Visalia Transit operates 12 routes with a dial-a-ride service that serves residents seven days a week. Visalia Transit offers frequent transit service on Route 1, which goes from Downtown Visalia down Mooney Boulevard, Tulare County's most diverse shopping area. Additionally, Visalia Transit offers the V-Line which connects Fresno to Visalia, and the Sequoia Shuttle, connecting to Sequoia National Park from May-September. The Sequoia Shuttle also provides inner-park service, as well as transportation to the park when weather allows during Thanksgiving and the winter Holidays. Visalia Transit offers a smart phone application with live bus locations and Google Maps directions.

[1] Information in this sections generally taken from the 2018 RTP/SCS

City of Tulare: The City of Tulare operates a fixed-route system, Tulare InterModal Express (TIME), and a Dial-a-Ride service within and around the City limits. It began operating in 1980, serving local residents. The fixed-route service began full time operation in 1989 and operates six days per week. In June of 1993, a route was introduced linking TIME with Visalia Transit. Today there are a total of seven fixed-routes that operate seven days a week.

City of Porterville: The Porterville transit system began operating a demand responsive service in 1981. The transportation system serves over 60,000 residents of Porterville. Porterville Transit began servicing residents with a fixed route system in July 1997. The system operates seven days a week. Porterville Transit offers an electric fleet of buses, smart-phone capable boarding, a smart phone application with live bus locations, and Google Maps directions.

City of Dinuba: Dinuba Area Regional Transit (DART) provides transportation to destinations in and around Dinuba on four fixed routes and Dial-a-Ride. DART connects to Fresno County at the city of Reedley, providing access for residents to jobs, shopping, and Reedley College. DART offers free service on its Jolly Trolley, which connects the western part of the city to the eastern part, to major shopping destinations.

The City of Woodlake: The City of Woodlake transit system began service in June of 1999. The City operates a dial-a-ride service to the residents of Woodlake. The dial-a-ride service serves residents within the area of Woodlake.

Non-Motorized (Active Mode) Facilities

The use of bicycles as a means of transportation has several appealing aspects for an increasing share of travelers. With the heart-healthy benefits of bicycling outweighing the safety risks, bicycling has a positive effect on air quality, provides greater mobility, and provides economic benefits. Bicycle trips that replace auto travel reduce auto emissions of both criteria pollutants and GHGs. Bicycles do not consume fuel, maintenance is low, and bicycling can be used for commuting as well as for non-work and recreational purposes.

The bicycle's door-to-door capability for shorter trips makes it an attractive alternative mode of transportation during temperate months, with the flat terrain in much of the County being ideal for riding. The ongoing planning and implementation of a bikeway system provides both bike lanes and bike trails for commuting and leisurely rides. See F**igure 4.11-3, RTP Bike Network,** for the vast existing and planned bicycle network throughout the county, which also includes "Bike Rider Recommended" routes from the Visalia Waterways and Trails Committee, a local advisory committee, displayed in orange.

Bicycle facilities fall into three categories:

Class 1: Bike Path

A separated right-of-way for the exclusive use of bicycles and pedestrians. No motor vehicles allowed.

Class 2: Bike Lane

A striped lane for one-way bike travel on a street or highway adjacent to auto travel lanes.

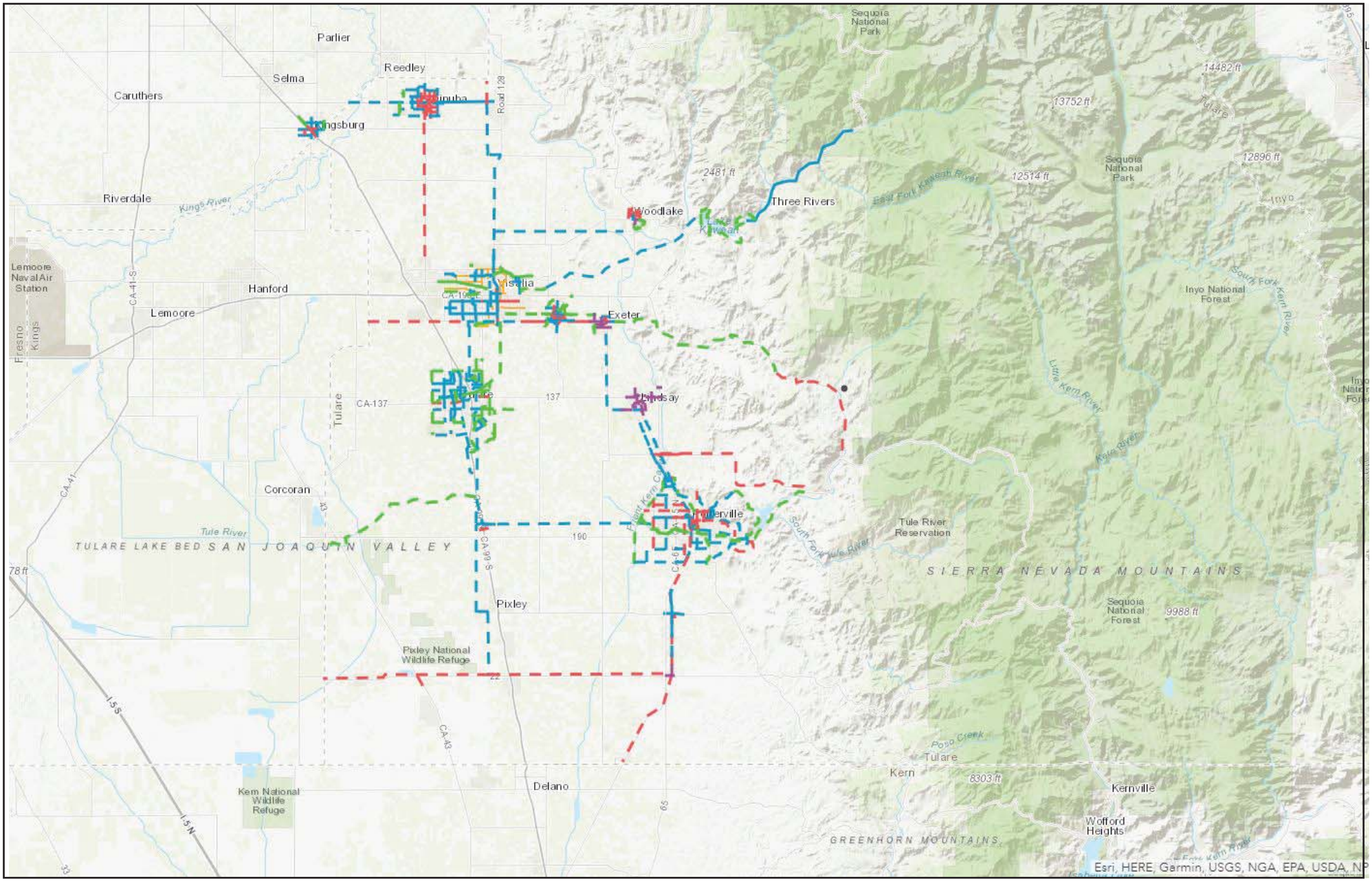
Class 3: Bike Route

Signed shared roadway with motor vehicle traffic.

Walking, as well as bicycling, is a part of an active transportation mode. Pedestrian elements primarily include sidewalks, crosswalks, trails, bus shelters for transit usage, trees for shade, and ADA access ramps. An inventory of the existing conditions and planned expansions of the pedestrian network and bicycle network are available in TCAG's recently released "Walk and Bike Tulare County," TCAG's Regional Active Transportation Plan.

Aviation

Tulare County's airports primarily serve hobbyists, pilots who own aircraft, the agricultural industry, police, and medical services. Visalia Municipal Airport, Tulare County's largest airport, recently stopped offering commercial flights. Together, the airports provide another mobility option for the County's residents and businesses, which includes, seven public-use airports (see **Figure 4.11-4, Tulare County Airports).** Locations include Mefford, Sequoia, Porterville, Visalia Municipal, Eckert, Exeter/Thunderhawk, and Woodlake), and sixteen personal-use or special-use airports.



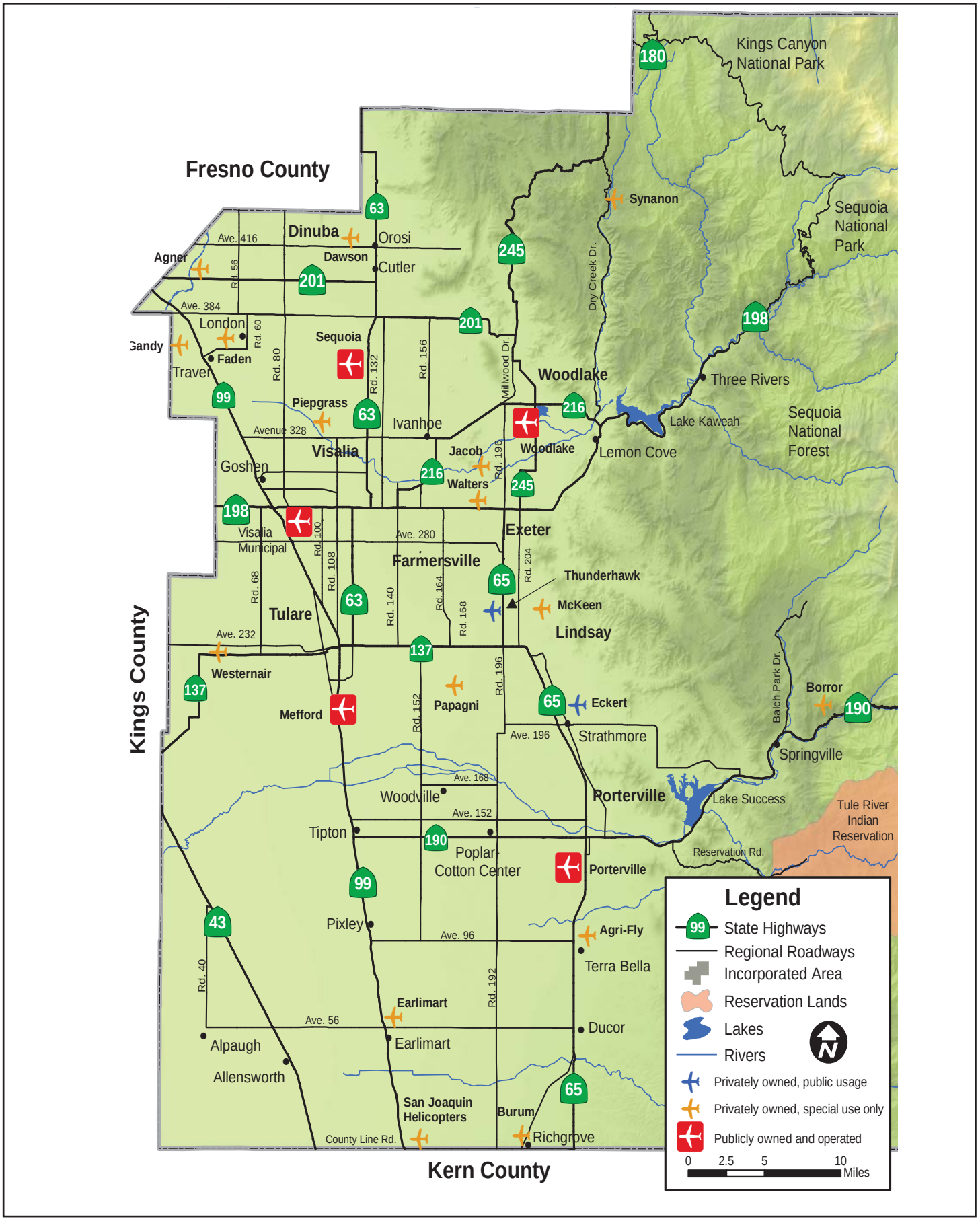
SOURCE: Tulare County Association of Governments, 2018

FIGURE **4.11-3**

RTP Bike Network

IMPACT SCIENCES

1290.001•1/18



SOURCE: Tulare County Association of Governments, 2018

FIGURE **4.11-4**

IMPACT SCIENCES

Tulare County Airports

1290.001•04/18

Goods Movement: Existing System and Trends

In 2017, Tulare County was the second highest producing agricultural county in the state, with the leading commodities of milk, cattle, oranges, and grapes. The total agricultural industry in 2016 totaled $6.4 billion dollars, behind Kern County's $7.2 billion.[2] This industry has historically dominated the county, providing a need for a healthy goods movement system, to move products from farm to market. TCAG identified a "Farm to Market" network of routes recently, identifying them as routes with at least 300 trucks per day that comprise the backbone of commodity goods movement.[3] These routes are designed to provide access to the state highway system which ultimately connects local farms with markets throughout California, the United States, and Pacific Rim. TCAG anticipates that approximately 25 miles of FTM routes will be improved under the Measure R program in the next several years. Rail also helps deliver Tulare County commodities throughout the state and nation

Rail

Trains provide an economical means of transporting bulk goods over long distances. Their ability to haul large amounts of cargo makes for an overall low energy requirement per unit of weight when compared to truck or air transport. The cost and labor associated with loading and unloading trains inhibits use of rail for short hauls within the state and locally.

Two major rail companies, Union Pacific (UP) and Burlington Northern Santa Fe (BNSF), serve Tulare County.[4] In addition, the Genesee & Wyoming Railroad carries regional freight in Tulare, Fresno, and Kern counties on leased Union Pacific branch lines. A map of existing and abandoned track in Tulare County and neighboring areas can be seen below.[5]

Trucks

Trucking is the most commonly used freight transport mode; with its popularity stemming from its flexibility, timely delivery, and efficiency for hauling long distances. Trucking, however, can be more expensive than rail for longer hauls because of higher per-ton energy costs. In addition, trucking is a major cause of street- and highway-surface failures, necessitating a higher level of road maintenance.

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2 California Department of Food and Agriculture, 2018

3 2018 TCAG RTP/SCS

4 Union Pacific, 2018

5 Openrailwaymap.org, 2018

According to the San Joaquin Valley Interregional Goods Movement Plan, trucks carry more than 90 percent of outbound, inbound, and intraregional tonnage in the San Joaquin Valley.[6] Of the 425 million tons moved by truck into, out of, or within the San Joaquin Valley in 2007, more than half were intraregional moves with both origins and destinations in the Valley. This is due to the many interdependencies within the Valley's agricultural and energy-producing sectors. Inbound tonnage of commodities to the San Joaquin Valley account for about 29 percent of the non-through flows and originate in diverse locations including the San Francisco Bay Area, Southern California, the Central Coast, and from outside of California. Outbound tonnage comprises about 22 percent of all non-through moves; again, destined for locations in the San Francisco Bay Area, Southern California, the Central Coast, and areas outside of California.

The San Joaquin Valley's major trucking corridors are centered on the north-south arteries of I-5 and SR 99, connected by SR 198 and other state highways. As Tulare County expands its population and employment base, the need for direct, high-capacity east/west truck corridors becomes increasingly crucial. Special attention must be given to the interregional routes to ensure that they remain in serviceable condition and that major reconstruction costs are minimized.

Other Goods Movement Modes

Pipelines. Various pipelines carry natural gas, crude oil, and other petroleum products throughout Tulare County. Storage, pumping, and branch lines are used to distribute those products. Southern California Edison (SCE) and Pacific Gas and Electric Company (PG&E) are responsible for the maintenance and operation of the natural gas lines, while major petroleum corporations are responsible for the crude oil pipelines throughout the region. State and federal agencies regulate the use of pipelines.

Hazardous Material Movement. Within Tulare County, emphasis is placed on hazardous materials routing and training of emergency personnel in the event of an accidental spill. Interstate transportation of hazardous products and waste through Tulare County on SR 99 and other state highways increases the probability of dangerous spills. Potentially adverse effects associated with transporting hazardous materials can be partially mitigated by restricting roads available to these shipments. Under California law, transportation of hazardous waste must be carried out via the most direct route over interstate highways whenever possible. Exceptions can be made to avoid highly congested and densely populated areas. Transfer of materials is not publicly tracked, however **Table 4.11-3, Hazardous Materials Class**, is provided to show what types of materials may be being transported through the county, and how they are classified.

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6 San Joaquin Valley Interregional Goods Movement Plan, 2013

Table 4.11-3
Hazardous Materials Class

Class	Division	Name of Class or Division	Examples
1	1.1	Mass Explosion	Dynamite
	1.2	Projection Hazard	Flares
	1.3	Fire Hazard	Display Fireworks
	1.4	Minor Explosion	Ammunition
	1.5	Very Insensitive	Blasting Agents
	1.6	Extremely Insensitive	Explosive Devices
2	2.1	Flammable Gases	Propane
	2.2	Non Flammable Gases	Helium
	2.3	Poisonous/Toxic Gases	Fluorine, Compressed
3		Flammable Liquids	Gasoline
4	4.1	Flammable Solids	Ammonium
	4.2	Spontaneously Combustible	Picrate, Wetted
	4.3	Dangerous When Wet	White Phosphorus Sodium
5	5.1	Oxidizers	Ammonium Nitrate
	5.2	Organic Peroxides	Methyl Ethyl Ketone Peroxide
6	6.1	Poison	Potassium Cyanide
	6.2	(Toxic Material) Infectious Substances	Anthrax Virus
7		Radioactive	Uranium
8		Corrosives	Battery Fluid
9		Miscellaneous Hazardous Materials	Polychlorinated Biphenyls (PCB)
E		ORM-D (Other Regulated Material – Domestic)	Food Flavorings, Medicines
		Combustible Liquids	Fuel Oil

Source: CA DMV, 2018 www.dmv.ca.gov/portal/dmv/detail/pubs/cdl_htm/sec9

Needs and Issues

Recognizing that agriculture is the region's economic base, Tulare County strives to maintain and improve the transportation infrastructure that is essential to this industry. For years it has become increasingly difficult to keep pace with necessary maintenance on existing facilities due to financial constraints. In some cases deferred maintenance has become evident. The movement of farm-to-market and other truck dependent industries, including the heavy use by local dairies, results in high

maintenance costs that consume funds that otherwise would be used for much needed network expansion.[7]

Existing System Performance

Table 4.11-4 provides data and estimates on vehicle miles traveled (VMT) and other indicators including active transportation, single occupancy and carpooling trips, and per capita VMT. For historical reference, 2017 has seen a recovery from the 2008/2009 "great recession" as measured by the unemployment rate (See **Section 4.9, Population and Housing**). There has also been a stabilizing of the "real price" of gasoline[8], as well as the end of the 2012-2016 drought event[9] which threatened the agricultural sector, which continue to affect the VMT and travel mode splits in 2017 (Table 4.11-3).

Travel by Bicycling, Walking, Transit, and HOV

Table 4.11-4 also reports model-based estimates of several other performance measures for transit, non-motorized, or active modes of transportation. These measures include all Tulare (i.e., work and all non-work purpose) trips by walking, biking, and transit. All data are estimates from the TCAG travel demand model, calibrated to match available survey data from the California Household Travel Survey of 2012, reweighted by TCAG's modeling consultant Fehr and Peers for modeling purposes.

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7 Tulare County Association of Governments 2018 RTP/SCS Action Element

8 Mid-year fuel price data from the California Energy Almanac adjusted using the US Bureau of Labor Statistics CPI-Urban.

9 https://www.water.ca.gov/Water-Basics/Drought, accessed on 4/23/2018

Table 4.11-4
Transportation Performance Measures for 2005 and 2017

Indicators & Measures	2005	2017	Change
Total VMT per Weekday (Miles, in Thousands)	10,153,707	10,547,370	3.8%
Other Indicators			
Public Transit (Boardings)	10,205	13,515	32.4%
Transit Use	0.75%	0.83	0.08%
Bike+Walk (Non-Motorized)	6.59%	6.74%	0.15%
Single Occupancy Vehicle (SOV)	38.61%	38.19%	-0.42%
High Occupancy Vehicles (HOV) 2+ per vehicle	54.06%	54.25%	0.19%
Per Capita Vehicle Miles Traveled (VMT) (All Trips)	25.12	22.35	-2.77

Source: TCAG 2018, TCAG Model, 2018

4.11.2 REGULATORY FRAMEWORK

4.11.2.1 Federal

Metropolitan Transportation Planning

The provisions of Title 23 USC Section 134 et seq. provides authority for Metropolitan Planning Organizations (MPOs) such as TCAG to act as a regional transportation planning organization with direct responsibility for carrying out the RTP. Federal requirements establishing requirements for RTPs are addressed in the metropolitan transportation planning rules: 23 CFR Parts 450 and 771, and 49 CFR Part 613.

TCAG is tasked with carrying out the regional transportation planning process and adopting long-range transportation plans. Collaborating with state and public transportation operators, TCAG undertakes a performance-driven, outcome-based approach to planning the Tulare county region. TCAG must prepare a transportation plan to be updated every four years, including identification of transportation facilities and factors for each mode of non-motorized transport, as well as major roadways, transit, multimodal and intermodal facilities, and connectors that should function as an integrated system serving regional transportation functions. The scope of the regional transportation planning process is to provide projects and strategies that will achieve the following objectives (23 U.S.C. Section 134(g)(3)(A)):

- Support the economic vitality of the metropolitan area, especially by enabling global competitiveness, productivity and efficiency;
- Increase the safety of the transportation system for motorized and non-motorized users;

- Increase the security of the transportation system for motorized and non-motorized users;
- Increase the accessibility and mobility of people and for freight;
- Protect and enhance the environment, promote energy conservation, improve the quality of life, and promote consistency between transportation improvements and State and local planned growth and economic development patterns; Enhance the integration and connectivity of the transportation system, across and between modes, for people and freight;
- Promote efficient system management and operation;
- Emphasize the preservation of the existing transportation system;
- Improve the resiliency of and reliability of the transportation system, and reduce stormwater impacts of surface transportation; and
- Enhance travel and tourism.

Fixing America's Transportation Act (FAST)

The Fixing America's Surface Transportation (FAST) Act (Pub. L. No. 114-94), enacted in 2015, builds on the changes to federal transportation planning law made by MAP-21.[10] It was the first long-term surface transportation authorization enacted in a decade that provides long-term funding certainty for surface transportation. The FAST Act authorizes $305 billion over fiscal years 2016 through 2020 for highway improvements, highway and motor vehicle safety, public transportation, motor carrier safety, hazardous materials safety, rail, and research, technology, and statistics programs. The FAST Act maintains the focus on safety, keeps intact the established structure of the various highway-related programs, continues efforts to streamline project delivery, and provides a dedicated source of federal dollars for freight projects.

Under the FAST Act and its predecessors, MPOs such as TCAG must prepare long-range transportation plans and update them every four years if they are in areas designated as "nonattainment" or "maintenance" for federal air quality standards. Per federal requirements, long-range transportation plans must:

- be developed through an open and inclusive process, that ensures public input; seeks out and considers the needs of those traditionally underserved by existing transportation systems;

10 The Moving Ahead for Progress in the 21st Century Act (MAP-21) was enacted in 2012 (PL 112-141).

- consults with resource agencies to ensure potential problems are discovered early in the planning process;
- be developed for a period of not less than 20 years into the future; long-range transportation plans must reflect the most recent assumptions for population, travel, land use, congestion, employment and economic activity;
- have a financially-constrained element, transportation revenue assumptions must be reasonable, and the long range financial estimate must take into account construction-related inflation costs;
- include a description of the performance measures and performance targets used in assessing the performance of the transportation system;
- include a system performance report evaluating the condition and performance of the system with respect to performance targets adopted by the state that detail progress over time;
- include multiple scenarios for consideration and evaluation relative to the state performance targets as well as locally-developed measures;
- conform to the applicable federal air quality plan, called the State Implementation Plan, for ozone and other pollutants for which an area is not in attainment; and
- consider planning factors and strategies in the local context.

Congestion Management Process (23 USC section 134(k))

A congestion management process (CMP) is a systematic and regionally-accepted approach for managing congestion that provides accurate, up-to-date information on transportation system performance and assesses alternative strategies for congestion management that meet state and local needs. A CMP is required in metropolitan areas with a population exceeding 200,000, known as Transportation Management Areas (TMAs). Federal requirements state that in all TMAs, such as Tulare County, the CMP must be developed and implemented as an integrated part of the metropolitan transportation planning process.

4.11.2.2 State

Regional Transportation Plan Requirements

MPOs are required to prepare RTPs that also meet state requirements. Government Code sections 65080 *et seq.* state that each MPO must prepare and adopt a regional transportation plan directed at achieving a coordinated and balanced regional transportation system, including, but not limited to, mass transportation, highway, railroad, maritime, bicycle, pedestrian, goods movement, and aviation facilities and services. The plan must be action-oriented and pragmatic, considering both the short-term and long-term future, and shall present clear, concise policy guidance to local and state officials.

Under California Code Section 14522, the California Transportation Commission (CTC) is authorized to prepare guidelines to assist in the preparation of RTPs. The CTC's RTP guidelines identify state and federal requirements for the development of RTPs, and methods to achieve these requirements. The guidelines suggest that projections used in the development of an RTP should be based upon available data (such as from the Bureau of the Census), use acceptable forecasting methodologies, and be consistent with the Department of Finance baseline projections for the region. The guidelines further state that the RTP should identify and discuss any differences between the agency projections and those of the Department of Finance. The RTP guidelines include provisions for complying with Senate Bill 375 (see below), as well as guidelines for regional travel demand modeling. The regional travel demand model guidelines are "scaled" to different sizes of metropolitan planning organizations (MPOs). TCAG is included in the "C2" grouping of the MPOs that that are designated Transportation Management Agencies (TMAs) and are in nonattainment or maintenance for ozone or carbon monoxide (2017 RTP Guidelines, p. 67 *et seq.*). The guidelines for regional travel demand modeling for the "C2" group include (among many other things) detailed guidelines and standards for validation testing of the model.

Senate Bill 375

Sen. Bill No. 375 (Stats. 2008, ch. 728) (SB 375) requires MPOs to prepare a Sustainable Communities Strategy (SCS) that demonstrates how the region will meet its greenhouse gas (GHG) reduction targets through integrated land use, housing and transportation planning. Specifically, the SCS must identify a transportation network that is integrated with the forecasted development pattern for the plan area and will reduce GHG emissions from automobiles and light trucks in accordance with targets set by the California Air Resources Board. For the 2018 RTP/SCS, the targets for TCAG (along with other San Joaquin Valley MPOs) are a 5 percent reduction in per capita GHG emissions by 2020, and a 10 percent reduction by 2035, in both cases compared with 2005 levels. For the next TCAG RTP/SCS cycle, CARB recently raised these targets to 13 percent reduction by 2020 and 16 percent reduction by 2035.[11]

Senate Bill 743

Senate Bill 743 (SB 743) was enacted in 2013 and became effective in July 2014. It requires OPR and the Natural Resources Agency to amend the *CEQA Guidelines* through developing criteria for determining the significance of transportation impacts that deemphasize traffic congestion and LOS. (Pub. Res. Code § 21099(b).). The criteria are to promote GHG reduction, multi-model transportation networks, and a diversity of land uses. Once the Natural Resources Agency certifies these Guidelines amendments,

11 https://www.arb.ca.gov/cc/sb375/sb375_target_update_final_staff_report_feb2018.pdf, accessed April 11, 2018.

automobile delay as measured by LOS or similar metrics is not to be considered a significant environmental impact in transit priority areas, except in any locations the amendments may specify.

In November 2017, OPR transmitted the draft SB 743 CEQA Guideline to the Natural Resources Agency as part of a comprehensive *CEQA Guidelines* amendments package;[12] The Guideline establishes VMT (vehicle miles traveled) as the preferred transportation impact metric. In January 28, 2018, the Natural Resources Agency issued a Notice of Proposed Rulemaking to initiate the formal adoption process for OPR's proposed *CEQA Guidelines* amendments package.[13]

Assembly Bill 1358

AB 1358, also known as the Complete Streets Act of 2008 (Chapter 657, Statutes of 2008), amended the California Government Code Section 65302 to require that any substantive revisions to a city or county's Circulation Element include provisions for accommodations of all roadway users, including bicyclists and pedestrians.

California Congestion Management Program

The Congestion Management Program (CMP) is a State mandated program (Government Code section 65089) aimed at reducing congestion on highways and roads in California. The CMP establishes a designated roadway network of regional significance, roadway service standards, multi-modal performance standards and a land use analysis element to identify and mitigate multijurisdictional transportation impacts resulting from local land use decisions. Federal, State and local transportation funding is contingent upon local agency compliance with the CMP.

12 http://opr.ca.gov/ceqa/updates/guidelines/, accessed April 6, 2018.

13 http://resources.ca.gov/ceqa/docs/update2018/notice-of-proposed-rulemaking.pdf, accessed April 6, 2018.

California Vehicle Code (CVC)

The CVC provides requirements for ensuring emergency vehicle access regardless of traffic conditions. CVC sections 21806(a)(1), 21806(a)(2), and 21806(c) define how motorists and pedestrians are required to yield the right-of-way to emergency vehicles.

4.11.2.3 Regional and Local Plans

Local Agency General Plans

State law requires cities and counties to adopt general plans, which must incorporate a circulation element. A general plan's circulation element describes the acceptable operating standards, levels of service, roadway classifications, and transportation related goals and policies of the city or county. Circulation elements also typically address public transit, bicycle, and pedestrian facilities; the circulation element must be compatible with the General Plan Land Use element, and must not conflict with any plan element. The performance measures used for evaluation of the 2018 RTP/SCS in this PEIR are intended to supplement local standards by focusing explicitly on regional system performance.

Tulare County General Plan

The Tulare County General Plan includes the following policies related to transportation, traffic and emergency access:

- **TC-1.1 Provision of an Adequate Public Road Network.** The County shall establish and maintain a public road network comprised of the major facilities illustrated on the Tulare County Road Systems to accommodate projected growth in traffic volume.
- **TC-1.2 County Improvement Standards.** The County's public roadway system shall be built and maintained consistent with adopted County Improvement Standards, and the need and function of each roadway, within constraints of funding capacity.
- **TC-1.3 Regional Coordination.** The County shall continue to work with State, regional, and local agencies to assess transportation needs and goals and support coordinated transportation planning and programming with the Tulare County Association of Governments (TCAG) and other local agencies.
- **TC-1.4 Funding Sources.** The County shall work to enhance funding available for transportation projects. This includes: Working with TCAG, Federal and State agencies, and other available funding sources to maximize funding available to the County for transportation projects and programs, and Enhance local funding sources, including assessment of transportation impact fees to pay for appropriate construction, enhancement, and maintenance of transportation facilities.

- **TC-1.5 Public Road System Maintenance.** The County shall give priority for maintenance to roadways identified by the Tulare County Pavement Management System (PMS) and other inputs relevant to maintaining the safety and integrity of the County roadway system.

- **TC-1.6 Intermodal Connectivity.** The County shall ensure that, whenever possible, roadway, highway, and public transit systems will interconnect with other modes of transportation. Specifically, the County shall encourage the interaction of truck, rail, and air-freight/passenger movements.

- **TC-1.7 Intermodal Freight Villages.** The County shall consider the appropriate placement of intermodal freight villages in locations within the Regional Growth Corridors.

- **TC-1.8 Promoting Operational Efficiency.** The County shall give consideration to transportation programs that improve the operational efficiency of goods movement, especially those that enhance farm-to-market connectivity

- **TC-1.9 Highway Completion.** The County shall support State and Federal capacity improvement programs for critical segments of the State Highway System. Priority shall be given to improvements to State Highways 65, 99, and 198, including widening and interchange projects in the County.

- **TC-1.10 Urban Interchanges.** The County shall work with TCAG to upgrade State highway interchanges from rural to urban standards within UDBs.

- **TC-1.11 Regionally Significant Intersections.** To enhance safety and efficiency, the County shall work to limit the frequency of intersections along regionally-significant corridors.

- **TC-1.12 Scenic Highways and Roads.** The County shall work with appropriate agencies to support the designation of scenic highways and roads in the County.

- **TC-1.13 Land Dedication for Roadways and Other Travel Modes.** As required to meet the adopted County Improvement Standards, the County shall require, where warranted, an irrevocable offer of dedication to the right-of-way for roadways and other travel modes, as part of the development review process.

- **TC-1.14 Roadway Facilities.** As part of the development review process, new development shall be conditioned to fund, through impact fees, tonnage fees, and/or other mechanism, the construction and maintenance of roadway facilities impacted by the project. As projects or locations warrant, construction or payment of pro-rata fees for planned road facilities may also be required as a condition of approval.

- **TC-1.15 Traffic Impact Study.** The County shall require an analysis of traffic impacts for land development projects that may generate increased traffic on County roads. Typically, applicants of projects generating over 100 peak hour trips per day or where LOS "D" or worse occurs, will be required to prepare and submit this study. The traffic impact study will include impacts from all vehicles, including truck traffic.

- **TC-1.16 County Level of Service (LOS) Standards.** The County shall strive to develop and manage its roadway system (both segments and intersections) to meet a LOS of "D" or better in accordance with the LOS definitions established by the Highway Capacity Manual.

- **TC-1.17 Level of Service Coordination.** The County shall work with cities and neighboring jurisdictions to provide acceptable and compatible levels of service and encourage joint funding of the roadway improvement projects benefiting cities and the unincorporated areas.

- **TC-1.18 Balanced System**. The County shall strive to meet transportation needs and maintain LOS standards through a balanced Multimodal Transportation Network that provides alternatives to the automobile.

- **TC-1.19 Balanced Funding.** The County shall promote a balanced approach to the allocation of transportation funds to optimize the overall County transportation system.

- **TC-2.1 Rail Service.** The County shall support improvements to freight and expanding passenger rail service throughout the County.

- **TC-2.2 Rail Improvements.** The County shall work with cities to support improvement, development, and expansion of passenger rail service in Tulare County.

- **TC-2.3 Amtrak Service.** The County shall encourage Amtrak to add passenger service to the Union Pacific corridor in the County.

- **TC-2.4 High Speed Rail (HSR).** The County shall coordinate with TCAG and the California High Speed Rail Authority in efforts to locate the HSR corridor with a passenger stop and maintenance facility in Tulare County.

- **TC-2.5 Railroad Corridor Preservation.** The County shall work with other agencies to plan railroad corridors to facilitate the preservation of important railroad rights-of–way for future rail expansion or other appropriate transportation facilities.

- **TC-2.6 Rail Abandonment.** The County shall coordinate with the Public Utilities Commission and TCAG to evaluate possible impacts of rail line abandonment proposals and consider alternatives uses for abandoned facilities, such as light rail, bike trails, utility corridors, or transit facilities.

- **TC-2.7 Rail Facilities and Existing Development.** The County will work with the California Public Utilities Commission (CPUC) to ensure that new railroads rights-of-ways, yards, or stations adjacent to existing residential or commercial areas are screened or buffered to reduce noise, air, and visual impacts. Similarly, the County should coordinate with the CPUC and railroad service providers to address railroad safety issues as part of all future new development that affects local rail lines. Specific measures to be considered and incorporated into the design of future projects affecting rail lines include, but are not limited to, the installation of grade separations, warning signage, traffic signaling improvements, vehicle parking prohibitions, installation of pedestrian-specific warning devices, and the construction of pull out lanes for buses and vehicles.

- **TC-3.1 Enhancement of Countywide Airport System.** The County shall coordinate with TCAG and the cities to support the enhancement of the Countywide airport system, including the potential expansion of commercial airline passenger service.

- **TC-3.2 Airport System Development.** The County shall direct operations and maintenance toward servicing as much of forecasted aviation demand as possible within reasonable fiscal constraints.

However, publicly-owned and operated airports shall not be expected to satisfy all anticipated demand for aviation facilities and related services in the County.

- **TC-3.3 Airport Enhancement.** The County shall encourage and facilitate development of the County's public airports in conformance with the Tulare County Comprehensive Airport Land Use Plan (CALUP).

- **TC-3.4 Airport Compatibility.** Protect existing and future airport operations from encroachment by potentially incompatible land uses and require developers to file an aviation easement with the County if a proposed development or expansion of an existing use is located within the approach or approach transition zones designation in the Tulare County Comprehensive Airport Land Use Plan.

- **TC-3.5 Private Ownership.** The County shall consider the development and maintenance of privately-owned and operated airport facilities in the County provided such development and operation does not conflict with established land use or other public policies and does not result in adverse impacts on the operation, maintenance, and long term viability of existing airport facilities.

- **TC-3.6 Airport Encroachment**. The County shall seek to avoid encroachment on airports by incompatible urban land uses.

- **TC-3.7 Multi-modal Development.** The County shall support the development of multi-modal terminal facilities at County airports.

- **TC-4.1 Transportation Programs.** The County shall support the continued coordination of transportation programs provided by social service agencies, particularly those serving elderly and/or handicapped.

- **TC-4.2 Determine Transit Needs.** The County will continue to work with TCAG, cities, and communities in the County to evaluate and respond to public transportation needs.

- **TC-4.3 Support Tulare County Area Transit.** The County shall request the support of TCAG for development of transit services outlined in the County's Transit Development Plan (TDP). Efforts to expand Tulare County Area Transit should be directed towards: Encouraging new and improving existing transportation services for the elderly and disabled, and Providing intercommunity services between unincorporated communities and cities.

- **TC-4.4 Nodal Land Use Patterns that Support Public Transit.** The County shall encourage land uses that generate higher ridership including; high density residential, employment centers, schools, personal services, administrative and professional offices, and social/recreational centers, to be clustered within a convenient walking distance of one another.

- **TC-4.5 Transit Coordination.** The County shall encourage regional coordination to facilitate improved connectivity between County and city operated transit systems and other transportation modes.

- **TC-4.6 San Joaquin Valley Intelligent Transportation System Strategic Deployment Plan.** The County shall utilize the San Joaquin Valley Intelligent Transportation System Strategic Deployment Plan to facilitate public transportation services.

- **TC-4.7 Transit Ready Development.** The County shall promote the reservation of transit stops in conjunction with development projects in likely or potential locations for future transit facilities.

- **TC-5.1 Bicycle/Pedestrian Trail System.** The County shall coordinate with TCAG and other agencies to develop a Countywide integrated multi-purpose trail system that provides a linked network with access to recreational, cultural, and employment facilities, as well as offering a recreational experience apart from that available at neighborhood and community parks.

- **TC-5.2 Consider Non-Motorized Modes in Planning and Development.** The County shall consider incorporating facilities for non-motorized users, such as bike routes, sidewalks, and trails when constructing or improving transportation facilities and when reviewing new development proposals. For developments with 50 or more dwelling units or non-residential projects with an equivalent travel demand, the feasibility of such facilities shall be evaluated.

- **TC-5.3 Provisions for Bicycle Use.** The County shall work with TCAG to encourage local government agencies and businesses to consider including bicycle access and provide safe bicycle parking facilities at office buildings, schools, shopping centers, and parks.

- **TC-5.4 Design Standards for Bicycle Routes.** The County shall utilize the design standards adopted by Caltrans and as required by the Streets and Highway Code for the development, maintenance, and improvement of bicycle routes.

- **TC-5.5 Facilities.** The County shall require the inclusion of bicycle support facilities, such as bike racks, for new major commercial or employment locations.

- **TC-5.6 Regional Bicycle Transportation Plan.** The County shall identify Countywide recreational and commuter bicycle routes and update the Tulare County Regional Bicycle Transportation Plan as appropriate.

- **TC-5.7 Designated Bike Paths**. The County shall support the creation and development of designated bike paths adjacent to or separate from commute corridors.

- **TC-5.8 Multi-Use Trails.** The County shall encourage the development of multi-use corridors (such as hiking, equestrian, and mountain biking) in open space areas, along power line transmission corridors, utility easements, rivers, creeks, abandoned railways, and irrigation canals.

- **TC-5.9 Existing Facilities.** The County shall support the maintenance of existing bicycle and pedestrian facilities.

- **HS-7.1 Coordinate Emergency Response Services with Government Agencies.** The County shall coordinate emergency response with local, State, and Federal governmental agencies, community organizations, volunteer agencies, and other response partners during emergencies or disasters utilizing SEMS and NIMS.

- **HS-7.2 Mutual Aid Agreement.** The County shall participate in established local, State, and Federal mutual aid systems. Where necessary and appropriate, the County shall enter into agreements to ensure the effective provision of emergency services, such as mass care, heavy rescue, hazardous materials, or other specialized function.

- **HS-7.3 Maintain Emergency Evacuation Plans.** The County shall continue to create, revise, and maintain emergency plan for the broad range of natural and human-made disasters and response activities that could foreseeably impact Tulare County. This shall include, but not be limited to, flooding, dam failure, extreme weather, evacuation/transportation, mass care and shelter, and animal evacuation and sheltering. Emergency Planning projects shall be in line with the County's Strategic Plan and Emergency Operations Plan, and incorporate current guidance and initiatives from State and Federal Emergency Management Agencies.

- **HS-7.4 Upgrading for Streets and Highways.** The County shall evaluate and upgrade vital streets and highways to an acceptable level for emergency services.

- **HS-7.5 Emergency Centers.** The County shall require emergency backup systems to enable uninterrupted continuous operations as required by the California Essential Facilities Act.

- **HS-7.6 Search and Rescue.** The County should continue to provide search and rescue operation capabilities for the Tulare County Sheriff's Department in mountainous areas, including those areas on the eastern side of the Sierra Nevada that are not served by all-weather roads.

- **HS-7.7 Joint Exercises.** The County shall encourage fire, law enforcement, emergency medical services, resource management, public health, and other governmental and non-governmental response partners to periodically conduct joint training exercises with the goal of developing the best possible coordinated action in the event of a natural or human-made disaster across all local jurisdictions.

- **HS-7.8 Tulare County Multi-Jurisdiction Hazard Mitigation Plan.** The County incorporates the adopted Tulare County Multi-Jurisdiction Hazard Mitigation Plan into the Tulare County General Plan Health and Safety Element. The plan provides guidance and insight into the hazards that exist in Tulare County and suggests possible mitigation projects. The plan should be consulted when addressing known hazards to ensure the general health and safety of Tulare County residents.

- **HS-7.9 Climate Adaptation and Resiliency.** The County incorporates the Climate Adaptation and Resiliency strategies identified in California Government Code 65302 (g)(4) as adopted in the Tulare County Multi-Jurisdiction Hazard Mitigation Plan and Tulare County Climate Action Plan into the Tulare County General Plan Health and Safety Element.

City of Visalia

The City of Visalia General Plan includes the following policies related to transportation, traffic and emergency access:

- **T-O-1**. Develop and maintain a road system that is convenient, safe, efficient, and cost effective.

- **T-O-2.** Maximize the use and efficiency of the existing transportation system through application of Transportation System Management (TSM) strategies.

- **T-O-3**. Promote ways to reduce the number of peak hour trips and vehicle-miles traveled in the Planning Area.

- **T-O-4.** Ensure that new development pays its fair share of the costs of new and improved transportation facilities.

- **T-P-1**. Provide transportation facilities based on a "Complete Streets" concept that facilitate the balanced use of all travel modes (pedestrians, bicyclists, motorists, and transit users), meeting the transportation needs of all ages and abilities and providing mobility for a variety of trip purposes.

- **T-P-2.** Optimize roadway operations with priority given to signal timing coordination in order to increase traffic-carrying capacity and decrease air pollution and congestion. Roundabouts shall be considered when feasible and beneficial as an alternative to traffic signals.

- **T-P-3.** Design and build future roadways that complement and enhance the existing network, as shown on the Circulation Diagram, to ensure that each new and existing roadway continues to function as intended.

- **T-P-4.** Where feasible, space traffic signals no closer than one-quarter mile along two-way arterials except in unusual circumstances. e intersections of arterial and collector streets and access driveways to major traffic generators that are signalized shall be located so as to maintain this spacing.

- **T-P-5.** Take advantage of opportunities to consolidate driveways, access points, and curb cuts along existing arterials when a change in development or a change in intensity occurs or when traffic operation or safety warrants.

- **T-P-6.** Establish priorities for improvements based on the functional classifications identified for street segments on the Circulation System Map and on the relative importance of the roadway for each travel mode. For example, transit stops and bus turnouts may have higher priority than improvements for through traffic on important transit corridors; through traffic may have higher priority than on-street parking on major arterials; and pedestrian and bicycle movement may have high priority in areas with high pedestrian interest and activity (such as Downtown).

- **TP-7.** Continue to implement a monitoring and evaluation program that will provide the data and planning needed to develop an effective and coordinated Capital Improvement Program (CIP) that will provide circulation improvements in concert with development trends.

- **T-P-8.** Give priority to funding and implementing projects that either complete links on the transportation system or relieve existing deficiencies.

- **T-P-9**. Maintain acceptable levels of service for all modes and facilities, as established in Tables 4-1, Intersection Level of Service Definitions and 4-2, Level of Service Criteria for Roadway Segments.

- **T-P-10.** Manage local residential streets to limit average daily vehicle volumes to 1,500 or less and maintain average vehicle speeds between 15 and 25 miles per hour.

- **T-P-11.** Update the City of Visalia Engineering and Street Design Standards to ensure that road- way and streetscape design specifications are in accordance with the Complete Streets concept and other policies in this General Plan. *Updated design standards must allow flexibility to accommodate retrofitting streets with limited right-of-way. In order to accommodate all travel modes, adjustments may be made to median, travel lane, and bike lane widths; alternate bikeway routes on parallel facilities may also be considered.*

- **T-P-12**. Require or provide adequate traffic safety measures on all new and existing roadways. *These measures may include, but shall not be limited to: appropriate levels of maintenance, proper street design, traffic control devices, street lights, and coordination with school districts to provided school crossing signs and protection.*

- **T-P-13.** Where possible, acquire right-of-way within older areas of the city to improve the connectivity of the roadway system, consistent with Figure 4-1. The benefits of improved traffic flow shall be weighed against the adverse impacts of street widening on the neighbor- hoods and adjacent land uses.

- **T-P-14.** Require residential communities on undeveloped land planned for urban uses to provide stubs for future connections to the edge of the property line. Where stubs exist on adjacent properties, new streets within the development should connect to them.

- **T-P-15.** Require additional right-of-way and improvements of Circulation Element facilities where needed for turning movements or to provide access to adjacent properties wherever access is not feasible from the lower classification street system.

- **T-P-16.** Promote phased construction of major arterials where sufficient right-of-way width is obtained for ultimate future needs, but street construction width is adequate to meet present need, thereby avoiding maintenance costs resulting from unused pavement.

- **T-P-17.** Use citywide traffic impact fees to pro- vide additional funding for transportation improvements with citywide benefits, such as highway interchanges and ramps. Provide for automatic annual adjustments in traffic fees to reflect increases in construction costs (materials, inflation, etc.).

- **T-P-18.** To ensure that citywide traffic service levels are maintained, require a traffic study, as a condition of development, of surrounding arterials, collectors, access roads, and region-ally significant roadways for any major project that would require a General Plan amendment, and for projects where the proposed use could create traffic congestion because needed improvements identified by this General Plan would not be completed before project occupancy or are not funded under the CIP. *The City will update its criteria and guidelines for traffic studies to be consistent with the General Plan, and projects that conform to General Plan-specified land use designations and intensities will generally not be required to prepare a traffic study.*

- **T-P-19.** Pursue Transportation System Management (TSM) for the mitigation of traffic and parking congestion. *Public transit, traffic management, ride sharing, and parking management can be used to implement TSM strategies.*

- **T-P-20.** Work with major employers and the Tulare County Association of Governments (TCAG) to reduce total vehicle miles traveled and the total number of daily and peak hour vehicle trips and provide better utilization of the transportation system through development and implementation of Transportation Demand Management (TDM) strategies that are tailored to the needs of geographic areas within the city and the time period of traffic congestion. *These may include the implementation staggered work hours, utilization of telecommunications, increased use of ridesharing in the public and private sectors, and provision for bicyclists.*

- **T-P-21.** Coordinate with the College of the Sequoias to develop a transportation plan that ensures that the College provides adequate parking areas for students and faculty; improves circulation issues on and adjacent to campus; integrates transit; and incorporates Transportation Demand Management (TDM) strategies such as incentives for ridesharing and facilities for bicyclists.

- **T-P-21.** The plan should minimize negative impacts on surrounding residential areas and on the transportation system.

4.11.3 ENVIRONMENTAL IMPACTS

4.11.3.1 Thresholds of Significance

For the purposes of this EIR, TCAG has determined that implementation of the proposed 2018 RTP/SCS would result in significant adverse impacts to transportation if any of the following could occur (these thresholds are based on Appendix G and clarified for how they apply to the RTP/SCS):

- Results in a substantial increase in VMT (a key circulation system performance measure);

- Conflicts with an applicable congestion management program, including, but not limited to, level of service standards and travel demand measures, or other standards established by the County congestion management agency for designated roads or highways;

- Results in a change in air traffic patterns, including either an increase in air traffic levels or a change in location that results in substantial safety risks;

- Substantially increases hazards due to a design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment);

- Results in inadequate emergency access; and

- Conflicts with adopted policies, plans, or programs regarding public transit, bicycle or pedestrian facilities, or otherwise decreases the performance or safety of such facilities.

4.11.3.2 Methodology

Regional conditions for a number of key performance indicators form the basis for the transportation impacts analysis presented in this PEIR. These indicators include VMT and shares of transit and non-motorized trips. These indicators have been important performance measures throughout the development of the 2018 RTP/SCS, and relate directly to the performance of the region's transportation system.

VMT has been a primary indicator of travel for policy-makers and transportation professionals for decades. Several features collectively make VMT a key performance measure:

- First, it is relatively easy to calculate VMT by counting traffic on roadways at different locations. It is one of the few measures of transportation performance consistently and comprehensively estimated and documented.

- Second, VMT bears a strong and direct relationship to vehicle air pollutant and GHG emissions, although the relationship is becoming more complex moving into the future. Electric and hybrid vehicles, along with state and federal policies pertaining to vehicle fuel efficiency and the formulation of vehicle fuels suggest that on a per VMT basis, emissions for most pollutants will decline relative to today. However, even if emissions per VMT improve, lower VMT will still mean lower emissions.

- Third, VMT correlates with travel time. The more miles driven, the more vehicles on the roadways at any given time, and higher numbers of vehicles eventually result in longer travel times.

Transportation data was supplied by TCAG based on forecasts developed using the TCAG Regional Travel Demand Forecasting Model, Base Year 2015 (TCAG Model). As this is a regional model, it does not have a sufficient network and zone detail to allow prediction of intersection turning volumes and delays when estimating travel time and system performance. Models such as this one generally only have information on the number of lanes and link capacity on particular roadway segments. The model was developed in accordance with and validated to standards in the CTC RTP Guidelines.

Model inputs are listed below:

- Socioeconomic Data by Census Block Group
- Highway Networks
- Land Use and Accessibility for Auto Ownership Model
- Land Use, parking, pricing Travel Demand Model (TDM), Walk and Bike for Mode Choice Model
- Transit Networks
- External Trips (inter-regional trips)
- Several special generators for military bases and other unique land uses

The model includes modules that incorporate household characteristics (size, number of workers, income, single-family or multi-family unit); auto ownership; trip generation; trip distribution; mode choice (e.g., single-occupant vehicle, multi-occupant vehicle, transit and active modes (walking and cycling); and traffic assignment to the transportation network. Post processing is used to reflect land use interactions and other items that are not readily modeled with a regional model.

The 2018 RTP/SCS coordinates land use and transportation projects through the 2042 horizon year. The SCS is intended to identify a land use strategy that supports the objectives of SB 375 to achieve, among

other things: increased roadway optimization, increased modes of travel other than single occupancy automobiles, increased access to jobs and amenities, minimized increases in VMT and reduced GHG emissions. Among the strategies to meet these goals is a mix of land uses balanced to reduce VMT and increase the ability for residents and visitors of the region to conduct everyday activities without the need to travel by car. As a consequence, the Regional Transportation Demand Model (RTDM) and associated transportation system performance results discussed in this analysis capture the effects of land use changes on overall travel demand in the region. Although the TCAG RTDM does not specifically evaluate induced travel from the perspective of longer trips, changes in mode choice, route changes or newly generated induced trips, at the regional level these effects are likely negligible compared to the overall amount of travel. As discussed in the Federal Highway Administration's "HERS-ST Highway Economic Requirements System - State Version: Technical Report - Appendix B: Induced Traffic and Induced Demand" (August 2005), "If the demand is for a single facility, then induced traffic will appear large relative to previous volumes, because most of the change in trips will be from diverted trips. At the regional level, induced traffic would be a smaller share of total traffic growth, because only trips diverted from other regions, plus substitutions between transportation and other goods, make up the induced share." Therefore, although the 2018 RTP/SCS roadway capacity increases may induce some additional travel, any additional VMT resulting specifically from induced travel would not be likely to substantially change the following impact analysis or conclusions.

Also, in the case of the TCAG 2018 RTP/SCS there is evidence, based on the outputs of the RTDM, that travel induced by development of the regional project list is minor in relation to overall travel. The overall daily VMT of the proposed Plan (12,699,425) in 2042 is less than that of the No Project Alternative (12,758,055). This is notwithstanding the addition of 284 lane miles of capacity from projects in the proposed Plan. The new lane miles represent only 6.4 percent of total lane miles in the proposed Plan.

Determination of Significance

The significance of impacts was determined by applying the significance criteria above to compare current regional transportation conditions to future conditions with the Plan. The TCAG transportation model provides performance data for future Plan conditions. The performance measure output for year 2042 with the Plan was compared to the existing regional conditions for each significance criterion to determine the significance of impacts. The 2042 transportation model output provides a regional and cumulative level of analysis for the impacts of the Plan on transportation resources.

4.11.3. 3 Impacts and Mitigation Measures

Impact TR-1 Substantial increase in VMT (a key circulation system performance measure).

The 2018 RTP/SCS includes a series of individual improvement projects and programs (street and highway, transit, bicycle and trail, pedestrian and other projects) to help expand and enhance the multi-modal transportation system.

Table 4.11-5 shows changes in total and per capita VMT and other indicators between 2017 and the horizon year of the 2018 RTP/SCS (2042).

As shown in **Table 4.11-5**, implementation of the 2018 RTP/SCS in 2042 would increase VMT 20 percent compared to existing (2017) conditions. This increase in absolute VMT reflects population gains and assumes an improving economy. The per capita VMT would decrease compared to 2017. Transit boardings, bike/walk and high occupancy vehicle use would all increase and single occupancy/drive alone trips would decrease.

Table 4.11-5
Impacts on Key Transportation Measures for Existing (2017) vs. Plan and No Project Scenarios (2042)

Indicators & Measures	2017 Existing	2042 Plan	2042 Plan vs. 2017 % Change	2042 No Project	2042 Plan vs. No Project % Change
Total VMT per Weekday (Miles, in Thousands)	10,547	12,699	20.0%	12,758	-0.4%
Other Indicators					
Public Transit (Boardings)	13,515	23,345	73%	16,042	31%
Transit	0.83%	1.23%	40%	0.79%	44%
Bike+Walk (Non-Motorized)	6.74%	7.25%	0.51%	6.69%	0.56%
Single Occupancy Vehicle (SOV)	38.19%	37.39%	-0.8%	37.99%	-0.6%
High Occupancy Vehicles (HOV) 2+ per vehicle	55.34%	54.13%	-1.21%	54.43%	-0.3%
Per Capita Vehicle Miles Traveled (VMT) (All Trips)	22.35	20.99	-6.01%	21.10	-5.24%

Source: TCAG 2018

The last two columns of **Table 4.11-5** compares the Plan against the No Project Alternative, in which new transportation investments cease after 2019, while population and development continue to grow to forecast levels and development follows a more dispersed pattern than called for in the Plan. Compared

to the No Project Alternative, the Plan would result in approximately 0.4 percent less VMT. The Plan would also result in 44 percent increase over the No Project Alternative in transit boardings, and would increase use of active modes, while reducing single occupancy/drive alone and high occupancy use. Both total and per capita VMT measures would drop with the Plan versus the 2042 No Project Alternative.

Impacts on TCAG's overall circulation system resulting from implementation of the proposed 2018 RTP/SCS are considered significant for **Impact TR-1** as a result of the total increase in VMT, despite the decrease in VMT per capita. Many measures intended to reduce vehicle travel and decrease VMT are part of the 2018 RTP/SCS. These include increasing transit use ridesharing and other measures to reduce demand on the transportation system; investments in non-motorized transportation; land use strategies that reduce VMT; and other travel demand measures described in in local agency General Plans. Mitigation is required. **Mitigation Measures MM-TR-1(a)** through **MM-TR-1(d)** are described below.

Level of Significance Before Mitigation

Significant.

Mitigation Measures

Implement **MM-GHG-1(b)** and **MM-GHG-1(c).**

MM-TR-1(a): TCAG shall pursue funding for projects and programs, beyond the currently financially and institutionally feasible measures included in the 2018 RTP/SCS to further improve VMT/capita.

MM-TR-1(b): Consistent with the provisions of Section 15091 of the *State CEQA Guidelines*, TCAG has identified mitigation measures capable of avoiding or reducing the potential for conflicts with the established measures of effectiveness for the performance of the circulation system that are within the jurisdiction and responsibility of local agencies (land use projects) and implementing agencies (transportation projects). Where the Lead Agency has identified that a project has the potential for significant effects, the Lead Agency can and should consider mitigation measures to minimize VMT, including compliance with 2018 RTP/SCS policies, and other adopted local plans and policies, as applicable and feasible. Such measures include, but are not limited to, the following:

General:

- Institute teleconferencing, telecommute and/or flexible work hour programs to reduce unnecessary employee transportation.

- Create a ride-sharing program by designating a certain percentage of parking spaces for ride sharing vehicles, designating adequate passenger loading and unloading for ride sharing vehicles, and providing a web site or message board for coordinating rides.
- Provide a vanpool for employees.
- Provide a Transportation Demand Management (TDM) plan containing strategies to reduce on-site parking demand and single occupancy vehicle travel. The TDM should include strategies to increase bicycle, pedestrian, transit, and carpools/vanpool use, including:
- Inclusion of additional bicycle parking, shower, and locker facilities that exceed the requirement
- Construction of bike lanes per the prevailing Bicycle Master Plan (or other similar document)
- Signage and striping onsite to encourage bike safety
- Installation of pedestrian safety elements (such as cross walk striping, curb ramps, countdown signals, bulb outs, etc.) to encourage convenient crossing at arterials
- Installation of amenities such as lighting, street trees, trash and any applicable streetscape plan.
- Direct transit sales or subsidized transit passes
- Guaranteed ride home program
- Pre-tax commuter benefits (checks)
- On-site car-sharing program (such as City Car Share, Zip Car, etc.)
- On-site carpooling program
- Distribution of information concerning alternative transportation options
- Parking spaces sold/leased separately
- Parking management strategies; including shared parking spaces.
- Promote ride sharing programs e.g., by designating a certain percentage of parking spaces for high-occupancy vehicles, providing larger parking spaces to accommodate vans used for ride-sharing. and designating adequate passenger loading and unloading and waiting areas.
- Encourage bicycling to transit facilities by providing additional bicycle parking, locker facilities, and bike lane access to transit facilities when feasible.
- Encourage the use of public transit systems by enhancing safety and cleanliness on vehicles and in and around stations, providing shuttle service to public transit, offering public transit incentives and providing public education and publicity about public transportation services.
- Encourage bicycling and walking by incorporating bicycle lanes into street systems in regional transportation plans, new subdivisions, and large developments, creating bicycle lanes and walking paths directed to the location of schools and other logical points of destination and provide adequate bicycle parking, and encouraging commercial projects to include facilities on-site to encourage employees to bicycle or walk to work.
- Build or fund a major transit stop within or near transit development
- Work with the school districts to improve pedestrian and bike access to schools and to restore or expand school bus service using lower-emitting vehicles.
- Provide information on alternative transportation options for consumers, residents, tenants and employees to reduce transportation-related emissions.

- Separate sidewalks whenever possible, on both sides of all new street improvement projects, except where there are severe topographic or natural resource constraints.
- Implement traffic and roadway management strategies to improve mobility and efficiency, and reduce associated emissions.

Transportation Project Selection:

- Give priority to transportation projects that would contribute to a reduction in vehicle miles traveled per capita

Public Involvement:

- Carry out a comprehensive public involvement and input process that provides information about transportation issues, projects, and processes to community members and other stakeholders, especially to those traditionally underserved by transportation services.

Transit and Multimodal Impact Fees:

- Assess transit and multimodal impact fees on new developments to fund public transportation infrastructure, bicycle infrastructure, pedestrian infrastructure and other multimodal accommodations

Arterial Traffic Management:

- Modify arterial roadways to allow more efficient bus operation, including bus lanes and signal priority/preemption where necessary.
- Implement and support employer and commercial trip reduction programs.
- Support bicycle use as a mode of transportation by enhancing infrastructure to accommodate bicycles and riders, and providing incentives.
- Establish standards for new development projects to support bicycle use, and require new development projects to include bicycle facilities, as appropriate with the new land use are as follows:

Bicycle and Pedestrian Trails:

- Establish a network of multi-use trails to facilitate safe and direct off-street bicycle and pedestrian travel, and will provide bike racks along these trails at secure, lighted locations.

Bicycle Safety Program:

- Develop and implement a bicycle safety educational program to teach drivers and riders the laws, riding protocols, routes, safety tips, and emergency maneuvers.
- Pursue and provide enhanced funding for bicycle and pedestrian facilities and access projects.

Bicycle Parking:

- Adopt bicycle parking standards that ensure bicycle parking sufficient to accommodate 5 to 10 percent of projected use at all public and commercial facilities, and at a rate of at least one per residential unit in multiple-family developments (suggestion: check language with League of American Bicyclists).

Vehicle Parking:

- Reduce the available parking spaces for private vehicles while increasing parking spaces for shared vehicles, bicycles, and other alternative modes of transportation, as appropriate;
- Eliminate or reduce minimum parking requirements for new buildings;
- "Unbundle" parking (require that parking is paid for separately and is not included in the base rent for residential and commercial space);
- Use parking pricing to discourage private vehicle use, especially at peak times;

- Create parking benefit districts, which invest meter revenues in pedestrian infrastructure and other public amenities;
- Establish performance pricing of street parking, so that it is expensive enough to promote frequent turnover and keep 15 percent of spaces empty at all times;
- Encourage shared parking programs in mixed-use and transit-oriented development areas.
- Establish policies and programs to reduce onsite parking demand and promote ride-sharing and public transit at large events, including:
- Promote the use of peripheral parking by increasing on-site parking rates and offering reduced rates for peripheral parking;
- Encourage special event center operators to advertise and offer discounted transit passes with event tickets;
- Encourage special event center operators to advertise and offer discount parking incentives to carpooling patrons, with four or more persons per vehicle for on-site parking;
- Promote the use of bicycles by providing space for the operation of valet bicycle parking service.

Parking "Cash-out" Program:

- Require new office developments with more than 50 employees to offer a Parking "Cash-out" Program to discourage private vehicle use.

Pedestrian and Bicycle Promotion:

- Work with local community groups and downtown business associations to organize and publicize walking tours and bicycle events, and to encourage pedestrian and bicycle modes of transportation.

Level of Significance After Mitigation

Because this PEIR evaluates impacts at the programmatic level, all project circumstances are not foreseeable and these mitigation measures may not be feasible or effective for some projects. Therefore, even with implementation of **Mitigation Measures MM-TR-1(a)** and **MM-TR-1(b)**, substantial increases in VMT would remain. Reductions in VMT below the 2017 level are not feasible in light of the forecasted increase of 133,127 people in the region by 2042. Thus, this impact would remain significant and unavoidable. No additional feasible mitigation measures are available to reduce significant and unavoidable impacts beyond those identified in this PEIR.

Impact TR-2 **Conflict with an applicable congestion management program, including, but not limited to, level of service standards and travel demand measures, or other standards established by the County congestion management agency for designated roads or highways.**

TCAG, in its role as Tulare's Congestion Management Agency (CMA), maintains the Tulare County Congestion Management Program (CMP). In its role as CMA, TCAG uses LOS measurement to assess the regionally significant system of streets and highway facilities. Proposed projects for the highway system

are also analyzed for LOS impacts, to help determine and rank the type and number of transportation projects necessary to accommodate current and projected future growth.

LOS values range from A to F, representing various levels of traffic flow, from relatively free flowing (LOS A or B) to stop-and-go gridlock traffic (LOS E or F). Additional variations for LOS values are based on the road type. The measure of the LOS is based also in part on whether the facilities are Interrupted traffic flow facilities (facilities that include stop signs, signals, etc.) or uninterrupted traffic flow facilities (would include freeways and other highway facilities that do not have fixed traffic elements such as stop signs or signals). The Tulare CMP has established LOS D as the threshold for acceptable traffic operations in urban areas.

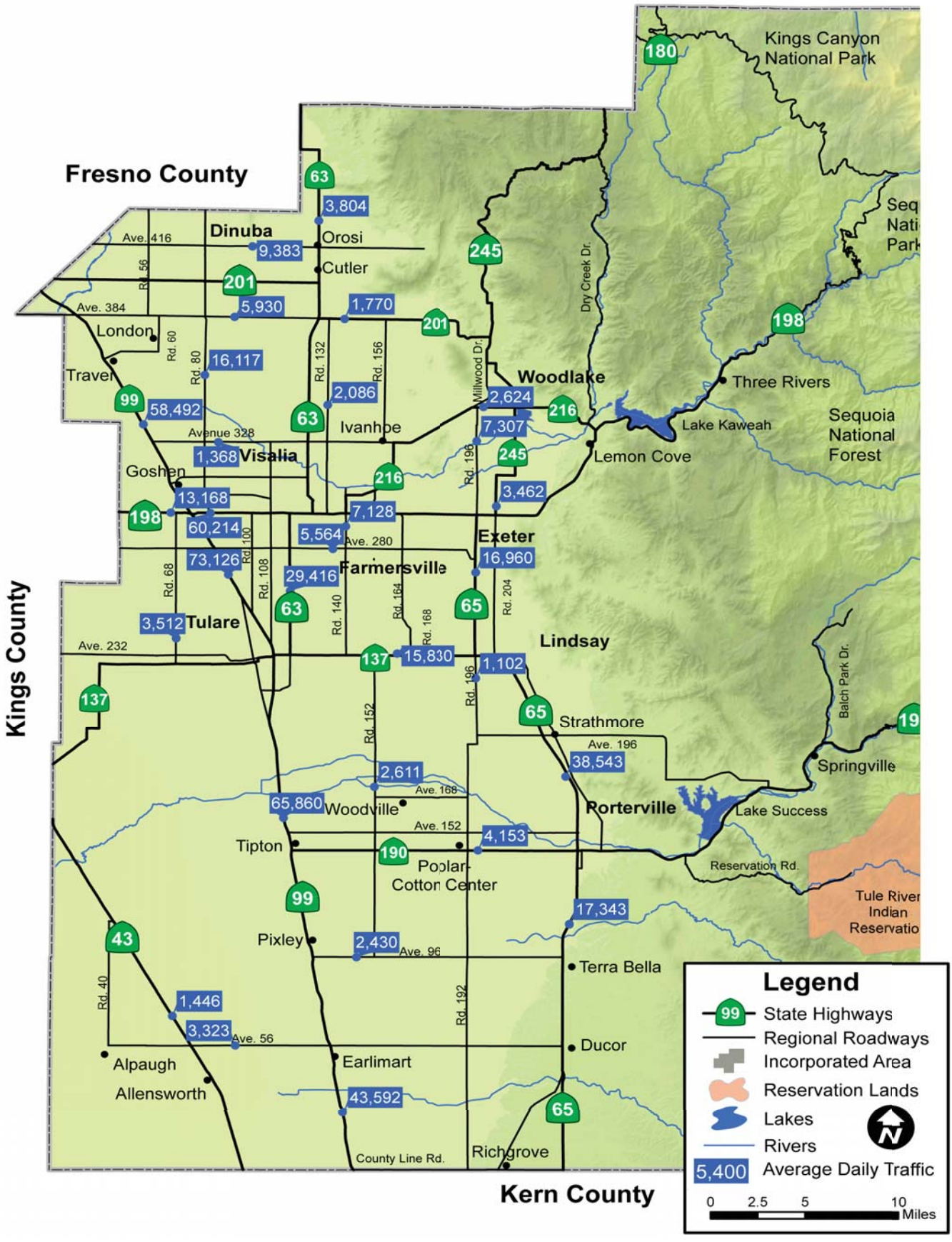
The 2018 RTP/SCS would result in increasing traffic volumes and decreasing LOS on roadways in the County, as shown on the following figures:

- **Figure 4.11-5, Existing Average Daily Traffic (2017),** shows existing traffic volumes on major roadways in the county and **Figure 4.11-6, Average Daily Traffic (2042),** shows 2042 average daily traffic volumes.
- **Figure 4.11-7, Existing PM Peak Hour Regional Level of Service (2017),** shows current levels of congestion regionwide and **Figure 4.11-8, Existing Urban Level of Service (2017),** shows current levels of congestion in the urban areas of Tulare County.
- **Figure 4.11-9, No Project PM Peak Hour Regional Level of Service (2042),** shows 2042 levels of congestion regionwide under the No Project Alternative, and **Figure 4.11-10, No Project Urban Level of Service (2042),** shows 2042 levels of congestion in the urban areas of Tulare County under the No Project Alternative.
- **Figure 4.11-11, Plan PM Peak Hour Regional Level of Service (2042),** shows 2042 levels of congestion regionwide under the Plan, and **Figure 4.11-12, Plan Urban Level of Service (2042),** shows levels of congestion in the urban areas of Tulare County under the Plan.

Figures 4.11-5 through **4.11-12** show that compared to existing conditions, traffic volumes would increase throughout the region and that congestion would increase regionwide, especially in urban areas. Therefore, impacts on Tulare County's roadway operations resulting from implementation of the proposed 2018 RTP/SCS are considered significant for **Impact TR-2.** As discussed above for **Impact TR-1**, measures intended to reduce vehicle travel and improve LOS are part of the 2018 RTP/SCS. These include increasing transit use ridesharing and other measures to reduce demand on the transportation system; investments in non-motorized transportation; land use strategies that reduce VMT; other travel demand measures described in in local agency General Plans; and key roadway investments targeted to reduce congestion levels and improve LOS. Mitigation is required (see **Mitigation Measure MM-TR-2(a)** through **MM-TR-2(c)** below).

Level of Significance Before Mitigation:

Significant.

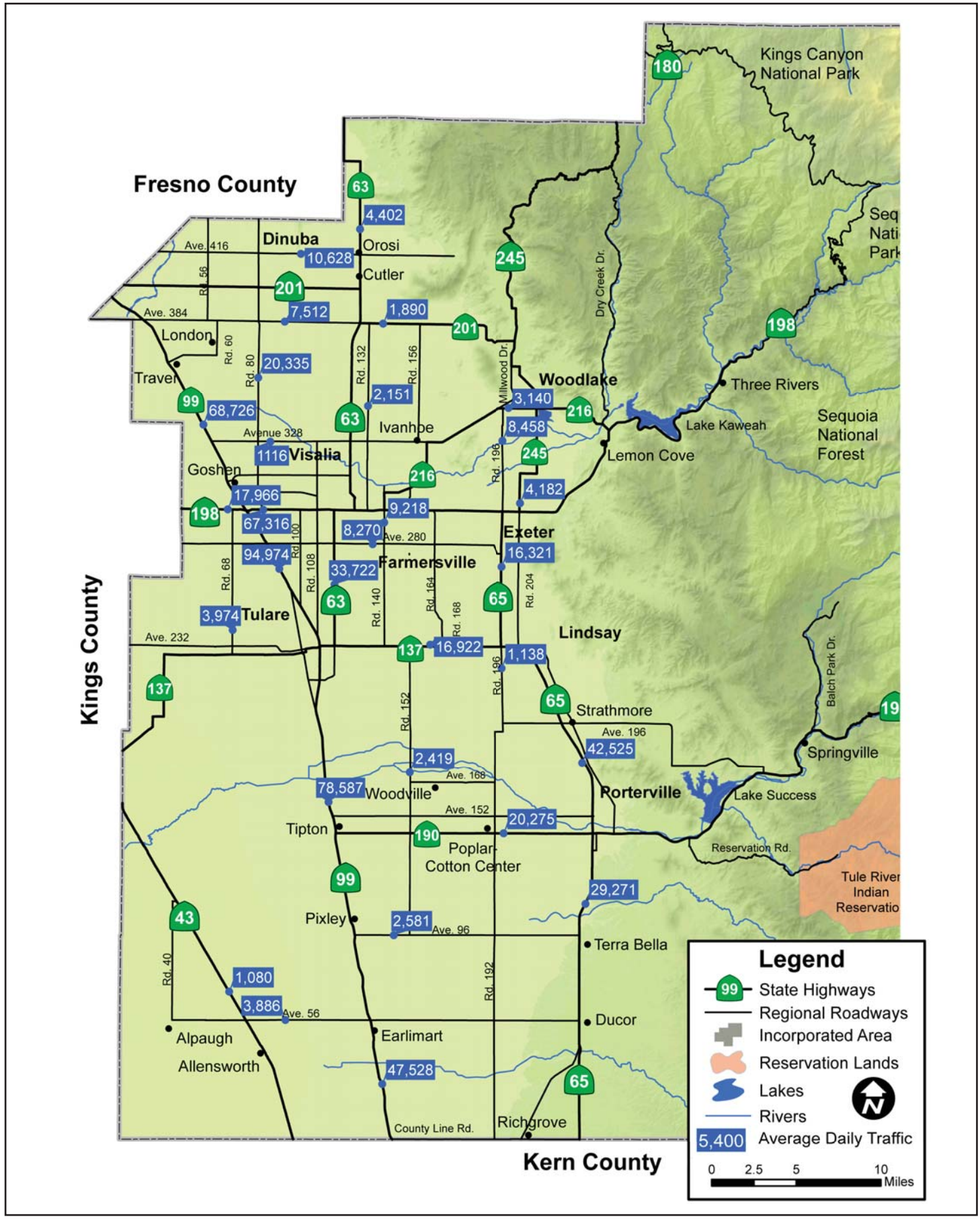


SOURCE: Tulare County Association of Governments Transporation Model TP+/CUBE, 2015

FIGURE **4.11-5**

IMPACT SCIENCES

Existing Average Daily Traffic (2017)

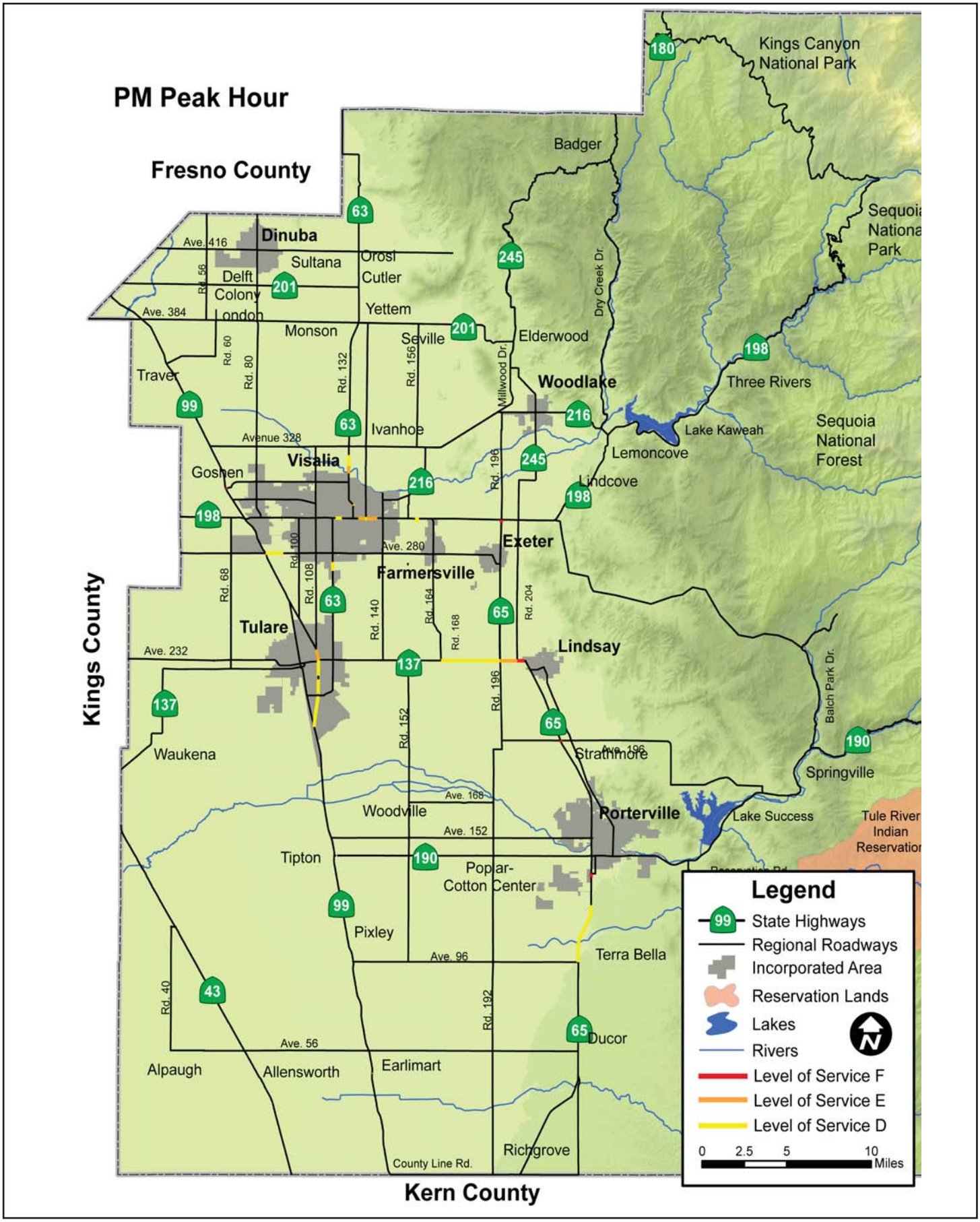


SOURCE: Tulare County Association of Governments Transportation Model TP+/CUBE, 2015

FIGURE **4.11-6**

IMPACT SCIENCES

Average Daily Traffic (2042)



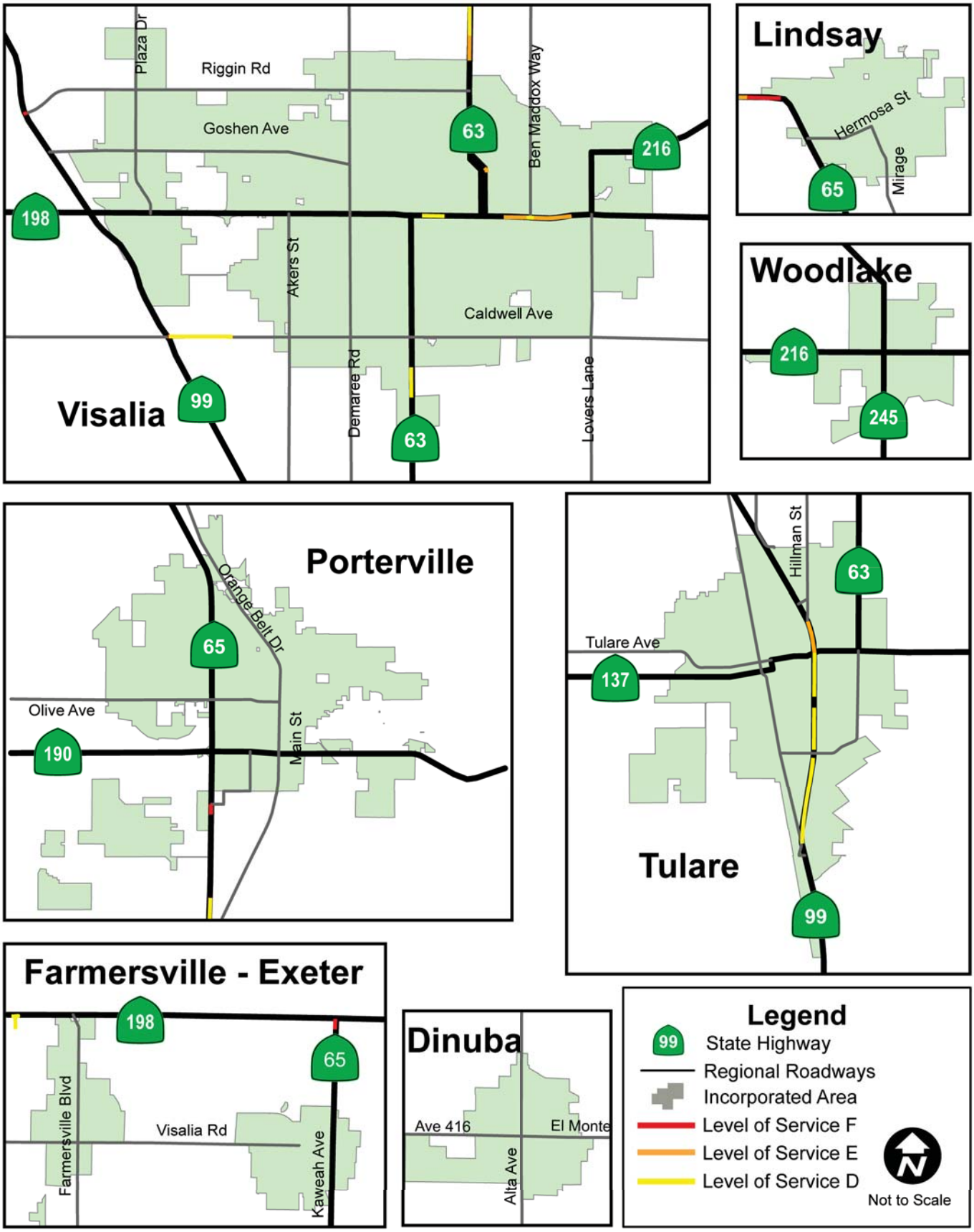
SOURCE: Tulare County Association of Governments, RTP 2018 Urban LOS.CDR

FIGURE **4.11-7**

Existing PM Peak Hour Regional Level of Service (2017)

IMPACT SCIENCES

1290.001•04/18



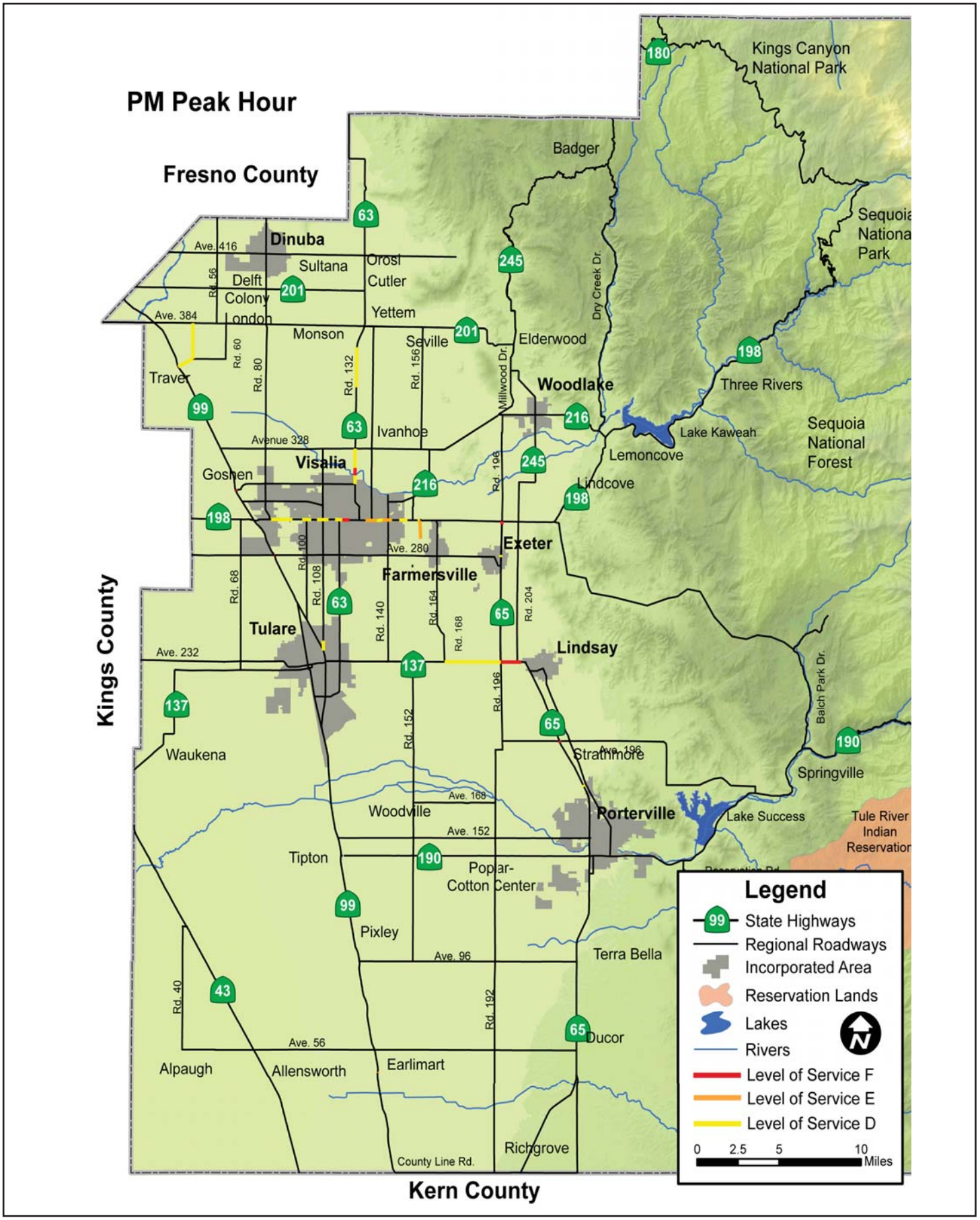
SOURCE: RTP 2018 Urban LOS.CDR

FIGURE **4.11-8**

Existing Urban Level of Service (2017)

IMPACT SCIENCES

1290.001•04/18

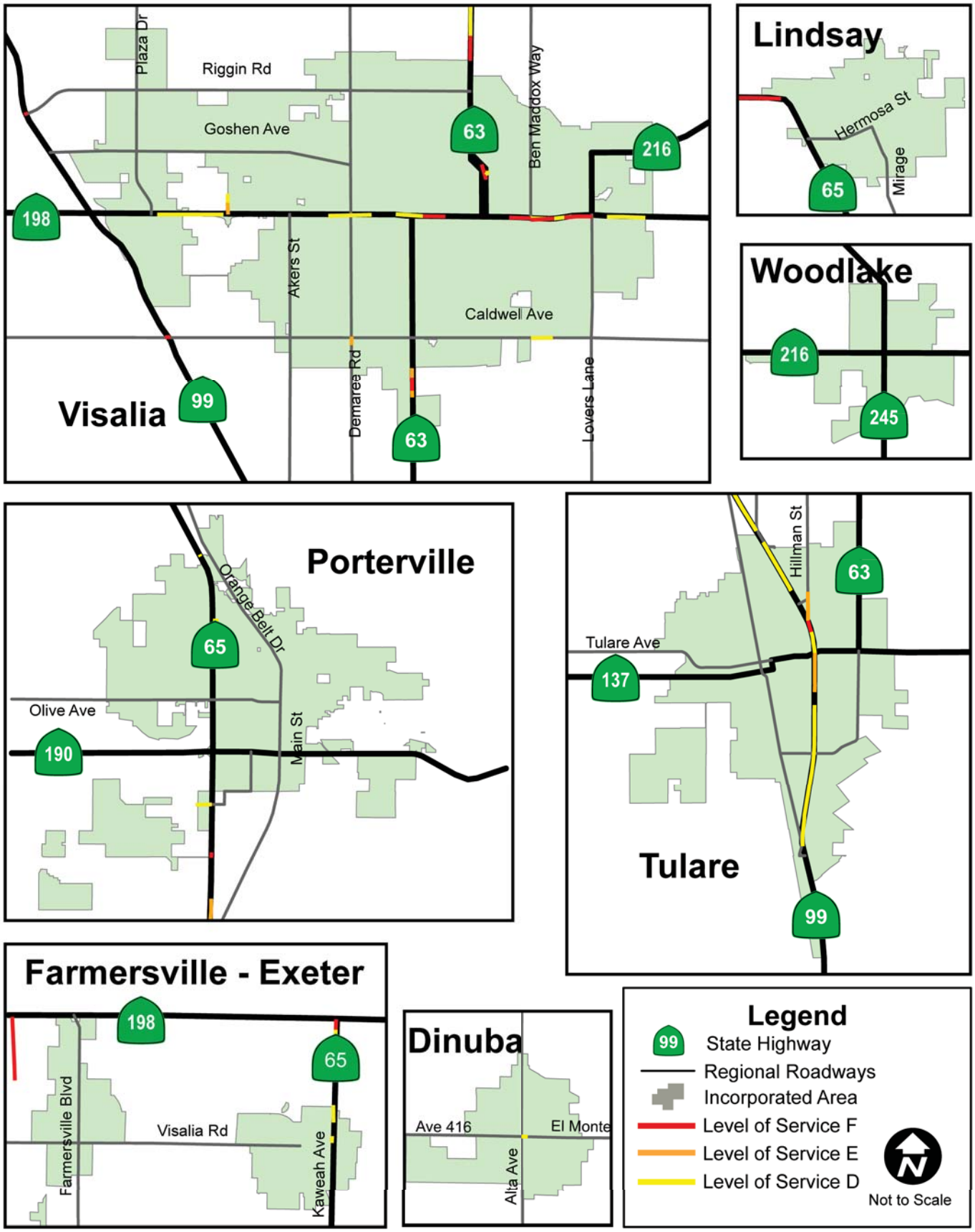


SOURCE: Tulare County Association of Governments

FIGURE **4.11-9**

IMPACT SCIENCES

No Project PM Peak Hour Regional Level of Service (2042)

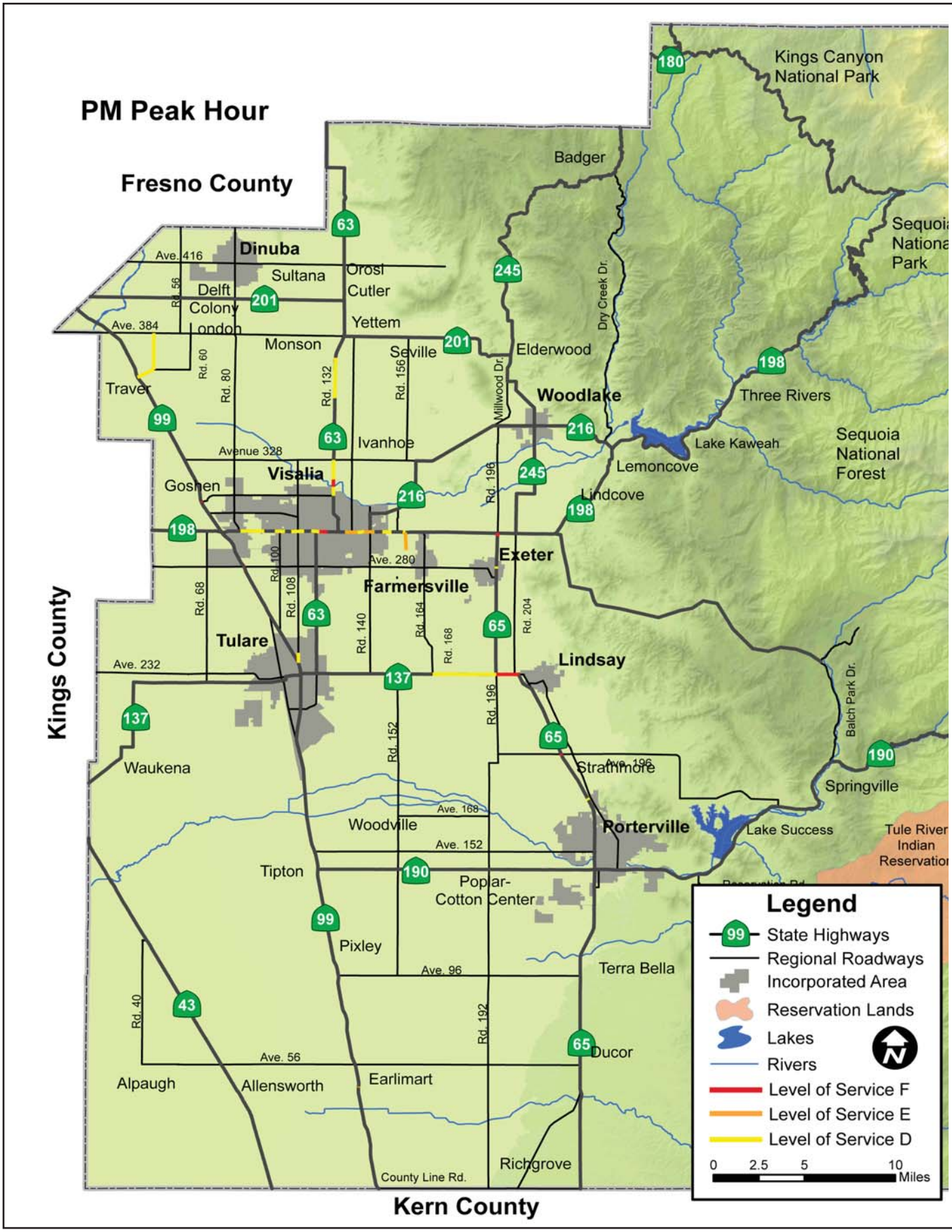


SOURCE: Tulare County Association of Governments, RTP 2018 Urban LOS.CDR

FIGURE **4.11-10**

IMPACT SCIENCES

No Project Urban Level of Service (2042)



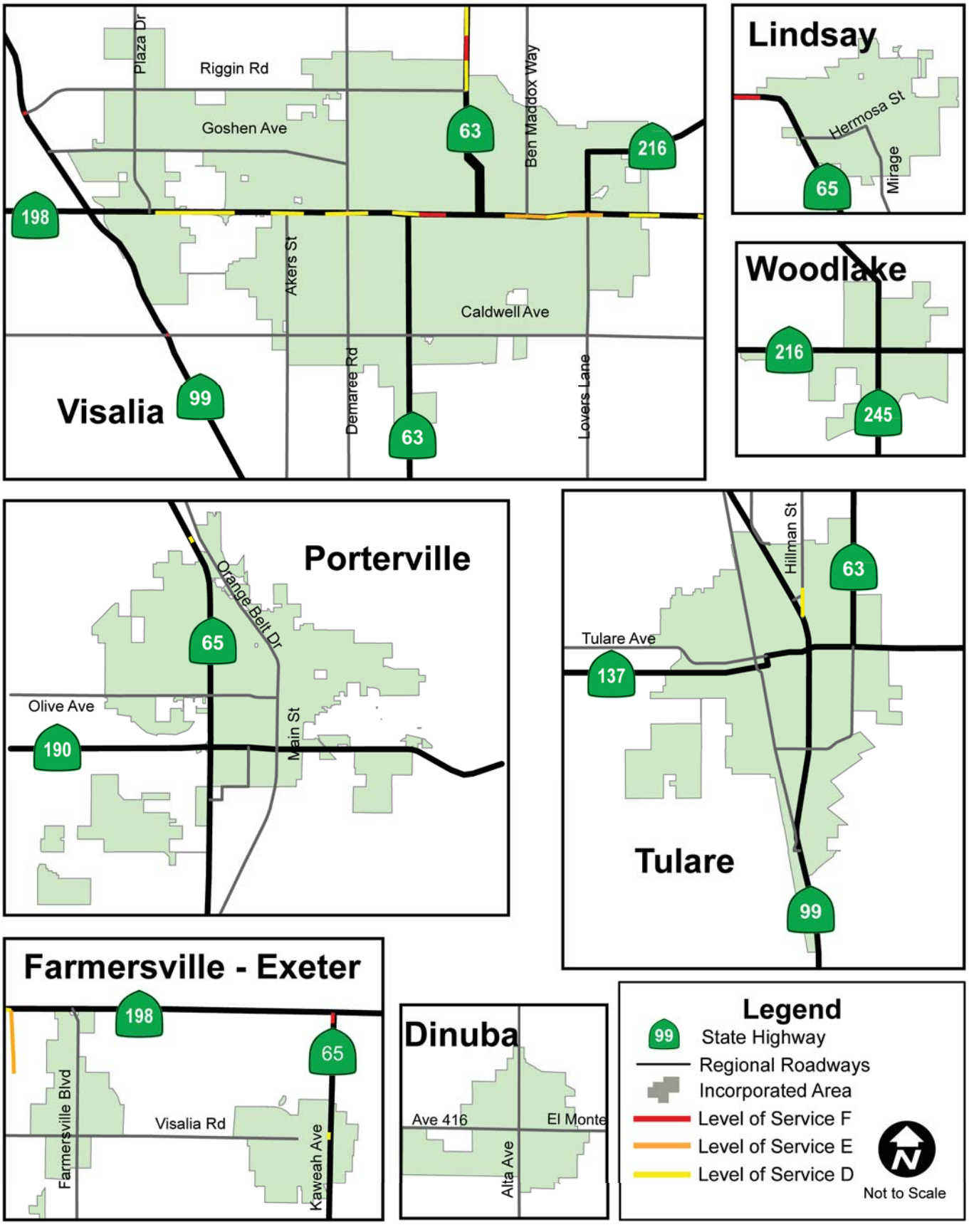
SOURCE: Tulare County Association of Governments, RTP 2018 Urban LOS.CDR

FIGURE **4.11-11**

Plan PM Peak Hour Regional Level of Service (2042)

IMPACT SCIENCES

1290.001•04/18



SOURCE: Tulare County Association of Governments, RTP 2018 Urban LOS.CDR

FIGURE **4.11-12**

IMPACT SCIENCES

Plan Urban Level of Service (2042)

Mitigation Measures

Implement **Mitigation Measures MM-TR-1(a)** and **MM-TR1(b)**.

MM-TR-2(a): TCAG shall inform jurisdictions with projected LOS E and F roadway segments under the Plan of the potential need to develop a Deficiency Plan under the TCAG CMP TCAG shall work with these agencies to identify and implement changes that would increase use of alternative transportation and other means to reduce congestion.

MM-TR-2(b): Consistent with the provisions of Section 15091 of the *State CEQA Guidelines*, TCAG has identified mitigation measures, capable of avoiding conflict with an applicable congestion management program that are within the jurisdictions of local agencies (land use projects) and implementing agencies (transportation projects), , Where the Lead Agency has identified that a project has the potential for significant effects, the Lead Agency can and should consider mitigation measures to reduce congestion, ensuring compliance with the adopted Congestion Management Plan, and other adopted local plans and policies, as applicable and feasible. These measures include but are not limited to the following:

- Encourage policies that prioritize system management, and increase telecommute opportunities, including investment in non-motorized transportation and discouraging private vehicle use, and maximizing the use of alternative transportation:
  - Advocate for a regional, market-based system to price or charge for auto trips during peak hours.
  - Ensure that new developments incorporate both local and regional transit measures into the project design that promote the use of alternative modes of transportation.
  - Coordinate controlled intersections so that traffic passes more efficiently through congested areas. Where traffic signals or streetlights are installed, require the use of LED technology.
  - Encourage the use of car-sharing programs. Accommodations for such programs include providing parking spaces for the car-share vehicles at convenient locations accessible by public transportation.
  - Reduce vehicle hours of delay (VHD), especially daily heavy-duty truck vehicle hours of delay, through goods movement capacity enhancements, system management, increasing rideshare and work-at-home opportunities to reduce demand on the transportation system, investments in non-motorized

transportation, maximizing the benefits of the land use-transportation connection and key transportation investments targeted to reduce heavy-duty truck delay.

- Determine traffic management strategies to reduce, to the maximum extent feasible, traffic congestion and the effects of parking demand by construction workers during construction of projects. Develop a construction management plan that include at least the following items and requirements:
  - A set of comprehensive traffic control measures, including scheduling of major truck trips and deliveries to avoid peak traffic hours, detour signs if required, lane closure procedures, signs, cones for drivers, and designated construction access routes.
  - Notification procedures for adjacent property owners and public safety personnel regarding when major deliveries, detours, and lane closures will occur.
  - Location of construction staging areas for materials, equipment, and vehicles at an approved location that minimizes congestion.
  - A process for responding to, and tracking, complaints pertaining to construction activity, including identification of an onsite complaint manager. The manager shall determine the cause of the complaints and shall take prompt action to correct the problem. The Lead Agency shall be informed who the Manager is prior to the issuance of the first permit.
  - Provision for accommodation of pedestrian flow.
  - As necessary, provision for parking management and spaces for all construction workers to ensure that construction workers do not park in on street spaces.
  - No materials or equipment shall be stored on the traveled roadway at any time.
  - Promote "least polluting" ways to connect people and goods to their destinations.
  - Create an interconnected transportation system that allows a shift in travel from private passenger vehicles to alternative modes, including public transit, ride sharing, car sharing, bicycling and walking, by incorporating the following:
  - Ensure transportation centers are multi-modal to allow transportation modes to intersect;
  - Provide adequate and affordable public transportation choices, including expanded bus routes and service, as well as other transit choices such as shuttles, light rail, and rail;
  - To the extent feasible, extend service and hours of operation to underserved arterials and population centers or destinations such as colleges;

  - Focus transit resources on high-volume corridors and high-boarding destinations such as colleges, employment centers and regional destinations;

  - Coordinate schedules and routes across service lines with neighboring transit authorities;

  - Support programs to provide "station cars" for short trips to and from transit nodes (e.g., neighborhood electric vehicles);

  - Study the feasibility of providing free transit to areas with residential densities of 15 dwelling units per acre or more, including options such as removing service from less dense, underutilized areas to do so;

  - Provide safe and convenient access for pedestrians and bicyclists to, across, and along major transit priority streets;

  - Use park-and-ride facilities to access transit stations only at ends of regional transit ways or where adequate feeder bus service is not feasible.

- Upgrade and maintain transit system infrastructure to enhance public use, including:
  - Ensure transit stops and bus lanes are safe, convenient, clean and efficient;

  - Ensure transit stops have clearly marked street-level designation, and are accessible;

  - Ensure transit stops are safe, sheltered, benches are clean, and lighting is adequate;

  - Place transit stations along transit corridors within mixed-use or transit-oriented development areas at intervals of three to four blocks, or no less than one-half mile.

- Enhance customer service and system ease-of-use, including:
  - Develop a Regional Pass system to reduce the number of different passes and tickets required of system users;

  - Implement "Smart Bus" technology, using GPS and electronic displays at transit stops to provide customers with "real-time" arrival and departure time information (and to allow the system operator to respond more quickly and effectively to disruptions in service);

  - Investigate the feasibility of an on-line trip-planning program.

- Prioritize transportation funding to support a shift from private passenger vehicles to transit and other modes of transportation, including:
  - Give funding preference to improvements in public transit over other new infrastructure for private automobile traffic;

  - Before funding transportation improvements that increase roadway capacity and VMT, evaluate the feasibility and effectiveness of funding projects that support alternative modes of transportation and reduce VMT, including transit, and bicycle and pedestrian access.

- Support voluntary, employer-based trip reduction programs, including:
  - Provide assistance to regional and local ridesharing organizations;
  - Advocate for legislation to maintain and expand incentives for employer ridesharing programs;
  - Require the development of Transportation Management Associations for large employers and commercial/ industrial complexes;
  - Provide public recognition of effective programs through awards, top ten lists, and other mechanisms.

- Implement a "guaranteed ride home" program for those who commute by public transit, ride-sharing, or other modes of transportation, and encourage employers to subscribe to or support the program.
- Encourage and utilize shuttles to serve neighborhoods, employment centers and major destinations.
- Create a free or low-cost local area shuttle system that includes a fixed route to popular tourist destinations or shopping and business centers.
- Work with existing shuttle service providers to coordinate their services.
- Facilitate employment opportunities that minimize the need for private vehicle trips, including:
  - Amend zoning ordinances and the Development Code to include live/work sites and satellite work centers in appropriate locations;
  - Encourage telecommuting options with new and existing employers, through project review and incentives, as appropriate.

Level of Significance After Mitigation

Because this PEIR evaluates impacts at the programmatic level, all project circumstances are not foreseeable and these mitigation measures may not be feasible or effective for some projects. Therefore, this impact remains significant and unavoidable after mitigation. No additional feasible mitigation measures are available to reduce significant and unavoidable impacts beyond those identified in this PEIR.

Impact TR-3 **Result in a change in air traffic patterns, including either an increase in air traffic levels or a change in location that results in substantial safety risks.**

Implementation of the 2018 RTP/SCS would not by itself result in changes in air traffic patterns; however, increased population that would occur by 2042 would likely result in increased air traffic. Implementation of the Tulare County Comprehensive Airport Land Use Plan (ALUP) would avoid safety risks associated with air traffic to the extent feasible.

Level of Significance Before Mitigation

Less than significant.

Mitigation Measures

None required.

Level of Significance After Mitigation

Less than Significant.

Impact TR-4 **Substantially increase hazards due to a design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment).**

The 2018 RTP/SCS would not result in increased hazards due to design feature (e.g., sharp curves or dangerous intersections) or increase conflicts between incompatible uses (e.g., farm equipment and other vehicular traffic). Design of new transportation facilities, including new pedestrian and bicycle facilities, takes into account potential hazards and avoids risks to the extent feasible.

Level of Significance Before Mitigation

Less than significant.

Mitigation Measure

None required.

Level of Significance After Mitigation

Less than significant.

Impact TR-5 Result in inadequate emergency access.

Between now and 2042, vehicle travel and congestion would increase, which could adversely impact emergency access. The adequacy of emergency service may be influenced by factors such as staffing levels, emergency response times, and technology improvements, management strategies, and mutual aid agreements.

All major projects, both transportation and development, would undergo further environmental analysis that would include evaluation and mitigation of impacts to emergency services. The implementing and local agencies would use these analyses to ensure adequate access for emergencies.

While the 2018 RTP/SCS would increase congestion, there is not a direct relationship between predicted travel delay and emergency response times, as California state law requires drivers to yield the right-of-way to emergency vehicles and even permits emergency vehicles to use opposing lane of travel, the center turn lanes, or bus-only lanes. In some instances, roadway reconfigurations with the implementation of the transportation improvements as part of the 2018 RTP/SCS could improve emergency access.

It would be speculative to predict the 2018 RTP/SCS emergency response impacts at the project level because specific details concerning land use and transportation projects are unavailable. As explained above, the relationship between emergency access and traffic is complex and involves project-specific factors such as the following:

- The proximity of emergency service facilities to those they serve.
- The opportunity for emergency responders to use alternative routes in an area.
- The specific street configuration.

The fire departments throughout the County are responsible for maintaining adequate response times (see discussion of impacts to Fire Protection in **Section 4.10-1 Public Services – Fire**), and future projects, both transportation and development, would undergo further environmental analysis that would include evaluation and mitigation of impacts to emergency access. Therefore, impacts would be less than significant and no mitigation is required.

Level of Significance Before Mitigation:

Less than significant.

Mitigation Measure

None required.

Level of Significance After Mitigation

Less than significant.

Impact TR-6 **Conflict with adopted policies, plans, or programs regarding public transit, bicycle or pedestrian facilities, or otherwise decrease the performance or safety of such facilities.**

The 2018 RTP/SCS includes a series of individual improvement projects and programs (including public transit, bicycle and trail, and pedestrian projects) and a land use strategy designed to enhance and support Tulare's multi-modal transportation system. The 2018 RTP/SCS is consistent with, and would not conflict with, TCAG's Regional Active Transportation Plan and transit plans of local transit providers. Individual transportation or land use projects must be consistent with adopted policies, plans, or programs regarding public transit, bicycle, or pedestrian facilities, and must conform to evolving requirements for performance and safety standards. The 2018 RTP/SCS would increase, rather than decrease, the performance of transit, bicycle, and pedestrian facilities; **Table 4.11-5** shows higher mode shares for each of these modes between 2017 and 2042. Therefore, impacts would be less than significant and no mitigation is required.

Level of Significance Before Mitigation

Less than significant.

Mitigation Measures

None required.

Level of Significance After Mitigation

Less than significant.

4.11.4 CUMULATIVE EFFECTS

The 2018 RTP/SCS is a cumulative plan by design that integrates transportation investments with land use strategies for an entire region. As such, the analysis of transportation impacts presented above is inherently a cumulative analysis compliant with the requirements of CEQA. However 2018 RTP/SCS

would contribute to additional transportation impacts beyond Tulare County. The cumulative analysis impact area for transportation consists of Tulare County and the three San Joaquin Valley counties adjoining the Tulare County region: Kern, Kings, and Fresno.

Within the cumulative analysis impact area, implementation of the 2018 RTP/SCS combined with cumulative development outside the region has the potential to result in VMT increases and congestion occurring outside Tulare County, which would be considered a significant cumulative impact. As discussed above, implementation of the 2018 RTP/SCS would have significant impacts related to increases in VMT and congestion. Congestion and delay from RTP/SCS plans from adjacent counties would add to these significant cumulative impacts.

The 2018 RTP/SCS contribution to these impacts would be cumulatively considerable. Implementation of **Mitigation Measures MM-TR-1(a), TR-1(b), MM-TR-2(a)** and **MM-TR-2(b)** would reduce the 2018 RTP/SCS contribution to cumulative transportation impacts; however, the Plan's contribution to these impacts would remain cumulatively considerable.

4.12 UTILITIES AND SERVICE SYSTEMS

This section addresses the existing utilities and service systems (energy, solid waste, and wastewater) within the region and evaluates the significance of the changes in these services that could result from the 2018 RTP/SCS. In addition, this section provides mitigation measures to reduce identified impacts. Sources utilized in this discussion include the California Energy Commission (CEC), the Tulare County Solid Waste Department, California State Water Resources Control Board.

4.12.1.1 ENVIRONMENTAL SETTING

This section describes the Tulare County energy setting, and provides a discussion of energy impacts of implementing the 2018 RTP/SCS. The section generally follows the guidance for the evaluation of energy impacts provided in Appendix F, Energy Conservation, of the *State CEQA Guidelines*. In addition, this PEIR provides regional-scale mitigation measures as well as mitigation measures for subsequent, site-specific environmental review documents prepared by lead agencies to reduce identified impacts. Residual impacts after mitigation are identified. Both temporary impacts relating to construction activity and long-term impacts associated with population growth and associated growth in vehicle traffic and energy consumption are discussed.

It is noteworthy that the directives in Appendix F are advisory. In addition, Appendix F states the following: "Potentially significant energy implications of a project shall be considered in an EIR to the extent relevant and applicable to the project. The following list of energy impact possibilities and potential conservation measures is designed to assist in the preparation of an EIR. In many instances specific items may not apply or additional items may be needed. Where items listed below are applicable or relevant to the Project, they should be considered in the EIR." Therefore, the evaluation below does not address every feature in Appendix F., The focus of the analysis is whether the Project would result in a wasteful or inefficient consumption of energy, and whether mitigation is required to avoid or reduce inefficient or wasteful consumption of energy.

Oil

The primary energy source for the United States is petroleum (referred to as oil), which is refined to produce fuels like gasoline, diesel, and jet fuel. Oil is a finite, nonrenewable energy source. World consumption of petroleum products has grown steadily and as of 2016, world consumption of oil had reached 97.7 million barrels per day.[1] The world supply of oil is anticipated to peak (i.e., reach the point of maximum production). The timing of the peak depends on multiple, uncertain factors that will affect how quickly remaining oil is consumed; how much of the amount in the ground can be extracted and produced based on technological, economic demand for oil and environmental feasibility; and future demand.

1 International Energy Agency. Oil Market Report. https://www.iea.org/oilmarketreport/omrpublic/. February 2018.

The US consumes roughly 19.69 million barrels per day.[2] US oil production peaked around 1970 and has been declining ever since.[3] The US transportation sector is heavily dependent on oil and in 2011 represented about 29 percent of US oil consumption.[4]

California's transportation sector is equally dependent upon oil, with petroleum-based fuels currently providing nearly all (99 percent) of California's transportation energy needs.[5] In 2016, Californians consumed over 15 billion gallons of gasoline and diesel fuel, resulting in the estimated emission of over 130 million metric tons of GHG equivalence. According to the latest inventory of statewide GHG emissions values, in 2015, the transportation sector represented 39 percent of statewide GHG emissions.[6]

Between 2018 and 2030, the state's population is projected to increase at an annual compound average rate of 1.1 percent, compared with a projected growth rate of 2.9 percent in real personal income over the same period. These growth rates are anticipated to result in substantial increases in travel demand for California.[7]

According to the CEC's Transportation Energy Demand Forecasts (2018-2030), while the number of alternative fuel vehicles on the road in California has increased at rates substantially higher than growth rates for gasoline vehicles, the total number of alternative fuel vehicles in California is still small compared to the number of gasoline and diesel vehicles. In 2015, the California Department of Motor Vehicles (DMV) registered 25,554,308 light duty gasoline vehicles, 562,102 light duty diesel vehicles, 890,906 light duty hybrid vehicles, 1,554,413 light duty flex fuel vehicles, 87,087 light duty electric vehicles, and 27,644 light duty natural gas vehicles.[8]

Forecasts for petroleum consumption show a drop in gasoline consumption due to several variables including the increase in gasoline prices and the improvement of hybrid and alternative fuel

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2 US Energy Information Administration. http://www.eia.gov/tools/faqs/faq.cfm?id=33&t=6. 2016. Accessed: March 2018.

3 U.S. Energy Information Administration. Petroleum & Other Liquids Data: U.S. Field Production of Crude Oil. https://www.eia.gov/dnav/pet/hist/LeafHandler.ashx?n=pet&s=mcrfpus2&f=a. Accessed: March 2018.

4 US Energy Information Administration. Use of Energy in the United States Explained: Energy Use for Transportation. https://www.eia.gov/energyexplained/?page=us_energy_transportation, 2013.

5 The California Energy Commission, http://www.energy.ca.gov/almanac/transportation_data/gasoline/piira_retail_survey.html, 2016.

6 California Energy Commission, https://www.arb.ca.gov/cc/inventory/data/data.htm , 2017.

7 California Energy Commission, 2010 Transportation Energy Forecasts and Analyses for the 2009 Integrated Policy Report, 2013.

8 California Energy Commission, *Transportation Energy Demand Forecast, 2018-2030*. http://docketpublic.energy.ca.gov/PublicDocuments/17-IEPR-05/TN221893_20171204T085928_Transportation_Energy_Demand_Forecast_20182030.pdf. 2017

technologies. The CEC forecasts that between 2017 and 2030 total annual gasoline consumption in California will decline from approximately 15.8 billion gallons in 2007 to between 12.3 and 12.7 billion gallons in 2030. This decline comes in response to both increasing vehicle electrification and higher fuel economy for new gasoline vehicles.

Table 4.12-1, Annual Gasoline, Diesel and Energy Consumption in Tulare County, illustrates the decrease in annual fuel consumption in Tulare County and the associated estimated energy use.

Table 4.12-1
Annual Gasoline, Diesel and Energy Consumption in Tulare County

	2017 Annual Fuel Use (million gallons)	2017 Daily Energy Use (Billion BTUs)
Gasoline	159.6	49.9
Diesel	67.1	25.5
Total	**226.7**	**75.3**

Note: One gallon of gasoline is roughly equivalent to 114,000 British thermal units (BTUs), while one gallon of diesel is roughly equivalent to 138,700 BTUs
Source: U.S. Environmental Protection Agency [EPA], August 1995; U.S. EIA, June 2012); Fuel usage from TCAG 2018.

Similar to California and the US as a whole, Tulare County relies primarily on oil to meet its transportation needs. Motor vehicles are the largest consumer of fuels in the region's transportation sector. After gasoline, diesel fuel is the most used transportation energy source. The primary consumers of diesel fuel in the transportation sector are heavy-duty trucks, with medium-duty trucks, buses, light-duty passenger cars, and railway locomotives accounting for remaining diesel fuel consumption.

Although average fuel efficiency for autos and trucks has experienced some improvements during the last quarter century, fuel consumption associated with the large increase in VMT has exceeded the fuel consumption reductions achieved by improved efficiency, and the total amount of annual fuel consumption has continued to increase. The equipment and vehicles involved in the construction of transportation infrastructure (i.e., roadway and highway improvements; rail lines; etc.) also consume energy. Currently, construction equipment and vehicles are generally dependent on petroleum-based fuels.

Electricity

California relies on a regional power system comprised of a diverse mix of natural gas, renewable, hydroelectric, and nuclear generation resources. The Southern California Edison Company provides the

majority of the electricity in Tulare County including all the incorporated cities within the region. The northern and southeastern corners of the County are served by the Pacific Gas & Electric Company.[9]

In 2016, approximately 68 percent of the electrical power needed to meet California's demand was produced in the state. Approximately 15 percent of its electricity demand was imported from the Pacific Northwest and 17 percent from the Southwest.[10] In 2016, California's electricity was derived primarily from natural gas (36.48 percent), large hydroelectric resources (10.21 percent), coal (4.13 percent), nuclear sources (9.18 percent), oil (0.01 percent), other petroleum coke or waste heat (0.14 percent), unspecified sources (14.39 percent) and renewable resources that include geothermal, biomass, small hydroelectric resources, wind, and solar (25.45 percent).[11]

Total statewide electricity consumption increased from 228,473 gigawatt-hours (GWh) in 1990 to 264,230 GWh in 2000, which is an estimated annual growth rate of 1.46 percent. The statewide electricity consumption in 2010 was 272,300 GWh, reflecting an annual growth rate of 2.07 percent between 1990 and 2010. In 2015 statewide energy consumption was about 284,005 GWh. In 2016 statewide electricity consumption increased to approximately 285,701 GWh. This represents an approximate 0.6% increase as compared to 2015, and approximately 4.92% increase as compared to 2010.[12] However, it is important to note that in Tulare County, energy consumption from 2015 to 2016 decreased at a rate of -1.6%, from 4,493 to 4,423 GWh. [13]

Peak electricity demand, expressed in megawatts (MWh), measures the largest electric power requirement during a specified period, usually integrated over 1 hour. A single MWh is enough power to meet the electricity needs of 1,000 typical California homes. Peak demand is important in evaluating system reliability, determining congestion points on the electrical grid, and identifying potential areas where additional transmission, distribution, and generation facilities may be needed. California's peak demand typically occurs in August between 3:00 PM and 5:00 PM. High temperatures lead to increased use of air conditioning, which in combination with industrial loads, commercial lighting, and office

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9 State of California Energy Commission. California Electricity Utility Service Area. Website. http://www.energy.ca.gov/maps/serviceareas/Electric_Service_Areas_Detail.pdf. Accessed April 2018.

10 California Energy Commission, http://www.energy.ca.gov/almanac/electricity_data/total_system_power.html, 2017.

11 California Energy Commission, http://www.energy.ca.gov/almanac/electricity_data/total_system_power.html. Accessed April 2018.

12 California Energy Commission, 2011 Integrated Energy Commission Report, 2013; California Energy Commission Electricity Consumption by County http://www.ecdms.energy.ca.gov/elecbycounty.aspx, 2018.

13 Ibid.

equipment comprise the major demand for electricity consumption in the peak demand period in the state. In 2016, mid-peak electricity demand for California was about 281,334,000 MWh.[14]

Natural Gas

In Tulare County, the Southern California Gas Company provides natural gas in and between the cities throughout the region.[15] Natural gas supplies are derived from underground sources and brought to the surface at gas wells. Once extracted, gas is purified and the odorant that allows gas leaks to be detected is added to the normally odorless gas. Natural gas suppliers then send the gas into transmission pipelines, which are usually buried underground. Compressors propel the gas through the pipeline system, which delivers it to homes and businesses.

Total statewide annual end-user natural gas consumption increased from 12,794 million therms in 1990 to 13,713 million therms in in 2000, which is an estimated annual growth rate of 7 percent. Statewide annual natural gas consumption then decreased to 12,655 million therms in 2010, which is an estimated decrease of approximately 8 percent. The statewide annual end-user natural gas consumption in 2016 was 12,739 million therms, reflecting an increase of less than 1 percent over the six years between 2010 and 2016.

Tulare County consumed 94 million therms of natural gas in 1990; 124 million therms of natural gas in 2000 (32% increase from 1990), and 156 million therms of natural gas in 2010 (26% increase from 2000). In 2016, the Tulare County consumed 151 million therms of natural gas (3% decrease from 2010).[16]

Renewable and Alternative Energy Sources

Renewable Energy – Wind Energy and Solar Power

Electricity supply reliability depends, in part, on the diversity of energy sources. In 1978, congress passed the Public Utilities Regulatory Policies Act (PURPA). The act defines facilities that use alternative or renewable energy sources as "qualifying facilities." It provides financial incentives for their installation and requires utilities to sign long-term power purchase contracts with qualifying facilities. The California Public Utilities Commission (CPUC) has adopted contract incentives to assist qualifying facilities.

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14 California Energy Commission, California Energy Demand Updated Forecast, 2017-2027. http://docketpublic.energy.ca.gov/PublicDocuments/16-IEPR-05/TN215745_20170202T125433_FINAL_California_Energy_Demand_Updated_Forecast_20172027.pdf. Accessed October, 2017.

15 Southern California Gas Company. Gas Transmission and High Pressure Distribution Pipeline Interactive Map: Tulare County. Website, https://www.socalgas.com/stay-safe/pipeline-and-storage-safety/natural-gas-pipeline-map/tulare#. Accessed April 2018.

16 California Energy Commission, 2018. Gas Consumption by County. http://www.ecdms.energy.ca.gov/gasbycounty.aspx, accessed March, 2018.

Qualifying facilities built in Tulare County include wind and solar installations and a number of cogeneration units around the region. Original provisions of PURPA encouraged the construction of biomass-to-energy facilities, which use materials such as agricultural and wood waste as fuel for energy production. During the period from 2011 to 2017, the County approved 2,532 permits with a total generating capacity of 570.7 megawatts (MW).

The County Board of Supervisors passed an ordinance in 2015 that required solar systems or alternative energy systems to be install a specific percentage of single-family residences in new residential development proposed in subdivision map applications.

Alternative Fuels

Alternative fuels, as defined by the Energy Policy Act of 1992, include ethanol, natural gas, propane, hydrogen, biodiesel, electricity, methanol, and p-series fuels. These fuels are being used worldwide in a variety of vehicle applications.[17] Use of these fuels for transportation can generally reduce air pollutant emissions and can be domestically produced and derived from renewable sources.

Electricity is considered nonrenewable when generated from natural gas or coal, but considered renewable when generated from sources like solar, hydroelectric, or wind energy. Most alternative fuel facilities in the region supply compressed natural gas (CNG) or electricity. The region's limited alternative fuel infrastructure constrains the use of alternative fuel passenger vehicles.

Fleet Vehicles

The entire County vehicle fleet includes 158 fuel efficient light duty hybrid vehicles of a fleet of 1,313 vehicles. The County purchased 47 new vehicles in FY 2016/2017. As vehicles reach retirement age, the County has been continuing purchases of new more fuel efficient vehicles, thus meeting the latest standards.

The County also operates Tulare County Area Transit (TCaT), which uses a fleet of 26 compressed natural gas (CNG) fueled buses to provide public transit. CNG buses emit 9 percent fewer GHG emissions compared with older diesel buses.[18]

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17 US Department of Energy, Alternative Fuels Data Center, January 2018 from https://www.afdc.energy.gov/fuels/.

18 2016/2017 Climate Action Plan Progress Report, Tulare County, California Mitchell Air Quality Consulting, 2017

4.12.1.2 REGULATORY FRAMEWORK

Federal

Public Utility Regulatory Policies Act of 1978 (PURPA) (Public Law 95-617).

PURPA was passed in response to the unstable energy climate of the late 1970s. PURPA sought to promote conservation of electric energy. Additionally, PURPA created a new class of nonutility generators, small power producers, from which, along with qualified cogenerators, utilities are required to buy power.

PURPA was in part intended to augment electric utility generation with more efficiently produced electricity and to provide equitable rates to electric consumers. Utility companies are required to buy all electricity from "Qfs" (qualifying facilities) at avoided cost (avoided costs are the incremental savings associated with not having to produce additional units of electricity). PURPA expanded participation of nonutility generators in the electricity market, and demonstrated that electricity from nonutility generators could successfully be integrated with a utility's own supply. PURPA requires utilities to buy whatever power is produced by Qfs (usually cogeneration or renewable energy).

Energy Policy Act of 2005

On August 8, 2005, President George W. Bush signed the National Energy Policy Act of 2005 (Public Law 109–58) into law. This comprehensive energy legislation contains several electricity-related provisions that aim to:

- Help ensure that consumers receive electricity over a dependable, modern infrastructure;
- Remove outdated obstacles to investment in electricity transmission lines;
- Make electric reliability standards mandatory instead of optional; and
- Give Federal officials the authority to site new power lines in DOE-designated national corridors in certain limited circumstances.

The Renewable Fuel Standard (RFS) program was created under the Energy Policy Act (EPAct) of 2005 and established the first renewable fuel volume mandate in the United States. The program regulations were developed in collaboration with refiners, renewable fuel producers, and many other stakeholders. As required under EPAct, the original RFS program (RFS1) required 7.5 billion gallons of renewable fuel to be blended into gasoline by 2012.

Clean Air Act

Section 211(o) of the Clean Air Act (the Act), as amended by the Energy Policy Act of 2005, requires the Administrator of the EPA to annually determine a renewable fuel standard (RFS) which is applicable to refiners, importers and certain blenders of gasoline, and publish the standard in the Federal Register by November 30 of each year. On the basis of this standard, each obligated party determines the volume of renewable fuel that it must ensure is consumed as motor vehicle fuel. This standard is calculated as a percentage, by dividing the amount of renewable fuel that the Act requires to be blended into gasoline for a given year by the amount of gasoline expected to be used during that year, including certain adjustments specified by the Act. The notice, published in December of 2017, included an RFS of 10.67 percent for 2018 (82 FR 58486).

Energy Independence and Security Act of 2007

The Energy Independence and Security Act (EISA) (Public Law 110-140) was signed into law by President George W. Bush on December 19, 2007. The Act's goal is to achieve energy security in the United States by increasing renewable fuel production, improving energy efficiency and performance, protecting consumers, improving vehicle fuel economy, and promoting research on greenhouse gas (GHG) capture and storage. Under the EISA, the updated RFS program (RFS2) was expanded in several key ways:

1. EISA expanded the RFS program to include diesel, in addition to gasoline.
2. EISA increased the volume of renewable fuel required to be blended into transportation fuel from 9 billion gallons in 2008 to 36 billion gallons by 2022.
3. EISA established new categories of renewable fuel, and set separate volume requirements for each one.
4. EISA required the U.S. Environmental Protection Agency (EPA) to apply lifecycle GHG performance threshold standards to ensure that each category of renewable fuel emits fewer GHGs than the petroleum fuel it replaces.

RFS2 lays the foundation for achieving significant reductions of GHG emissions from the use of renewable fuels, for reducing imported petroleum, and encouraging the development and expansion of our nation's renewable fuels sector. The EISA also includes a variety of new standards for lighting and for residential and commercial appliance equipment. The equipment includes residential refrigerators, freezers, refrigerator-freezers, metal halide lamps, and commercial walk-in coolers and freezers.

State

California Energy Commission

The California Energy Commission is the state's primary energy policy and planning agency. Created by the Legislature in 1974, six basic responsibilities guide the Energy Commission as it sets state energy policy:

- forecasting future energy needs;
- promoting energy efficiency and conservation by setting the state's appliance and building efficiency standards;
- supporting public interest energy research that advances energy science and technology through research, development and demonstration programs;
- developing renewable energy resources and alternative renewable energy technologies for buildings, industry and transportation;
- licensing thermal power plants 50 megawatts or larger; and
- planning for and directing state response to energy emergencies.[19]

Warren-Alquist Act

The 1975 Warren-Alquist Act established the California Energy Resources Conservation and Development Commission, now known as CEC. The Act established a state policy to reduce wasteful, uneconomical, and unnecessary uses of energy by employing a range of measures. The CPUC regulates privately-owned utilities in the energy, rail, telecommunications, and water fields.

State of California Integrated Energy Policy Report

In 2002, the Legislature reconstituted the State's responsibility to develop an integrated energy plan for electricity, natural gas, and transportation fuels. The CEC adopts and transmits to the Governor and Legislature a report of findings every two years and updates the report every other year. These reports make recommendations to increase California's energy supplies, reduce energy demand, broaden the range of alternatives to conventional energy sources, and improve the state's energy delivery infrastructure.

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19 The California Energy Commission. 2014. California Energy Commission Updating Appliance Efficiency Enforcement Process. Available online at: http://www.energy.ca.gov/releases/2014_releases/2014-02-27_appliance_efficiency_enforcement_nr.html, accessed April 25, 2018.

California Public Utilities Commission

The California Public Utilities Commission (CPUC) has authority to set electric rates, regulate natural gas utility service, protect consumers, promote energy efficiency, and ensure electric system reliability. The CPUC has established rules for the planning and construction of new transmission facilities, distribution facilities, and substations. Utility companies are required to obtain permits to construct certain power line facilities or substations. The CPUC also has jurisdiction over the siting of natural gas transmission lines. The CPUC is involved with utilities through a variety of energy procurement programs, including the Renewable Portfolio Standard program.

California Strategy to Reduce Petroleum Dependence (AB 2076)

AB 2076 (Chapter 936, Statutes of 2000) requires the CEC and the Air Resources Board (ARB) to develop and submit to the Legislature a strategy to reduce petroleum dependence in California. The statute requires the strategy to include goals for reducing the rate of growth in the demand for petroleum fuels. In addition, the strategy is required to include recommendations to increase transportation energy efficiency as well as the use of nonpetroleum fuels and advanced transportation technologies including alternative fuel vehicles, hybrid vehicles, and high-fuel efficiency vehicles.

The strategy, Reducing California's Petroleum Dependence, was adopted by the CEC and ARB in 2003. The strategy recommends that California reduce on-road gasoline and diesel fuel demand to 15 percent below 2003 demand levels by 2020 and maintain that level for the foreseeable future; the Governor and Legislature work to establish national fuel economy standards that double the fuel efficiency of new cars, light trucks, and SUVs; and increase the use of nonpetroleum fuels to 20 percent of on-road fuel consumption by 2020 and 30 percent by 2030.

Alternative Fuels Plan Assembly Bill 1007

AB 1007 requires the CEC to prepare a state plan to increase the use of alternative fuels in California. The plan shall include an evaluation of alternative fuels for emissions or criteria air pollutants, air toxics, GHGs, water pollutants, and other harmful substances, and their impacts on petroleum consumption. The plan shall set goals for increased alternative fuel use in the state for the years 2012, 2017, and 2022 and recommend policies to ensure the alternative fuel goals are attained, including standards on transportation fuels and vehicle and policy mechanisms to ensure vehicles operating on alternative fuels use those fuels to the maximum extent feasible. The plan was adopted in December 2007.

Bio-energy Action Plan – Executive Order S-06-06

Executive Order S-06-06 establishes targets for the use and production of bio-fuels and bio-power and directs state agencies to work together to advance biomass programs in California while providing environmental protection and mitigation. The executive order establishes the following target to increase the production and use of bio-energy, including ethanol and biodiesel fuels made from renewable resources: produce a minimum of 20 percent of its bio-fuels within California by 2010, 40 percent by 2020, and 75 percent by 2050. The executive order also calls for the state to meet a target for use of biomass electricity.

Governor's Low Carbon Fuel Standard (Executive Order S-01-07)

Executive Order S-1-07 proclaims that the transportation sector is California's main source of GHG emissions, generating more than 40 percent of statewide emissions. It establishes a goal to reduce the carbon intensity of transportation fuels sold in California by at least ten percent by 2020. This order also directs CARB to determine whether this Low Carbon Fuel Standard (LCFS) can be adopted as a discrete early-action measure, as part of the effort to meet AB 32 mandates.

Renewable Energy: California Renewables Portfolio Standard Program

Established in 2002 under Senate Bill (SB) 1078, accelerated in 2006 under SB 107, expanded in 2011 under SB 2 and further expanded in 2015 under SB 350, California's Renewables Portfolios Standard (RPS) is one of the most ambitious renewable energy standards in the country. The RPS program requires investor-owned utilities, electric service providers, and community choice aggregators to increase procurement from eligible renewable energy resources to 33 percent of total procurement by 2020. On September 12, 2002, then-Governor Gray Davis signed SB 1078. SB 1078 (Chapter 516, Statutes of 2002) requires retail sellers of electricity, including investor-owned utilities and community choice aggregators, to provide at least 20 percent of their supply from renewable sources by 2017. SB 107 (Chapter 464, Statutes of 2006) changed the target date to 2010.

In November 2008, then-Governor Arnold Schwarzenegger signed Executive Order (EO) S-14-08, which expands the state's RPS to 33 percent renewable power by 2020. In September 2009, former Governor Schwarzenegger continued California's commitment to the RPS by signing EO S-21-09, which directs the California Air Resources Board (CARB) under its Assembly Bill (AB) 32 authority to enact regulations to help the state meet its RPS goal of 33 percent renewable energy by 2020.

The 33 percent by 2020 goal was codified in April 2011 with SB X1-2, which was signed by Governor Edmund G. Brown, Jr. This RPS preempts the CARB 33 percent Renewable Electricity Standard and

applies to all electricity retailers in the state, including publicly owned utilities, investor-owned utilities, electricity service providers, and community choice aggregators. These entities must adopt the new RPS goals of 20 percent of retail sales from renewables by the end of 2013 and 25 percent by the end of 2016, with the 33 percent requirement being met by the end of 2020.20

The Clean Energy and Pollution Reduction Act of 2015, SB 350 (Chapter 547, Statutes of 2015) was approved by Governor Brown on October 7, 2015. SB 350 does the following: (1) increases the standards of the California RPS program by requiring that the amount of electricity generated and sold to retail customers per year from eligible renewable energy resources be increased to 50 percent by December 31, 2030; (2) requires the State Energy Resources Conservation and Development Commission to establish annual targets for statewide energy efficiency savings and demand reduction that will achieve a cumulative doubling of statewide energy efficiency savings in electricity and natural gas final end uses of retail customers by January 1, 2030; (3) provides for the evolution of the Independent System Operator into a regional organization; and (4) requires the state to reimburse local agencies and school districts for certain costs mandated by the state through procedures established by statutory provisions. Among other objectives, the legislature intends to double the energy efficiency savings in electricity and natural gas final end uses of retail customers through energy efficiency and conservation (SB-350 Clean Energy and Pollution Reduction Act 2015).

Assembly Bills 2514 and 2868

In order to improve power grid reliability and greater integration of renewables into the energy system, California has enacted AB 2514 and AB 2868 to increase the energy storage infrastructure. Under AB 2514 (Chapter 469, Statutes of 2010), California's landmark energy storage law passed in 2010, California's three Investor-Owned Utilities ("IOUs") (Southern California Edison ("SCE"), Pacific Gas & Electric ("PG&E"), and San Diego Gas & Electric ("SDG&E")) are required to install 1,325 MW of energy storage by 2024. Additionally, AB 2868 (Chapter 681, Statutes of 2016), signed by California Governor Jerry Brown in 2016, requires PG&E, SCE, and SDG&E to propose programs and investments for up to 500 MW of distributed energy storage systems (defined as distribution-connected – i.e. connected to the energy distribution system, or behind-the-meter energy storage – i.e. local energy supply such as rooftop solar -- resources with a useful life of at least 10 years).

California Green Building Standards

20 At this time, California's top three POUs are well ahead of their respective RPS targets, with PG&E, SCE and SDG&E reporting RPS procurements for 2020 at 33%, 28% and 43%, respectively (www.cpuc.ca.gov/rps_homepage/, accessed December 7, 2017).

The California Green Building Standards Code (California Code of Regulations, Title 24, Part 11), commonly referred to as the CALGreen Code, is a statewide mandatory construction code that was developed and adopted by the California Building Standards Commission and the California Department of Housing and Community Development in 2008. The purpose of this code is to improve public health, safety and general welfare by enhancing the design and construction of buildings through the use of building concepts having a reduced negative impact or positive environmental impact and encouraging sustainable construction practices including recycling of construction (diversion of 50 percent) and other waste streams.

The 2008 Title 24 Standards were in place in 2012 when the Tulare CAP was adopted. The CAP states that development subject to CEQA review would need to achieve a 1.1 percent overall reduction beyond regulation and an average project reduction of 6 percent from all development-related emission sources to meet the CAP target. No specific amount was required for exceeding Title 24, but this measure was expected to be tracked to ensure adequate progress is achieved to meet the 2020 target. However, since the CAP was adopted, two new versions of Title 24 have been adopted that achieve energy savings well in excess of 2008 Title 24. Further, substantially less development has occurred than was anticipated in the CAP.

California Building Energy Efficiency Standards: Title 24.

California established statewide building energy standards following legislative action. The legislation required the standards to:

- Be cost effective;
- Be based on the building life cycle; and
- Include both prescriptive and performance-based approaches.

The standards have been periodically updated as technology and design have evolved. Generally, the standards are updated every three years. As a result of AB 970, passed in the fall of 2000 in response to the state's electricity crisis, an emergency update of the Standards went into effect in June 2001. The Commission then initiated an immediate follow-on proceeding to consider and adopt updated Standards that could not be completed during the emergency proceeding. The 2005 Building Energy Efficiency Standards were adopted in November 2003, took effect October 1, 2005. The Energy Commission adopted the latest Building Energy Efficiency Standards in May 2012.

Title 24 of the California Code of Regulations comprises the state Building Standards Code. Part 6 of Title 24 is the California Energy Code, which includes the building energy efficiency standards. The standards

include provisions applicable to all buildings, residential and non-residential, which describe requirements for documentation and certificates that the building meets the standards. These provisions include mandatory requirements for efficiency and design of the following types of systems, equipment, and appliances:

- Air conditioning systems
- Heat pumps
- Water chillers
- Gas- and oil-fired boilers
- Cooling equipment
- Water heaters and equipment
- Pool and spa heaters and equipment
- Gas-fired equipment including furnaces and stoves/ovens
- Windows and exterior doors
- Joints and other building structure openings (envelope)
- Insulation and cool roofs
- Lighting control devices

The standards include additional mandatory requirements for space conditioning (cooling and heating), water heating and indoor and outdoor lighting systems and equipment in non-residential, high-rise residential, and hotel or motel buildings.

California Solar Initiative

On January 12, 2006, the California Public Utilities Commission (CPUC) approved the California Solar Initiative (R.04- 03-017), which provided $2.9 billion in incentives between 2007 and 2017. Senate Bill 1 states three specific expectations to be met to qualify for the ratepayer-funded incentives made available through the bill:

- High-quality, solar energy systems with maximum system performance to promote the highest energy production per ratepayer dollar;
- Optimal system performance during periods of peak demand; and
- Appropriate energy efficiency improvements in new and existing homes, or in commercial structures where solar energy systems are installed.

Senate Bill 1 is an extensive, multi-faceted legislation that covers many other matters besides the eligibility criteria, conditions for incentives and rating standards.

California Assembly Bill No. 1493 (AB 1493, Pavley), (Chapter 200, Statutes of 2002)

In September 2002, AB 1493 (Chapter 200, Statutes of 2002) (referred to as Pavley I) was enacted, requiring the development and adoption of regulations to achieve "the maximum feasible reduction of greenhouse gases" emitted by noncommercial passenger vehicles, light-duty trucks, and other vehicles used primarily for personal transportation in the state by January 1, 2005. Pavley I took effect for model years starting in 2009 to 2016 and Pavley II, which is now referred to as "LEV (Low Emission Vehicle) III GHG" will cover 2017 to 2025 (13 Cal. Code Regs. Section 1900 *et seq.*). Fleet average emission standards were to reach a 22 percent reduction by 2012 and 30 percent by 2016. Refer to **Section 4.6, Greenhouse Gases**, for details regarding this regulation.

CARB's 2017 Update to Climate Change Scoping Plan (November 2017)

CARB's Climate Change Scoping Plan, which functions as a roadmap to achieve the California GHG reductions required by AB 32 and SB 32 through subsequently enacted regulations, is discussed in detail in **Section 4.6**, **Greenhouse Gases**. On December 14, 2017, CARB approved the final version of *California's 2017 Climate Change Scoping Plan* (2017 Scoping Plan Update), which outlines the proposed framework of action for achieving the SB 32 2030 GHG target of 40 percent reduction in GHG emissions relative to 1990 levels (CARB 2017a). See further discussion below. The 2017 Scoping Plan Update identifies key sectors of the implementation strategy, which includes improvements in low carbon energy, industry, transportation sustainability, natural and working lands, waste management, and water. Through a combination of data synthesis and modeling, CARB determined that the target Statewide 2030 emissions limit is 260 MMTCO2e, and that further commitments will need to be made to achieve an additional reduction of 50 MMTCO2e beyond current policies and programs. A cornerstone of the 2017 Scoping Plan Update is an expansion of the Cap-and-Trade program to meet the aggressive 2030 GHG emissions goal and ensure achievement of the 2050 limit set forth by E.O. S-30-15.

Local

Local Climate Action Plans

Three TCAG member jurisdictions have developed climate action plans (CAPs) that set goals and targets on the reduction of GHG emissions, along with policies to help achieve those goals. The cities of Tulare and Visalia, as well as Tulare County have conducted baseline emissions inventories, thereby establishing a reference point for GHG emissions reduction. Refer to **Section 4.6, Greenhouse Gases,** for details.

Tulare County General Plan

The County's 2030 General Plan Update includes a Transportation and Circulation Element, which itself includes goals and policies that promote alternative transportation systems (public transit, bicycle, and pedestrian) that would reduce energy use.

4.12.1.3 IMPACTS AND MITIGATION MEASURES

Thresholds of Significance

CEQA Appendix G does not address energy. CEQA Appendix F addresses energy but does not provide specific thresholds for energy use; it recommends consideration of the following environmental impacts to the extent relevant and applicable:

- The project's energy requirements and its energy use efficiencies by amount and fuel type for each stage of the Project including construction, operation, maintenance and/or removal. If appropriate, the energy intensiveness of materials may be discussed.
- The effects of the project on local and regional energy supplies and on requirements for additional capacity.
- The effects of the project on peak and base period demands for electricity and other forms of energy.
- The degree to which the project complies with existing energy standards.
- The effects of the project on energy resources.
- The project's projected transportation energy use requirements and its overall use of efficient transportation alternatives.

For the purposes of this PEIR, TCAG has determined that implementation of the proposed 2018 RTP/SCS could result in significant energy impacts, if the following would occur:

- Conflict with adopted energy conservation plans, or violate State or federal energy standards or cause wasteful, inefficient, and unnecessary consumption of energy during construction, operation, or maintenance.
- Result in an increase in demand for electricity or natural gas that exceeds available supply or distribution infrastructure capabilities that could result in the construction of new energy facilities or expansion of existing facilities, the construction of which could cause significant environmental effects.

Methodology

The 2018 RTP/SCS EIR is a Program EIR, not a project-level EIR. Use of Appendix F and the discussion of energy impacts in this document reflect the programmatic nature of the 2018 RTP/SCS EIR. In Appendix F, energy conservation is described in terms of decreased per capita energy consumption, decreased reliance on natural gas and oil, and increased reliance on renewable energy sources (*State CEQA Guidelines*, App. F, § I.) TCAG considered the guidance provided in Appendix F both in analyzing the program's energy impacts and in developing mitigation measures to further reduce its impacts. The significance thresholds for the 2018 RTP/SCS were formulated in consideration of these factors. For the purposes of this analysis, a significant impact would occur if the project involved inefficient, wasteful and unnecessary consumption of energy.

TCAG calculated energy use per household for the year 2042 (under each alternative) using Envision Tomorrow land use model.[21] The methodology includes energy consumption that would be due to the construction of 2018 RTP/SCS transportation projects as well as energy consumption (household electricity and natural gas consumption) resulting from residential growth (exclusive of transportation energy).

Energy consumption from transportation projects is categorized in terms of "direct" and "indirect" energy. Direct energy is the fuel that propels vehicles – it is consumed directly by the automobile, bus, or transit vehicle. Indirect energy is the energy needed to construct, operate, and maintain the roadway and rail system and manufacture and maintain the vehicles using the roadway system.[22] Indirect energy accounts for construction-related energy (e.g., the energy required to construct transportation improvements), which would be consumed through the life of the plan as several transportation improvement projects may be undertaken concurrently, and is therefore characterized as a long-term, operational energy use. Indirect energy also accounts for the maintenance of a roadway over the life of a project, which is also considered a long-term, operational energy use.

Direct Energy Consumption. Direct energy is that energy used in the daily operation of the transportation system, including the propulsion of passenger vehicles (automobiles, vans, and trucks) and transit vehicles, including buses and trains. The direct energy analysis of the 2018 RTP/SCS is based on 2020, 2035, and 2042 VMT (as analyzed in Section 4.11, *Transportation)*.

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21 Envision Tomorrow. Envision Tomorrow Online. Available online at: http://envisiontomorrow.org/, accessed April 1, 2018.

22 www.cpuc.ca.gov/rps_homepage/, accessed December 7, 2017

Indirect Energy Consumption. Indirect energy is the energy required to construct, operate, and maintain the transportation network, as well as to manufacture and maintain on-road vehicles and transit vehicles. Therefore, construction-related impacts associated with the 2018 RTP/SCS are indirect energy impacts.

Determination of Significance

The methodology for determining the significance of energy impacts compares existing conditions to the future energy consumption with the Plan. The criteria above were applied to compare current energy usage to future (2020, 2035 and 2042) Plan conditions.

Impact and Mitigation Measures

Impact ENERGY-1 **Conflict with adopted energy conservation plans, or violate State or federal energy standards or cause wasteful, inefficient, and unnecessary consumption of energy during construction, operation, or maintenance.**

Daily operation of the County's transportation system uses energy in the form of fuel consumed by propulsion of passenger vehicles (automobiles, vans, and trucks) and transit vehicles (buses and trains). Some highway and roadway improvements included in the 2018 RTP/SCS would increase vehicle capacity, allowing a greater number of vehicles to use County facilities. However, increasing capacity and improving roadways and intersections may result in an increase in motor vehicle trips, but increases in motor vehicle trips are also a function of population growth and employment growth. The 2018 RTP/SCS would help to reduce energy consumption by improving the overall efficiency of the transportation system. In addition, many 2018 RTP/SCS projects (e.g., bikeway and pedestrian projects, and transit projects), as well as the proposed land use pattern, would improve the availability of alternative transportation modes, reducing energy consumption.

Construction and maintenance of the proposed 2018 RTP/SCS projects (including construction and maintenance of roadways and rail lines) would result in short-term consumption of energy resulting from the use of construction equipment and processes. During construction activities, energy would be needed to operate construction equipment. In addition, roadway and transit construction materials, such as asphalt, concrete, surface treatments, steel, rail ballast, as well as building materials, require energy to be produced, and would likely be used in projects that involve new construction or replacement of older materials, as well as construction of future infill projects envisioned by the 2018 RTP/SCS. The California Green Building Standards Code (CALGreen Code) includes specific requirements related to recycling, construction materials, and energy efficiency standards, which would apply to construction of roadway and transit improvement projects, as well as future infill and TOD envisioned by the 2018 RTP/SCS and help to minimize waste and energy consumption. All construction and maintenance conducted pursuant

to the 2018 RTP/SCS, or as a result of improvements made by the 2018 RTP/SCS, would be required to comply with the CALGreen Code.

Table 4.12.1-2, Direct and Indirect Transportation Energy Use, shows the VMT and total per capita transportation energy use (BTUs) in the County under the No Project Alternative and Plan, in 2020, 2035 and 2042.

As shown in **Table 4.12.1-2**, total transportation energy use would decrease over time due to progressively more efficient vehicle engines which require fewer gallons of fuel for operation. The 2018 RTP/SCS would result in reduced direct and indirect energy use as compared to existing conditions and as compared to the No Project Alternative for the horizon year (2042). This means the Plan would not use energy in a wasteful or inefficient manner. In 2042, the 2018 RTP/SCS would decrease in total transportation energy usage overall, and energy usage would be less than the No Project Alternative. As described in the methodology, the comparison to the No Project Alternative (which would result in greater energy use) demonstrates that the Plan would result in greater energy efficiency than without the Plan.

Table 4.12.1-2
Direct and Indirect Transportation Energy Use

Scenario	Analysis Year	Region-Wide Daily VMT	Daily Regional Gasoline Consumption (Gallons)	Daily Regional Diesel Consumption (Gallons)	Yearly Energy Use per Capita (Million BTUs)
Existing Conditions	2017	10,547,370	437,356	183,753	58.3
No Project Alternative	2020	10,789,716	400,717	186,089	53.4
2018 RTP/SCS	2020	10,716,374	398,007	184,824	53.1
No Project Alternative	2035	12,159,989	276,226	178,569	36.1
2018 RTP/SCS	2035	12,085,473	274,972	177,482	36.0
No Project Alternative	2042	12,758,055	272,996	181,712	34.0
2018 RTP/SCS	2042	12,699,425	272,672	180,890	33.9

Source: TCAG Model, EMFAC14, 2018

For the purposes of this analysis, a significant impact would occur if the project involved inefficient, wasteful, and unnecessary consumption of energy. As discussed above, the 2018 RTP/SCS would result in a decrease in total transportation energy usage when compared to existing conditions and future conditions without the 2018 RTP/SCS. As described in the *Methodology* section, direct energy usage is energy used in the daily operation of the transportation system (e.g., consumption of fuel). The transportation improvements proposed under the 2018 RTP/SCS would result in a more efficient transportation system. The 2018 RTP/SCS would result in greater availability of public transit and other alternative modes of transportation, as well as reduced trip lengths as a result of the mixed-use and infill in existing commercial corridors envisioned by the 2018 RTP/SCS. In addition, improvements to state fuel efficiency standards for vehicles and state mandated increases in the supply and use of alternative transportation fuels would further reduce fuel consumption Therefore, the 2018 RTP/SCS transportation improvements would not result in inefficient, unnecessary, or wasteful consumption of gasoline or diesel fuel.

The 2018 RTP/SCS envisions a regional land use pattern that promotes mixed-use and infill development in existing commercial corridors in combination with high-quality transit service (e.g., improved bus

service headways during the peak period, Bus Rapid Transit [BRT], Vanpools, fleet improvements, and improved bicycle and pedestrian infrastructure. Mixed-use and infill projects are intended to reduce VMT and energy use because they would locate people closer to existing goods and services, thereby resulting in shorter vehicle trips and/or promoting walking or biking, and they would locate people closer to existing transportation hubs, thereby encouraging the use of alternative modes of transit (e.g., buses) and resulting in fewer vehicle trips. Operation of future development under the 2018 RTP/SCS would increase overall demand for energy beyond existing demand; however, such development would not require unusual, unnecessary, or wasteful amounts of energy. Future development would be constructed using standard building practices. These projects would also be subject to the CALGreen Code and Title 24 of the California Energy Code, which set forth specific energy efficiency requirements related to design, construction methods and materials.

Indirect energy is the energy required to construct, operate, and maintain the transportation network. Indirect energy reductions under the 2018 RTP/SCS occur as a result of reduced per capita VMT under the 2018 RTP/SCS.[23] As vehicles drive shorter distances, less wear and tear occurs on roadways, thereby requiring less maintenance and associated energy consumption. The transportation energy use totals shown in **Table 4.12.1-2, Direct and Indirect Transportation Energy Use,** account for construction and maintenance of roadways. Transportation projects implemented under the 2018 RTP/SCS would result in indirect energy use due to construction of planned and programmed projects. However, overall energy use in the future would be more efficient as a result of a combination of factors mentioned above (i.e., fleet improvements, CalGreen, etc.), the land use pattern and improvements to the transportation network included in the RTP/SCS would also contribute to more efficient energy use.

New transportation facilities that require energy for operation, such as signal lighting, roadway or parking lot lighting, and electronic equipment would increase energy demand. New landscaping irrigation also increases energy demand through water pumping and treatment. However, energy consumption would not be unnecessary or wasteful, as all lighting, signage, and irrigation systems would comply with applicable energy efficiency requirements of the California Building Code.

Total energy use (both direct and indirect) is displayed in **Table 4.12.1-3, Residential Energy (Electricity and Natural Gas) Use in BTU Per Year**. This includes both direct and indirect transportation energy use and land use energy use.

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23 Although total VMT increases in the region as a result of population increases, VMT per capita decreases with the Plan.

Table 4.12.1-3
Residential Energy (Electricity and Natural Gas) Use in BTU Per Year

Scenario	Analysis Year	Energy Use Per Household	Total Energy Use
Existing Conditions	2017	204.8[1]	30,494, 310.4
No Project Alternative	2020	177.4	27,239,993.2
2018 RTP/SCS	2020	177.4	27,239,993.2
No Project Alternative	2035	166.3	29,253,663
2018 RTP/SCS	2035	157.3	27,670,482.2
No Project Alternative	2042	158.9	29,608,314
2018 RTP/SCS	2042	148.3	27,633,184

Note:
1990, 2005 and 2017 data from http://www.ecdms.energy.ca.gov/gasbycounty.aspx and
Source: http://www.ecdms.energy.ca.gov/elecbycounty.aspx . Accessed April 2018.
2020, 2035, 2042 data: TCAG Model, EMFAC14, 2018

Energy use per household is approximately 158.9 million BTU in the year 2042 in the No Project Alternative, and 148.3 million BTU in the year 2042 under the 2018 RTP/SCS. Each of these values is less than existing conditions. This is a decrease of approximately seven percent between the 2018 RTP/SCS and the No Project Alternative, and approximately 27 percent decrease from existing conditions. As shown in the table, total energy use also decreases in 2042 under the Plan compared to existing conditions. Therefore, the 2018 RTP/SCS would not result in inefficient, unnecessary, or wasteful consumption of energy.

Conflict with Adopted Energy Conservation Plans, or Violate State or Federal Energy Standards

As discussed above, the 2018 RTP/SCS would result in fewer long-term VMT (and thus less energy consumption) when compared with the No Project Alternative, and therefore would result in an overall energy savings. Accordingly, the 2018 RTP/SCS would not conflict with adopted energy conservation plans, or violate State or federal energy standards. .

TCAG monitors regulations related to fuel efficiency standards and alternative fuel vehicles. The 2018 RTP/SCS would not conflict with such regulations (e.g., *Energy Policy and Conservation Act* and *CAFE Standards*, *EPAct*, *Energy Independence and Security Act of 2007*, *AB 1493: Reduction of Greenhouse Gas*

Emissions, *AB 1007: State Alternative Fuels Plan*). *AB 2076: Reducing Dependence on Petroleum* addresses alternative fuels and motor vehicle efficiency as well, but also addresses reducing VMT). Thus, the proposed 2018 RTP/SCS is consistent with California Assembly Bill 2076.

The 1975 *Warren-Alquist Act* established the California Energy Resource Conservation and Development Commission, now known as the California Energy Commission (CEC), and established a State policy to reduce wasteful, uneconomical, and unnecessary uses of energy. Based on the data above, the 2018 RTP/SCS would not result in wasteful, inefficient, or unnecessary usage of energy. Therefore the 2018 RTP/SCS is consistent with the *Warren-Alquist Act*.

SB 1078 as accelerated by Executive Order S014-08, establishes a renewable portfolio standard for electricity supply, and requires that retail sellers of electricity, including investor-owned utilities and community choice aggregators, provide 33% of their supply from renewable sources by 2020. The proposed 2018 RTP/SCS would not conflict with this policy. Refer to Section 4.6, *Greenhouse Gas Emissions*, for a discussion of GHG emissions reductions related to the proposed 2018 RTP/SCS.

Locally, the proposed 2018 RTP/SCS would be consistent with the County's Climate Action Plan and the CAPs for Tulare and Visalia including overall transportation energy conservation goals. These goals encourage reductions in the growth of VMT and support of alternative transportation and fuels. The proposed 2018 RTP/SCS includes numerous alternative transportation projects, including CNG fueled buses that would reduce fuel consumption, as well as a land use pattern intended to reduce VMT throughout the region. A review of the Plan's consistency with local CAPs is provided in **Table 4.6-8, Local Climate Action Plan Consistency Analysis**, in **Section 4.6, Greenhouse Gas Emissions**.

The proposed 2018 RTP/SCS would also be consistent with the 2030 Tulare County General Plan Transportation & Circulation Element's overall transportation goals and policies. These goals and policies encourage the provision of a safe, comprehensive, and coordinated transportation system that includes a broad range of transportation modes. Refer to **Section 4.6, Greenhouse Gas Emissions** for a discussion of 2018 RTP/SCS consistency with existing plans.

As shown in **Table 4.12-3**, energy use per household would decrease compared to existing conditions. As discussed above, the 2018 RTP/SCS would also result in lower per capita VMT and fuel consumption (gasoline and diesel) as compared to existing conditions, and a decrease in residential energy usage in 2042. The 2018 RTP/SCS would not result in wasteful or inefficient energy consumption within the region, and is generally consistent with applicable policies regarding energy conservation. Therefore, the 2018 RTP/SCS would not conflict with adopted energy conservation plans, or violate State or federal energy standards, and impacts related to such conflicts would be less than significant.

Level of Significance Before Mitigation

Less than Significant.

Mitigation Measures

None required.

Level of Significance After Mitigation

Impacts from conflicts with adopted energy conservation plans and standards or wasteful, inefficient, and unnecessary consumption of energy would be less than significant.

Impact ENERGY-2 **Result in an increase in demand for electricity or natural gas that exceeds available supply or distribution infrastructure capabilities that could result in the construction of new energy facilities or expansion of existing facilities, the construction of which could cause significant environmental effects.**

While residential energy use is anticipated to decrease by 2042, the population growth and transportation improvements included in the 2018 RTP/SCS could result in an overall increase in electricity and natural gas demand due to other sources in the region (i.e., agriculture and commercial uses). Even if total energy consumption does not increase, energy suppliers are anticipated to construct additional facilities to respond to requirements for increased use of alternate energy sources. As a result, new facilities could be required to produce and deliver energy to the County. Expansion of existing facilities and construction of new facilities to generate electricity may be required. In addition, construction of new transmission lines and substations may be necessary. New energy generation facilities could include renewable and nonrenewable electricity production and depending on the type of facility, size, and location would result in different impacts. As described in the setting, the County has increased solar in terms of additional permits for solar facilities and as a requirement on individual subdivisions. Construction of the facilities could have a variety of short-term and long-term impacts including aesthetics, air quality, biological resources, GHG emissions, hazards and hazardous materials, and hydrology and water quality, noise, and transportation. Operation of the facilities may also result in transportation, noise, and air quality impacts.

The additional demand for natural gas may also require new supply and construction of conveyance and distribution infrastructure. The short-term impacts from construction of conveyance and distribution facilities for natural gas would be similar to construction of the electricity generation and transmission facilities described above. In addition, the operation of the facilities would have similar impacts described

above. Therefore, implementation of the 2018 RTP/SCS would result in significant impacts related to construction of new facilities, transmission, and distribution of energy. Mitigation is required. **Mitigation Measure MM-EN-1** would reduce energy consumption.

Level of Significance Before Mitigation

Significant.

Mitigation Measures

Implement **MM-GHG-1(a)** through **MM-GHG-1(c)** and **MM-AIR-1(a)**.

MM-EN-1(a): Consistent with the provisions of Section 15091 of the *State CEQA Guidelines*, TCAG has identified mitigation measures capable of avoiding or reducing the significant effects of increased energy consumption that are in the jurisdiction and responsibility of local agencies (land use projects). Where the Lead Agency has identified that a project has the potential for significant effects, the Lead Agency can and should consider mitigation measures to reduce energy usage, ensuring compliance with CALGreen, local building codes, and other applicable laws and regulations governing residential building standards, as applicable and feasible. Such measures include but are not limited to the following:

- Integrate green building measures consistent with CALGreen (California Building Code Title 24) into project design including:
- Use energy efficient materials in building design, construction, rehabilitation, and retrofit.
- Install energy-efficient lighting, heating, and cooling systems (cogeneration); water heaters; appliances; equipment; and control systems.
- Reduce lighting, heating, and cooling needs by taking advantage of light colored roofs, trees for shade, and sunlight.
- Incorporate passive environmental control systems that account for the characteristics of the natural environment.
- Use high-efficiency lighting and cooking devices.
- Incorporate passive solar design.
- Use high-reflectivity building materials and multiple glazing.
- Prohibit gas-powered landscape maintenance equipment.

- Install electric vehicle charging stations.
- Reduce wood burning stoves or fireplaces.
- Provide bike lanes accessibility and parking at residential developments.

Level of Significance After Mitigation

Mitigation Measure MM EN-1(a) would reduce impacts related to the need for expanded or new energy facilities. However, because this PEIR evaluates impacts at the programmatic level, all project circumstances are not foreseeable and these mitigation measures may not be feasible or effective for some projects. Therefore, this impact is considered significant and unavoidable after mitigation. No additional feasible mitigation measures are available to reduce significant and unavoidable impacts beyond those identified in this PEIR.

4.12.1.4 CUMULATIVE EFFECTS

The project's less than significant impacts on consistency with adopted plans and wasteful use of energy would not result in a cumulatively considerable contribution to such impacts as a result of growth in surrounding areas (as a result of growth in accordance with RTP/SCS plans of these jurisdictions).

Total energy demand could occur as population increases in Tulare County which could contribute cumulatively to statewide as well as worldwide increases in energy consumption. However, per capita use of energy is going down and commercial and industrial uses are becoming more efficient and therefore total energy may not increase. However, demand for renewable sources of energy is anticipated to increase substantially and associated demand for equipment (such as solar panels) and infrastructure is also anticipated to increase. The Plan's significant impacts on energy sources and infrastructure would add to similar impacts as a result of growth in surrounding jurisdictions. Therefore, cumulative impacts related to energy facilities would be significant, and the Plan's contribution to this impact would be cumulatively considerable.

4.12.2 Wastewater

4.12.2.1 ENVIRONMENTAL SETTING

Tulare County

Wastewater-related services and facilities are provided primarily by local agencies within unincorporated Tulare County, with small treatment plants scattered throughout the County (see **Table 4.12-2-1, Wastewater Flows and Capacity of Treatment Facilities in the TCAG Region,** below).

Table 4.12.2-1
Wastewater Flows and Capacity of Treatment Facilities in the TCAG Region

Wastewater Service Provider	Current Average Daily Flow (mgd)	Permitted Capacity (mgd)
Culter PUD	0.420	1,255 ESDs
Earlimart PUD	0.800	0.800
East Orosi CSD	0.053	0.060
Goshen CSD	0.315	0.500
Ivanhoe PUD	0.360	0.560
Lemon Cove SD	0.012	0.020
London CSD	0.200	0.300
Orosi PUD	0.770	2,612 ESDs
Pixley PUD	0.298	0.290
Poplar CSD	0.220	0.310
Richgrove CSD	0.250	0.220
Springville PUD	0.056	0.060
Strathmore PUD	0.150	0.400
Sultana CSD	0.064	N/A
Terra Bella SMD	0.280	0.300
Tipton CSD	0.190	0.400
Woodville PUD	0.120	0.330
CSA #1 – Delft Colony	0.048	0.057
CSA #1 – El Rancho	0.012	N/A
CSA #1 – Seville	0.048	0.050
CSA #1 - Tonyville	0.032	N/A
CSA #1 – Tooleville	0.024	0.035
CSA #1 – Traver	0.067	0.089
CSA #2 – Wells Tract	0.030	N/A
CSA #1 - Yettem	0.030	N/A

Notes: ESD = Equivalent Single Family Dwelling, CSA = County Service Area, CSD = County Sanitation District, JPWA = Joint Powers Wastewater Authority, PUD = Public Utility District, SMD = Sewer Maintenance District
N/A = information not available
Source: Tulare County General Plan 2030 Update Recirculated Draft EIR, February 2010

City of Visalia Wastewater Treatment Plant

The Visalia Wastewater Treatment Plant has an overall capacity of 22 million gallons per day (MGD) with a permitted capacity of 20 MGD.[24] It was renovated in 2014 in order to increase capacity and modernize infrastructure. The facility includes a method to capture methane gas that is then used to power a generator, saving the City money on electrical costs. In addition, more than 2.5 miles of underground pipe were laid so that the treated water from the plant is delivered to the Valley Oaks Golf Course and Plaza park for irrigation, thereby saving City water.

City of Tulare Wastewater Treatment Plant

The Tulare Wastewater Treatment Plant (WWTP) provides wastewater treatment for the Tulare area and is operated by the Tulare Wastewater Treatment Plant Division. It consists of both a domestic plant and an industrial plant. The domestic plant has a capacity of 6 million gallons per day (MGD), while the industrial plant has a capacity of 12 MGD. Currently these two plants treat 3.5 MGD and 8.5 MGD respectively.[25] The plant also has 320 acres of storage ponds, 2,200 acres of farmland for beneficial reuse of treated wastewater, and renewable energy generation including an anaerobic bulk volume fermenter, fuel cells, solar photovoltaic panels.

4.12.2.2 REGULATORY FRAMEWORK

Federal

Clean Water Act/National Pollutant Discharge Elimination System Permits

The Clean Water Act (CWA) (33 USC Sections 1251 *et seq*.) was enacted by Congress in 1972 and has been amended several times since its adoption. It is the primary federal law regulating water quality in the U.S. Its objective is to reduce or eliminate water pollution in the nation's rivers, streams, lakes, and coastal waters. The CWA prescribes the basic federal laws for regulating discharges of pollutants and sets minimum water quality standards for all surface waters in the U.S. The CWA is administered by the U.S. Environmental Protection Agency (USEPA).

In California, the State Water Resources Control Board (State Water Board) and the nine Regional Water Quality Control Boards (Regional Water Boards) implement many of the Clean Water Act's provisions. The Clean Water Act requires the State to adopt water quality standards and to submit those standards for approval by the U.S. Environmental Protection Agency (US EPA). For point source discharges to

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24 City of Visalia. Water Conservation Plant Upgrades Project EIR. 2011.

25 City of Tulare Public Works Department http://www.tulare.ca.gov/departments/public-works/wastewater

surface water, the Clean Water Act authorizes the U.S.EPA and/or approved states (such as California) to administer the National Pollutant Discharge Elimination System (NPDES) program. The NPDES program regulates the discharge of pollutants from point sources. Municipal point sources consist primarily of municipal wastewater treatment plant outfalls and stormwater conveyance system outfalls. The Clean Water Act also establishes a loan program - the State Revolving Fund - for the implementation of water quality improvement projects.

State Regulations

Porter-Cologne Water Quality Control Act

The Porter-Cologne Act is the principal law governing water quality regulation in California. It establishes a comprehensive program to protect water quality and the beneficial uses of water. The Porter-Cologne Act applies to surface waters, wetlands, and ground water and to both point and nonpoint sources of pollution. Pursuant to the Porter-Cologne Act (California Water Code section 13000 *et seq*.), the policy of the State is as follows:

- That the quality of all the waters of the State shall be protected;
- That all activities and factors affecting the quality of water shall be regulated to attain the highest water quality within reason; and
- That the State must be prepared to exercise its full power and jurisdiction to protect the quality of water in the State from degradation.

The Porter-Cologne Act established nine Regional Water Boards (based on hydrogeologic barriers) and the State Water Board, which are charged with implementing its provisions and which have primary responsibility for protecting water quality in California. The State Water Board provides program guidance and oversight, allocates funds, and reviews Regional Water Boards decisions. In addition, the State Water Board allocates rights to the use of surface water. The Regional Water Boards have primary responsibility for individual permitting, inspection, and enforcement actions within each of nine hydrologic regions. The State Water Board and Regional Water Boards have numerous NPS-related responsibilities, including monitoring and assessment, planning, financial assistance, and management.

The Regional Water Boards regulate discharges under the Porter-Cologne Act primarily through issuance of NPDES permits and waste discharge requirements (WDRs for point and nonpoint source discharges. Anyone discharging or proposing to discharge materials that could affect water quality (other than to a community sanitary sewer system regulated by an NPDES permit) must file a report of waste discharge.

The Porter-Cologne Act also implements many provisions of the Clean Water Act, such as NPDES permitting program. Section 401 of the Clean Water Act gives the State Water Board the authority to review any proposed federally permitted or federally licensed activity that may impact water quality and to certify, condition, or deny the activity if it does not comply with State water quality standards.

The Porter-Cologne Act also requires adoption of water quality control plans (Basin plans) that contain the guiding policies of water pollution management in California. A number of statewide water quality control plans have been adopted by the State Water Board. In addition, regional water quality control plans (basin plans) have been adopted by each of the Regional Water Boards and get updated as necessary and practical. These plans identify the existing and potential beneficial uses of waters of the State and establish water quality objectives to protect these uses. The basin plans also contain implementation, surveillance, and monitoring plans. Statewide and regional water quality control plans include enforceable prohibitions against certain types of discharges, including those that may pertain to nonpoint sources. Portions of water quality control plans, the water quality objectives and beneficial use designations, are subject to review by U.S.EPA, when approved they become water quality standards under the Clean Water Act.

Local

Utility Master Plans & Utility Capital Improvement Programs

Jurisdictions usually have utility master plans or other planning documents that identify and prioritize projects needed to maintain adequate levels of utility service in the jurisdiction**.**

General Plans

Local policies related to utilities and service systems are established in each jurisdiction's general plan. In general, jurisdictions have policies in place that state that utility and service systems must be provided at the same time (or in advance of) need. In addition to these general policies, jurisdictions may have more specific policies tailored to performance objectives including wastewater treatment services.

Tulare County General Plan

The Tulare County General Plan includes the following policies related to wastewater:

- **PFS-3.1 Private Sewage Disposal Standards:** The County shall maintain adequate standards for private sewage disposal systems (e.g., septic tanks) to protect water quality and public health.

- **PFS-3.2 Adequate Capacity:** The County shall require development proposals to ensure the intensity and timing of growth is consistent with the availability of adequate wastewater treatment and disposal capacity.

- **PFS 3.3 New Development Requirements:** The County shall require all new development, within UDBs, UABs, Community Plans, Hamlet Plans, Planned Communities, Corridor Areas, Area Plans, existing wastewater district service areas, or zones of benefit, to connect to the wastewater system, where such systems exist. The County may grant exceptions in extraordinary circumstances, but in these cases, the new development shall be required to connect to the wastewater system when service becomes readily available.

- **PFS-3.4 Alternative Rural Wastewater Systems:** The County shall consider alternative rural wastewater systems for areas outside of community UDBs and HDBs that do not have current systems or system capacity. For individual users, such systems include elevated leach fields, sand filtration systems, evapotranspiration beds, osmosis units, and holding tanks. For larger generators or groups of users, alternative systems, including communal septic tank/leach field systems, package treatment plants, lagoon systems, and land treatment, can be considered.

- **PSF-3.5 Wastewater System Failures:** The County shall require landowners to repair failing septic tanks, leach field, and package systems that constitute a threat to water quality and public health or connect to an existing community system through applicable County and/or Regional Water Quality Control Board standards and requirements.

- **PFS-3.6 Care of Individual Systems:** The County shall promote and support programs to educate homeowners on the care and maintenance of private sewage disposal systems.

- **PFS-3.7 Financing:** The County shall cooperate with special districts when applying for State and federal funding for major wastewater related expansions/upgrades when such plans promote the efficient solution to wastewater treatment needs for the area and County.

City of Visalia General Plan

- **PSCU-O-14**. Provide for long-range community water needs by adopting best management practices for water use, conservation, groundwater recharge and wastewater and stormwater management.

- **PSCU-O-16.** Ensure that adequate wastewater collection, treatment, recycling and disposal facilities are provided in a timely fashion to serve existing and future needs.

- **PSCU-P-53.** Continue to develop and expand the City's water recycling capacity to produce water suitable for landscape and crop irrigation and trade with agricultural water users in exchange for water for groundwater recharge. Promote the development of a purple-pipe recycled water distribution system.

- **PSCU-P-56.** Update the Water Conservation Plant Master Plan, Sewer System Master Plan, and any other specific Master Plans related to infrastructure development to ensure that existing levels of service can be maintained for proposed land uses and development densities.

- **PSCU-P-57.** Coordinate urban growth management planning with public and private utilities. Develop and carry out an infrastructure and public services assessment during annexation reviews to determine infrastructure needs, feasibility, timing, and financing.

4.12.2.3 ENVIRONMENTAL IMPACTS

Thresholds of Significance

For the purposes of this EIR, TCAG has determined that implementation of the proposed 2018 RTP/SCS would result in significant impacts to wastewater facilities if any of the following would occur (these thresholds are based on Appendix G and clarified for how they apply to the RTP/SCS):

- Exceed wastewater treatment requirements of the Central Valley Regional Water Quality Control Board.

- Require or result in the construction of new wastewater treatment facilities, the construction of which could cause significant environmental effects

- Result in a determination by the wastewater treatment provider which serves or may serve the project that is has inadequate capacity to serve the project's projected demand in addition to the provider's existing commitments.

Methodology

Impacts are evaluated according to the above thresholds of significance by using information on existing wastewater systems infrastructure in Tulare County. The methodology for determining the significance of these impacts applies the significance criteria to the future (2042) demand for wastewater facilities and compares future demand under the 2018 RTP/SCS to t existing capacities.

Both short-term construction-related impacts and long-term impacts resulting from implementation of the 2018 RTP/SCS are discussed below at a regional scale. Project specific impacts may vary from the regional scale evaluation presented herein and project-specific mitigation measures would be developed on a project-by-project basis.

Determination of Significance

The determination of significance for wastewater impacts compares the existing capacity of wastewater systems to the future demand under the 2018 RTP/SCS.

Impacts and Mitigation Measures

Impact WW-1 **Exceed wastewater treatment requirements of the Central Valley Regional Water Quality Control Board.**

Impact WW-2 **Require or result in the construction of new wastewater treatment facilities, the construction of which could cause significant environmental effects**

Impact WW-3 **Result in a determination by the wastewater treatment provider which serves or may serve the project that is has inadequate capacity to serve the project's projected demand in addition to the provider's existing commitments.**

All wastewater generated by growth under the 2018 RTP/SCS would be required to be treated according to requirements of the applicable NPDES permits and Waste Discharge Requirements. Implementation of the 2018 RTP/SCS would not exceed applicable wastewater treatment requirements. Therefore, impacts related to wastewater treatment requirements (**Impact WW-1**) would be less than significant.

Wastewater generation is closely tied to population and economic growth. The total population of Tulare County is projected to grow by approximately 133,127 persons or 28 percent from 2017 to 2042, thus wastewater generation could increase by up to 28 percent; however, water conservation is likely to reduce wastewater generation in the future. However, there is currently insufficient information to precisely determine future reductions in water use and therefore future wastewater generation.

There may not be sufficient capacity within one or more existing wastewater systems to serve project growth. Provision of adequate wastewater system capacity in urban areas of Tulare County is largely the responsibility of public agencies. These agencies must not only maintain their systems and facilities to serve existing users, but must also expand as needed to accommodate projected growth within each service area. It is not always possible or desirable to provide adequate capacity and facilities fifteen or twenty years in advance of growth due to funding limitations, permitting requirements, environmental entitlements and other considerations. As a result, individual wastewater service providers may determine they have inadequate capacity to serve projected demands, and additional wastewater facilities may need to be constructed to accommodate the projected growth. Many wastewater service providers are unable to provide additional capacity for future growth until such time that developments are proposed and can assist financially to upgrade the infrastructure (often through some type of reimbursement agreement with the respective service provider).

The City of Visalia has identified sufficient capacity to serve its projected General Plan population.[26] However, as noted in Section 4.7 Land Use and Planning, the horizon year of the 2018 RTP/SCS extends beyond the General Plan timeframe for many jurisdictions including Visalia. Additionally, according to current and past trends, water limitations, water conservation practices and compliance with best management practices (i.e., low flow toilets and automatic sinks) are likely to reduce per capita and per household wastewater flows in the future. Nonetheless, construction of some new wastewater system infrastructure would be necessary to meet future wastewater treatment demand caused by development under the 2018 RTP/SCS.

In less developed areas of the region, new housing and employment developments would require additional wastewater system infrastructure. The higher density development proposed as part of the 2018 RTP/SCS could also require construction of wastewater system infrastructure with greater conveyance capacity in the urban areas of Tulare County, which could result in physical impacts associated with construction. Therefore, impacts associated with construction of new wastewater system facilities would be significant.

Level of Significance Before Mitigation

Impact WW-1 less than significant. Impact WW-2 and Impact WW-3 significant.

Mitigation Measures

Mitigation Measure **MM-W-9(a)** identified to reduce water consumption would also reduce wastewater flows.

MM-WW-1(a): Consistent with the provisions of Section 15091 of the *State CEQA Guidelines*, TCAG has identified mitigation measures capable of avoiding or reducing the significant impacts on wastewater system capacity that are in the jurisdiction and responsibility of local agencies (land use projects) Where the Lead Agency has identified that a project has the potential for significant effects, the Lead Agency can and should consider mitigation measures to provide adequate wastewater system capacity. Such measures include but are not limited to the following:

- Work with wastewater service providers to assure that wastewater system capacity is available to serve projected demand.

26 City of Visalia. 2014. Visalia General Plan Draft Environmental Impact Report.

- Work with wastewater service providers implement mitigation measures to avoid or reduce significant environmental impacts associated with the construction of new or expanded wastewater facilities.

Level of Significance After Mitigation

Because this PEIR evaluates impacts at the programmatic level, all project circumstances are not foreseeable and **Mitigations Measures MM-W-9(a)** and **MM-WW-1(a)** may not be sufficient mitigation to reduce the need to construct new wastewater facilities. Therefore, **Impact WW-2** and **Impact WW-3** remain significant and unavoidable after mitigation. No additional feasible mitigation measures are available to reduce significant and unavoidable impacts beyond those identified in this PEIR. **Impact WW-1** would be less than significant.

4.12.2.4 CUMULATIVE EFFECTS

The Plan focuses growth in urban areas, particularly adjacent to transit. However, the 2018 RTP/SCS also includes new development in areas outside the urban cores; however, it is unlikely that this development would result in impacts that overlap with impacts from development outside the region. Wastewater treatment infrastructure that would be impacted by the 2018 RTP/SCS is contained within Tulare County, although the 2018 RTP/SCS could encourage growth in surrounding jurisdictions which could lead to impacts on wastewater systems outside Tulare County which could add to impacts from growth from RTP/SCSs in surrounding jurisdictions. Cumulative wastewater facilities impacts would be significant, and the 2018 RTP/SCS contribution would be cumulatively considerable. Mitigation measures would reduce impacts but not to a less than cumulatively considerable.

4.12.3 Solid Waste

4.12.3.1 ENVIRONMENTAL SETTING

Existing Conditions

In 2016, Tulare County residents produced a total of 397,582 tons of solid waste, an increase of 144,727 tons compared to solid waste generated in 2006.[27] Compared to the state's total waste of 34,756,114 tons, the County was responsible for approximately 1 percent of the state's total solid waste tonnage.[28]

Solid Waste Collection

The majority of people in Tulare County have curbside trash collection. Local waste haulers are contracted, under a franchise system, to provide this service to residents living within the County. The incorporated cities negotiate their own hauling contracts to provide trash collection. There are remote areas of the County where collection service is provided through bin sites and transfer stations.

Tulare County Solid Waste Management Department

Tulare County Solid Waste Management Department operates two landfills and six transfer stations. Each site allows for different types of waste disposal depending on its location. In addition, each disposal site maintains various waste disposal fees for residential and commercial refuse.

Landfills

The county landfills accept approximately 300,000 tons of waste per year, which is equivalent to about 5 pounds per person per day or approximately one ton per county resident per year. The County currently operates two landfills: the Visalia Disposal Site, northwest of Visalia, southeast of Tulare; and the Teapot Dome Disposal Site, southwest of Porterville. The Woodville Disposal site closed in 2014.[29] The current permits for the sites are summarized in **Table 4.12.3-1, Active Solid Waste Landfills in Tulare County**.

The County is currently in the process of reviewing the solid waste system to upgrade its disposal sites. It is seeking to expand both the capacity and lifespans of the sites to ensure that waste from the County continues to be disposed locally.

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27 Cal Recycle. Landfill Tonnage Reports, http://www.calrecycle.ca.gov/SWFacilities/Landfills/tonnages/ (2017).

28 Cal Recycle. ibid.

29 Tulare County. 2018. Landfill Locations and Fees. Available online at: http://tularecounty.ca.gov/rma/index.cfm/about-us/services/landfill-locations-and-fees/, accessed April 24, 2018.

Table 4.12.3-1
Active Solid Waste Landfills in Tulare County

Landfill	Location	Projected Closure Date	Max. Daily Disposal (tons/day)	Max. Capacity (cubic yards)	Remaining Capacity (cubic yards)
Visalia Landfill	8614 Avenue 328 Visalia, CA 93291	01/01/2024	2,000	18,630,666	14,815,501
Teapot Dome Landfill	211063 Avenue 128 Porterville, CA 93257	12/31/2022	800	8,320,307	712,861

Source: Cal Recycle Facility/Site Summary Details, http://www.calrecycle.ca.gov/SWFacilities/Directory/Search.aspx. 2017.

Transfer Stations

Similar to the landfills, transfer stations accept trash for disposal. There are six county operated transfer stations. These stations accept waste of various types including general refuse and wood and green waste depending on size with flat and volume rates applying. These facilities collect material that is then "transferred" to be recycled or to the nearest landfill site. While not as all-inclusive as a landfill, transfer stations provide a broad collection opportunity for local residents.[30]

Table 4.12.3-2, Active Transfer Stations in Tulare County, provides information on active transfer stations in the County.

Waste Diversion and Recycling

The California Integrated Waste Management Act of 1989 (Chapter 1095, Statutes of 1989) requires every city and county, as part of the Countywide Integrated Waste management plan, to prepare a Source Reduction and Recycling Element that identifies how each jurisdiction would meet the mandatory state waste diversion goals of 50 percent of all solid waste through source reduction, recycling, and composting activities. CalRecycle produces a yearly Diversion/Disposal Progress Report for each county and the applicable jurisdictions. As of 2018, the jurisdictions of Dinuba, Exeter, Farmersville, Lindsay, Porterville, Tulare, Tulare-Unincorporated, Visalia, and Woodlake had submitted their annual reports and are awaiting approval.[31]

30 Tulare County. 2018. Transfer Station Locations and Fees. Available online at: http://tularecounty.ca.gov/rma/index.cfm/about-us/services/solid-waste/disposal-in-mountain-communities/transfer-station-locations-and-fees/, accessed April 24, 2018.

31 Cal Recycle, Countywide Jurisdiction Diversion/Disposal Progress Report, http://www.calrecycle.ca.gov/lgcentral/Reports/jurisdiction/diversiondisposal.aspx, (2018).

Table 4.12.3-2
Active Transfer Stations in Tulare County

Transfer Station	Location	Max. Permitted Throughput	Permitted Capacity
Badger Transfer Station	Road 260 at Avenue 468 Badger, CA 93286	10 tons/day	15 tons/day
Balance Rock Transfer Station	44311 Sugarloaf Drive / Balance Rock LF California Hot Springs, CA 93207	52 cubic yards	N/A
Camp Nelson Transfer Station	0.25 mi North of Camp Nelson	13 tons/day	15 tons/day
Kennedy Meadows Transfer Station	Goman Road West of M-152 Station Johnsondale, CA 93207	60 cubic yards	N/A
Pine Flat Transfer Station	43659 Pine Flat Drive / Mt. Road 56 California Hot Springs, CA 93207	10 tons/day	15 tons/day
Springville Transfer Station	Avenue 122 at Road 338 Springville, CA 93265	12 tons/day	100 tons/day

Source: Tulare County. 2018. Transfer Station Locations and Fees. Available online at: http://tularecounty.ca.gov/rma/index.cfm/about-us/services/solid-waste/disposal-in-mountain-communities/transfer-station-locations-and-fees/, accessed April 24, 2018.

4.12.3.2 REGULATORY FRAMEWORK

Federal

Federal Agencies and Regulations.

Subtitle D of the Resource Conservation and Recovery Act (RCRA) (42 USC Section 6901 *et seq.*) establishes minimum location standards for siting municipal solid waste landfills. Because California laws and regulations governing the approval of solid waste landfills meet the requirements of Subtitle D, USEPA has delegated the enforcement responsibility to the State of California.

Energy Star Program

In 1992, the US EPA introduced Energy Star as a voluntary labeling program designed to identify and promote energy-efficient products to reduce GHG emissions. The program applies to major household appliances, lighting, computers, and building components such as windows, doors, roofs, and heating and cooling systems. Under this program, appliances that meet specifications for maximum energy use established under the program are certified to display the Energy Star label. In 1996, US EPA joined with the US Department of Energy to expand the program, which now also includes qualifying commercial, industrial and residential buildings.

State

California Integrated Waste Management Act

As many of the landfills in the state are approaching capacity and the siting of new landfills becomes increasingly difficult, the need for source reduction, recycling, and composting has become readily apparent. In response to this increasing solid waste problem, in September 1989 the state assembly passed Assembly Bill 989, known as the California Integrated Waste Management Act. This statute emphasizes conservation of natural resources through the reduction, recycling and reuse of solid waste. Assembly Bill 989 required cities and counties in the state to divert 25 percent of their solid waste stream from landfills by 1995 and 50 percent by year 2000, or face potential fines of millions of dollars per year. In 2008, the California Integrated Waste Management Act also requires that all cities conduct a Solid Waste Generation Study and prepare a Source Reduction Recycling Element.

AB 939 established the current organization, structure, and mission of CalRecycle. The purpose was to direct attention to the increasing waste stream and decreasing landfill capacity, and to mandate a reduction of waste being disposed. All Jurisdictions were required to meet diversion goals of 25 percent by 1995 and 50 percent by the year 2000. A disposal reporting system was established with CalRecycle oversight, facility and program planning was required, and cities and counties began to address waste problems.

AB 341 (Chapter 476, Statutes of 2011) established a statewide goal to reduce, recycle, or compost at least 75 percent of solid waste by 2020. Unlike AB 939's goals, this is a statewide reduction goal, not a diversion goal. AB 341 also required local jurisdictions to implement commercial recycling programs to divert recyclable material away from landfills and required commercial generators and multi-family residences to arrange for recycling services starting in 2012.

2016 California Green Building Standard Code

The California Green Building Standards Code (California Code of Regulations, Title 24, Part 11), commonly referred to as the CALGreen Code, is a statewide mandatory construction code that was developed and adopted by the California Building Standards Commission and the California Department of Housing and Community Development in 2008. The purpose of this code is to improve public health, safety and general welfare by enhancing the design and construction of buildings through the use of building concepts having a reduced negative impact or positive environmental impact and encouraging sustainable construction practices including recycling of construction (diversion of 50 percent) and other waste streams.

AB 2020 The California Bottle Bill

AB 2020 (Public Resources Code Section 14500 *et seq*.) took effect in 1987 as litter prevention legislation. At present, the minimum refund value established for each type of eligible beverage container is 5 cents for each container under 24 ounces and 10 cents for each container 24 ounces or greater.

SB 20 Electronic Waste "E-Waste" Recycling

SB 20 (Public Resources Code Section 42460 *et seq*.) was signed in September of 2003; it establishes a system to recycle computers, TVs, and other video display devices (known as electronic waste) when they reach their end-of-life. Fees are collected from consumers at point of purchase to fund recycling programs.

AB 2901 – Cell Phone Recycling

AB 2901 Public Resources Code Section 424p0 *et seq*. was signed into law on September 29, 2004. It requires all cell phone retailers to take back used cell phones for recycling at no charge to the customer.

The California Universal Waste Law

Special laws and regulations pertain to disposal of universal waste. (22 Cal. Code Regs. § 66260 *et seq*.) Examples of universal wastes are batteries, fluorescent tubes, and some electronic devices, that contain mercury, lead, cadmium, copper, and other substances hazardous to humans and the environment. Universal waste cannot be disposed in solid waste landfills. Rather, universal wastes can be recycled. Recycling requirements are less stringent than those of other hazardous wastes to encourage recycling and recovery of valuable metals.

AB 2449 and SB 270 - Plastic Bag Recycling

Adopted in 2006, AB 2449 (Chapter 845, Statutes of 2006) requires all California grocery stores to take back and recycle plastic grocery bags. The bill also requires retailers to provide consumers with a bag reuse opportunity by providing reusable bags which can be purchased and used in lieu of disposable ones.

Many cities and counties have adopted plastic bag ordinances. SB 270 of 2014 (Chapter 850, Statutes of 2014) established a statewide prohibition on the sale or distribution of single-use carryout plastic bags in grocery stores and pharmacies, convenience food stores, and food marts. Retailers must charge customers at least 10 cents to buy a recycled paper bag or reusable grocery bag. A referendum to repeal this law failed in the November 2016 election.

Local

Countywide Integrated Waste Management Plan

Counties are required to prepare and submit to CalRecycle an integrated waste management plan which includes all Source Reduction and Recycling Element (SRREs), all Household Hazardous Waste Element (HHWEs), a Countywide Siting Element (CSE), all Nondisposal Facility Elements (NDFEs), all applicable Regional SRREs, HHWEs. Tulare County must submit its Regional Siting Element. Public Resources Code Section 41751 requires that a countywide integrated waste management plan include a summary of significant waste management problems facing the county or city and county. The plan is required to provide an overview of the specific steps that will be taken by local agencies, acting independently and in concert, to achieve the purposes of this division. The plan is required to contain a statement of the goals and objectives set forth by the countywide task force.

Source Reduction and Recycling Element

The SRRE consists of the following components: waste characterization, source reduction, recycling, composting, solid waste facility capacity, education and public information, funding, special waste and integration. Each city and county is required to prepare, adopt, and submit to the Board an SRRE, which includes a program for management of solid waste generated within the respective local jurisdiction. The SRREs must include an implementation schedule for the proposed implementation of source reduction, recycling, and composting programs. In addition, the plan identifies the amount of landfill and transformation capacity that will be needed for solid waste which cannot be reduced, recycled, or composted.

Household Hazardous Waste Element

Each city and county is required to prepare, adopt, and submit to the Board, a HHWE that identifies a program for the safe collection, recycling, treatment, and disposal of hazardous wastes that are generated by households. The HHWE specifies how household hazardous wastes generated by households within the jurisdiction must be collected, treated, and disposed of.

Non-Disposal Facility Element

Each city and county is required to prepare, adopt and submit to the Board, an NDFE that includes a description of new facilities and expansion of existing facilities, and all solid waste facility expansions (except disposal and transformation facilities) that recover for reuse at least 5 percent of the total volume. The NDFE are to be consistent with the implementation of a local jurisdiction's SRRE. Each jurisdiction

must also describe transfer stations located within and outside of the jurisdiction, which recover less than 5 percent of the material received.

Countywide Siting Element

Counties are required to prepare a CSE that describes areas that may be used for developing new disposal facilities. The element also provides an estimate of the total permitted disposal capacity needed for a 15-year period if counties determine that their existing disposal capacity will be exhausted within 15 years or if additional capacity is desired (PRC Sections 41700-41721.5).

Tulare County General Plan

The Tulare County General Plan includes the following policies related to solid waste:

- **PFS-5.1 Land Use Compatibility with Solid Waste Facilities:** The County shall ensure that solid waste facility sites (for example, landfills) are protected from encroachment by sensitive and/or incompatible land uses.
- **PFS-5.2 Notification:** The County shall provide notification to proposed development within one-mile of a solid waste facility of the existence of that solid waste facility and any proposed changes at facility.
- **PFS-5.3 Solid Waste Reduction:** The County shall promote the maximum feasible use of solid waste reduction, recycling, and composting of waste, strive to reduce commercial and industrial waste on an annual basis, and pursue financing mechanisms for solid waste reduction programs.
- **PFS-5.4 County Usage of Recycled Materials and Products:** The County shall encourage all industries and government agencies in the County to use recycled materials and products where economically feasible.
- **PFS-5.5 Private Use of Recycled Products:** The County shall work with recycling contractors to encourage businesses to use recycled products and encourage consumers to purchase recycled products.
- **PFS-5.6 Ensure Capacity:** The County shall require evidence of adequate capacity within the solid waste system for the processing, recycling, transmission, and disposal of solid waste prior to approving new development.
- **PFS-5.7 Provisions for Solid Waste Storage, Handling, and Collection:** The County shall ensure all new development adequately provides for solid waste storage, screening, handling, and collection prior to issuing building permits.
- **PFS-5.8 Hazardous Waste Disposal Capabilities:** The County shall require the proper disposal and recycling of hazardous materials in accordance with the County's Hazardous Waste Management Plan.

- **PFS-5.9 Agricultural Waste:** Investigate waste disposal and reuse needs for agricultural wastes for energy and other beneficial uses and shall change County plans accordingly.

City of Visalia General Plan

The Visalia General Plan includes the following policies related to solid waste:

- **PSCU-P-64:** Develop a quadrant transfer station for the Southwest part of the City.
- **PSCU-P-66:** Continue to achieve the State waste reduction standard established for the Consolidated Waste Management Authority, and establish a more stringent local standard based on recent waste reduction trends.
- **PSCU-P-67:** Promote solid waste reduction, recycling, and composting to Visalia residents and business as an important way to conserve limited natural resources.
- **PSCU-P-68:** Maintain and expand the Recycling and Source Reduction Program to serve all customer types, and to be provided by all waste collection service providers.
- **PSCU-P-69:** Maintain and expand innovative solid waste service and programs including the City's green waste program, the construction and demolition debris recycling and reuse program, and the food waste composting program.
- **PSCU-P-70:** Continue the City's partnership with the Tulare County Household Hazardous Waste (HHW) program and support the proper disposal of hazardous household waste and waste oil through public education, the disposal facility, and collection services.

4.12.3.3 ENVIRONMENTAL IMPACTS

Thresholds of Significance

For the purposes of this EIR, TCAG has determined that implementation of the proposed RTP/SCS, and transportation project list and financing plan would result in significant impacts to the County's solid waste capacity, if the following would occur:

- Generate a substantial increase in the amount of solid waste that could exceed the permitted capacity of one or more landfills.
- Comply with federal, state, and local statutes and regulations related to solid waste

Methodology

The following analysis evaluates impacts to landfills in Tulare County based on projected population, housing, and employment growth. The methodology for determining the significance of these impacts

applies the significance criteria above to the future (2042) demand for solid waste disposal and compares future demand with the RTP/SCS to the existing capacity.

Both short-term construction related impacts and long-term impacts from implementation of the 2018 RTP/SCS are considered in the analysis. The analysis is programmatic in nature, project specific impacts may vary, and mitigation measures, as appropriate and applicable would be developed on a project-by-project basis.

Determination of Significance

The following analysis evaluates impacts on solid waste landfills that could be affected by the implementation of the Plan. Impacts to these facilities were evaluated relative to projected population, housing, and employment growth. The methodology for determining the significance of these impacts applies the significance criteria above to the future (2042) demand for solid waste disposal.

Impacts and Mitigation Measures

Impact SW-1 **Generate a substantial increase in the amount of solid waste that could exceed the permitted capacity of one or more landfills.**

Impact SW-2 **Comply with federal, state, and local statutes and regulations related to solid waste.**

Many of the transportation and land use projects within the 2018 RTP/SCS could generate a substantial amount of solid waste during construction through grading and excavation activities as well as debris resulting from removal of structures. Construction debris could be recycled or used as fill at other projects (clean dirt) or transported to the nearest landfill site and disposed of appropriately.

The two landfills located in Tulare County, listed in **Table 4.12.3-1**, function at or below their permitted capacity. However, neither landfill facility is permitted to 2042 or beyond. Construction of development projects could generate substantial amounts of solid waste. Under the California Green Building Code described above, construction waste diversion of 50 percent is required during most new construction projects. In addition, the waste diversion rates from construction as well as diversion rates associated with all municipal wastes would increase over time further reducing the amount of construction and other wastes.

The population of Tulare County is projected to increase by 133,127 from 2017 to 2042. The California Department of Resources Recycling and Recovery (CalRecycle) estimates that the average resident in California disposes of 4.9 pounds of trash per day and the average employee disposes of 11.4 pounds of

trash per day as of 2016. From 2008 to 2016, solid waste generation per employee and resident in California has remained constant.[32]

The solid waste generation rates for 2016 were used to calculate the solid waste that could be generated in 2042 as a result of population and employment. As discussed above, solid waste generation per capita has in general trended downward as new regulations come into effect. Using the 2016 solid waste generation rates for 2042 would result in a conservative estimate of solid waste generated in 2042 by the projected growth. Assuming a diversion rate of 50 percent, the adjusted waste generated per day in Tulare County under 2018 RTP/SCS conditions in 2042 would be 1,369 tons per day, as indicated in **Table 4.12.3-3, Solid Waste Generated in Tulare County**.

Table 4.12.3-3
Solid Waste Generated in Tulare County

Year	Number of People	Solid Waste Generation Rate [c]	Solid Waste Generated (tons/day)	Adjusted Solid Waste Generated (tons/day)*
Population				
2017	471,842	4.9	1,156	578
2042	604,969	4.9	1,482	741
Employment				
2017	176,289	11.4	1,005	503
2042	220,210	11.4	1,255	628
2017 Total			**2,161**	**1,081**
2042 Total			**2,737**	**1,369**

Note:
Assuming a diversion of 50 percent to achieve state standards.
Source: Cal Recycle, California's 2016 Per Capita Disposal Rate Estimate
http://www.calrecycle.ca.gov/lgcentral/goalmeasure/disposalrate/Graphs/Disposal.htm

The maximum daily disposal for the two permitted landfills in Tulare County is calculated to be 2,800 tons/day as of 2018. This would be sufficient to accommodate solid waste generation in 2042; however, the current facilities are only permitted through 2022 and 2024. There are no facilities that exist in the County that have permitted capacity for 2042. As stated above, the amount of solid waste projected to be generated is a conservative estimate. In addition, the higher density, infill developments proposed as part of the 2018 RTP/SCS would generate less solid waste than the same population accommodated by

32 California Statewide per Resident, per Employee, and Total Disposed Since 1989. 2012. http://www.calrecycle.ca.gov/lgcentral/goalmeasure/disposalrate/graphs/disposal.htm

dispersed development (less green waste associated with landscaping). It is likely that existing landfills will seek to extend their permitted operations beyond their current horizon year. However, without any information as to future permits, sufficient permitted landfill capacity has not been identified to serve the needs of the County in 2042, therefore, the impact to solid waste facilities would be significant.

Compliance with federal, state and local statutes and regulations related to solid waste is required and there is nothing in the 2018 RTP that could lead to non-compliance with any identified statutes and regulations. Therefore, impacts associated with solid waste statutes and regulations are less than significant.

Level of Significance Before Mitigation

Significant for **Impact SW-1** and less than significant for **Impact SW-2**.

Mitigation Measures

MM-SW-1: Consistent with the provisions of Section 15091 of the *State CEQA Guidelines*, TCAG has identified mitigation measures capable of avoiding or reducing the significant effects to landfill capacity that are within the responsibility of local agencies (land use projects) and implementing agencies (transportation projects). Where the Lead Agency has identified that a project that has the potential for significant effects, the Lead Agency can and should consider mitigation measures to minimize solid waste generation to ensure compliance with the County's Integrated Waste Management Plan. Such measures include but are not limited to the following:

- Encourage project sponsors to integrate green building measures into project design such as those identified in the U.S. Green Building Council's Leadership in Energy and Environmental Design, CALGreen (California Building Code Title 24), energy Star Homes, Green Point Rated Homes, and the California Green Builder Program. These measures could include the following:

- Reuse and minimization of construction and demolition (C&D) debris and diversion of C&D waste from landfills to recycling facilities.

- Inclusion of a waste management plan that promotes maximum C&D diversion.

- Source reduction through (1) use of materials that are more durable and easier to repair and maintain, (2) design to generate less scrap material through dimensional planning, (3) increased recycled content, (4) use of reclaimed materials, and (5) use of structural materials in a dual role as finish material (e.g., stained concrete flooring, unfinished ceilings, etc.).

- Reuse of existing structure and shell in renovation projects.
- Design for deconstruction without compromising safety.
- Design for flexibility through the use of moveable walls, raised floors, modular furniture, moveable task lighting and other reusable building components.
- Development of indoor recycling program.
- Require the reuse and recycle of construction and demolition waste (including, but not limited to, soil, vegetation, concrete, lumber, metal, and cardboard).
- Integrate reuse and recycling into residential industrial, institutional and commercial projects.
- Provide recycling opportunities for residents, the public, and tenant businesses.

Level of Significance After Mitigation

Because this PEIR evaluates impacts at the programmatic level, all project circumstances are not foreseeable and these mitigation measures may not be feasible or effective for some projects. Therefore, even with implementation of **Mitigation Measure MM-SW-1(a), Impact SW-1** with respect to exceeding the permitted capacity of landfills would remain significant and unavoidable. No additional feasible mitigation measures are available to reduce significant and unavoidable impacts beyond those identified in this PEIR. **Impact SW-2** would be less than significant.

4.12.3.4 CUMULATIVE EFFECTS

The Plan focuses growth and development in urbanized areas. While these areas are currently served by landfills, permitted landfill space is a finite resource. As population and employment increase, in neighboring counties, additional demands will be placed on landfills with remaining capacity both inside and outside Tulare County. The increased demand on landfill capacity could result in the need to truck waste long distances. As a result, the 2018 RTP/SCS would add to cumulative increases in solid waste and impacts on available landfills to the extent that Tulare County residents seek to dispose of wastes outside the County or that residents outside the County seek to dispose of wastes at landfills within Tulare County. Impacts of the 2018 RTP on solid waste impacts would be significant, and would combine with impacts of cumulative projects (RTP/SCSs for other jurisdictions). Cumulative landfill impacts would be significant, and the 2018 RTP/SCS contribution would be cumulatively considerable. **Mitigation Measure MM-SW-1(a)** would reduce the 2018 RTP/SCS contribution to cumulative solid waste impacts related to exceeding permitted landfill capacity; however, the Plan's contribution to these impacts would remain

cumulatively considerable. Plan impacts with respect to **Impact SW-1** would be less than significant and not cumulatively considerable.

4.13 WATER SUPPLY & HYDROLOGY

This section addresses hydrology, water quality, and water supply and demand in the region, and evaluates the significance of changes to these resources that could result from implementation of the 2018 RTP/SCS.

4.13.1 ENVIRONMENTAL SETTING

4.13.1.1 Regional Hydrological Setting

Tulare County consists of 4,840 square miles in the San Joaquin Valley[1]. There are four primary rivers located in the County, with associated watersheds that extend beyond County borders: Kings, Kaweah, Tule, and White River/Deer Creek.[2] The Kaweah and Tule Rivers are the primary rivers and are therefore the rivers discussed in more detail throughout this section. Streams within the County generally flow westward into the San Joaquin Valley from the Sierra Nevada Mountains.

The State Department of Water Resources (DWR) considers California to have ten hydrological regions that generally correspond to the State's primary drainage basins. The County of Tulare lies entirely within the Tulare Lake Hydrological Region (Tulare HR). The Tulare HR is shown in **Figure 4.13-1**. The Tulare HR is a closed drainage basin at the south end of the San Joaquin Valley, south of the San Joaquin River watershed, encompassing stream channels draining to Kern, Tulare, and Buena Vista Lakes.[3]

Tulare County is underlain by the San Joaquin Valley Groundwater Basin. Within the larger basin, there are four further sub-basins: Kings, Kaweah, Tule, and Deer Creek/White River. Although the Kings sub-basin underlies 976,000 acres of Tulare, Fresno, and Kings Counties, the bulk of it underlies Fresno County. The Kaweah Sub-basin underlies 446,000 acres, primarily in Tulare County, with its western portion underlying Kings County. The Tule Sub-basin, in the southwestern portion of Tulare County, underlies 467,000 acres of Tulare County.[4] The main watersheds of the County are shown in **Figure 4.13-2 Main Watersheds of Tulare County**.

1 Tulare County. Recirculated Draft EIR for Tulare County General Plan 2030 Update. February 2010.

2 Ibid.

3 Ibid.

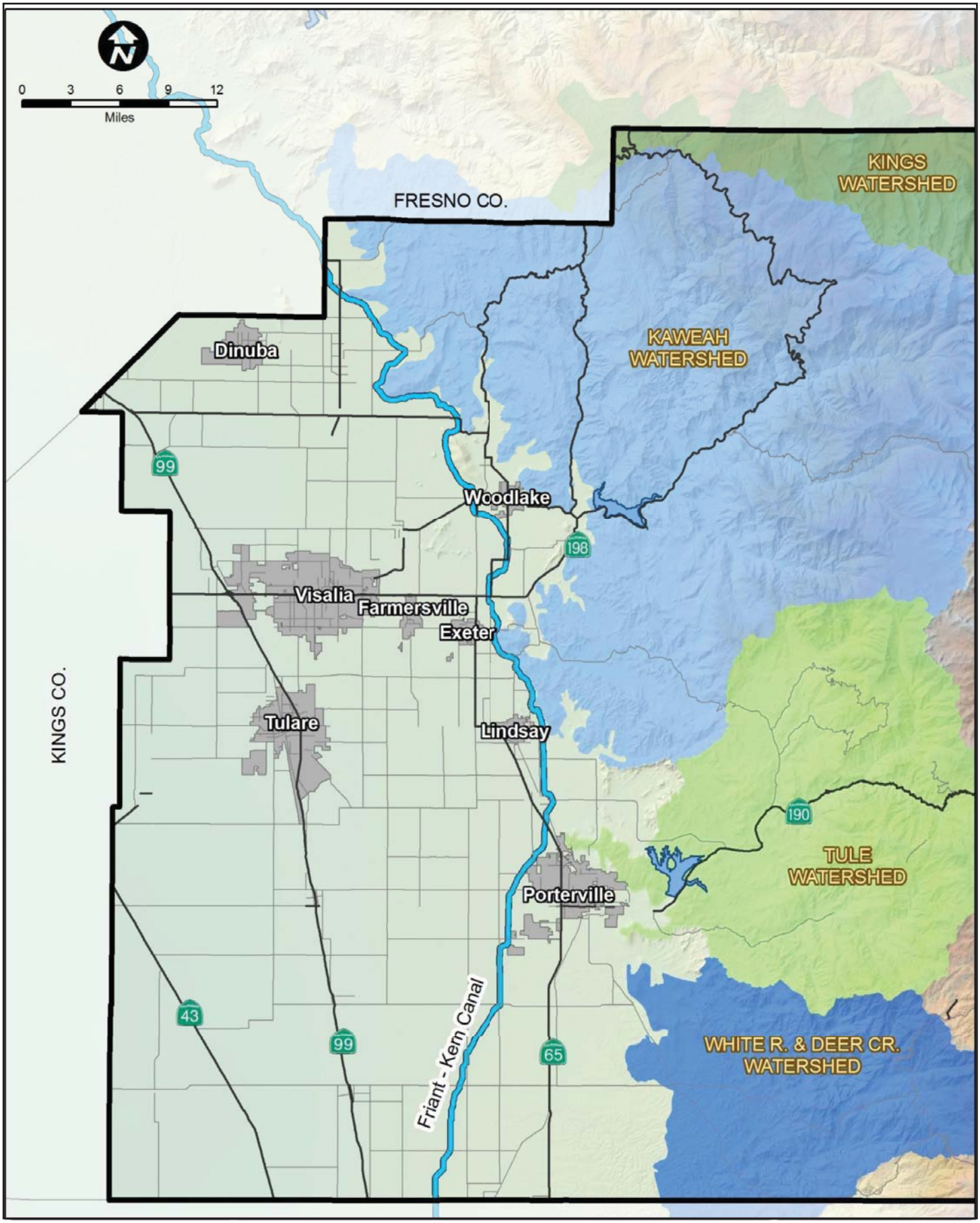
4 Ibid.

SOURCE: California Department of Water Resources, 2018

FIGURE **4.13-1**

IMPACT SCIENCES

Tulare Lake Hydrologic Region



SOURCE: Quad Knopf, 2016

FIGURE **4.13-2**

IMPACT SCIENCES

Main Watersheds of Tulare County

1290.001•04/18

Climate

The north Pacific high-pressure system dominates the region's large-scale meteorology and produces northerly winds along the entire west coast of the United States, including the San Joaquin Valley, during most of the year. Precipitation rarely occurs in the summer months in Tulare County. **Table 4.13-1, Climate in the Tulare Region**, summarizes the typical range in temperatures and precipitation for the region.

Table 4.13-1
Climate in the Tulare Region

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual
Avg. Precip. (inches)	1.69	1.51	1.50	0.86	0.35	0.07	0.01	0.01	0.17	0.43	0.87	1.32	8.80
Avg. Temp. (°F)	46.4	51.7	55.9	61.1	67.8	75.1	80.5	78.9	73.7	65.2	54.5	46.8	63.1
Max. Temp. (°F)	55.9	62.6	68.1	74.7	82.6	91.2	97.6	96.3	90.1	80.2	67.3	56.8	77
Min Temp. (°F)	36.9	40.8	43.7	47.5	53.0	59.0	63.4	61.5	57.2	50.1	41.6	36.7	49.3
ETo (inches)[(a)]	0.94	1.74	3.39	5.02	6.34	7.3	7.48	6.57	5.18	3.61	1.93	0.95	50.45

Source: 2010 Tulare County Irrigation District Water Management Plan, Section 1D Climate. https://www.usbr.gov/mp/watershare/docs/2012/tulare-irrigation-district.pdf, accessed 2017
Notes:
Weather station ID: Tulare, CA/Visalia, CA
Data period: 1876 to 2010
(a) Evapotranspiration (ET) is the sum of evaporation and plant transpiration from the Earth's land surface to atmosphere.

4.13.1.2 Water Supply

Tulare County gets its water supply from groundwater, local surface water, and imported surface water. In 2010 (the most recent data readily available), local and imported surface water supplies were 1,380,200 acre-feet.[5] The rest of the County's water comes from groundwater. These supplies amounted to 1,471,700 acre-feet.[6] Since 2010, the state of California has seen historic drought over the years and the supply reflected in 2010 may not represent existing conditions. Although the drought emergency was ended for the rest of California in 2017, Governor Brown did not end the drought emergency in a handful of counties, including Tulare County. The County has continuously proclaimed a local drought emergency since Feb 4, 2014. [7]

5 Tulare County Resource Management Agency. Draft EIR for the Animal Confinement Facilities Plan, Dairy and Feedlot Climate Action Plan. January 2016.

6 Ibid.

7 County of Tulare. 2018. Drought. Available online at: http://tularecounty.ca.gov/emergencies/index.cfm/drought/, accessed April 23, 2018.

Imported Surface Water

The Central Valley Project (CVP), State Water Project (SWP), and the Cross Valley Canal (CVC) distribution systems provide imported surface water to Tulare County. The Friant-Kern Canal supplies CVP water to contractors throughout the County, including 18 water districts. The CVC system transfers water from the State Water Project's California Aqueduct to the eastern side of the San Joaquin Valley, including Tulare County.

Local Surface Water

The four watersheds found in Tulare County are the primary sources of local surface water:

- *Kings River Watershed:* This watershed ranges in elevation from 500 to 14,000 feet over an area of 1,742 square miles. The primary water supply is from the Kings River itself through the operation of three different reservoirs.[8] The average annual yearly runoff for the Kings River is 1,689,700 acre-feet, although this varies depending upon annual precipitation.[9]

- *Kaweah River Watershed:* This watershed lies immediately south of the Kings River Watershed. The watershed covers 561 square miles of the Sierra Nevada and is centered on the Kaweah River, itself a tributary of the Tule River. The primary source of water from this watershed is the Terminus Reservoir/Lake Kaweah. The Kaweah River's average annual runoff is 430,000 acre-feet.[10]

- *Tule River Watershed:* This watershed drains 390 square miles above Lake Success.[11] Average annual runoff drainage of the Tule River itself is 136,000 acre-feet.[12]

- *Deer Creek/White River Watershed:* The fourth watershed is in the southernmost portion of Tulare County. Surface water emanates from a stream group. This part of the County has the highest dependence on imported water of any region in the TCAG footprint.[13]

Groundwater

Groundwater in Tulare County is present in valley deposits of alluvium that are several thousand feet thick and occurs in both confined aquifers and unconfined conditions (where water is free to flow out of the area).[14]

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8 Tulare County. Recirculated Draft EIR for Tulare County General Plan 2030 Update. February 2010.

9 Ibid.

10 Ibid.

11 Ibid.

12 Ibid.

13 Ibid.

14 Department of Water Resources (DWR). 2003. California's Groundwater Update, Bulletin 118.

The depth to groundwater varies throughout the valley floor area of Tulare County. In the area around Visalia, depth to groundwater varies from about 120 feet below ground surface along the western portion of the city, to approximately 100 feet below ground surface to the east, as measured in spring 2010.[15] Over the last fifty years, each successive drought period has resulted in an increase in groundwater pumping that has caused the water table to drop significantly. As agricultural land is converted to urban uses and industry grows, the competition for water resources among agricultural, urban, industrial, and environmental interests will continue to increase. [16]

Groundwater pumping increases in Tulare County when surface supplies available to the County are reduced. Surface water supplies have been reduced in recent years due to drought, environmental restrictions, and other factors. Estimates of groundwater overdraft vary. Total overdraft has been estimated at 820,000 af/yr, while historical overdraft has been estimated at 308,000 af/yr for the period 1921-1993.[17] In response to the state of groundwater overdraft conditions, there are more than 19 entities within the County with active groundwater management programs.[18]

Groundwater contributes to approximately 53 percent of the region's total water supply. Groundwater extraction in the Tulare Lake Hydrologic Region averages 6,185 thousand acre feet (taf) per year. Between 2002 and 2010, the Tulare Lake Hydrologic Region's annual volume of groundwater extraction ranged from 3,504 taf in 2005 to 8,711 taf in 2009. Agriculture is estimated to be the largest user of groundwater, using an estimated 90 percent of all groundwater. Approximately 10 percent of the average groundwater use by the Tulare Lake Hydrologic Region was for urban uses.[19]

Groundwater banking is the storage/recharge of excess water supplies into aquifers during wet periods for later withdrawal/recovery for use during dry periods. Historically, during wet periods, surface water imports have been substantial enough to satisfy irrigation and urban water needs and thus, groundwater aquifers are naturally recharged. The groundwater is then pumped/extracted out through the many private and publicly owned wells located throughout the region during dry periods when local or imported surface water supplies are insufficient. In the Kaweah Sub-basin, the Kaweah River is a major

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15 DWR. 2010. Statewide Groundwater Level Data, 5-22.11 Kaweah, Depth to Water

16 Kaweah Delta Water Conservation District. 2009. Groundwater Management Plan, 2006, Amended July 2015

17 Tulare County Resource Management Agency. Draft EIR for the Animal Confinement Facilities Plan, Dairy and Feedlot Climate Action Plan. January 2016.

18 Appendix G: Phase I Water Supply Evaluation for Tulare County. Tulare County General Plan 2030 Update Recirculated Draft EIR. June 2009.

19 State of California, Natural Resources Agency, Department of Water Resources. California's Groundwater Update 2013: A Compilation of Enhanced Content for California Water Plan Update 2013. Chapter 2: Statewide Groundwater Update. https://www.water.ca.gov/-/media/DWR-Website/Web-Pages/Water-Basics/GroundWater/Files/Resources-And-Reports/Californias--Groundwater-Update-2013.pdf. April 2015.

source of recharge to the area. The DWR estimates the Kaweah River's natural groundwater recharge to be 62,400 acre-feet per year in Tulare County. In the Tule Sub-basin, natural recharge is estimated at 34,000-acre-feet per year and approximately 201,000 acre-feet of applied water recharge.[20]

Reclaimed Water

In 2013, the City of Visalia approved upgrades to its Water Conservation Plant, which enabled production and transport of recycled water to the Tulare Irrigation District (TID). This water is used for agricultural irrigation. The City of Tulare's water treatment plant also discharges effluent to ponds for disposal and storage, the majority of which is available for recycled water projects.

4.13.1.3 Water Quality

Water quality is examined due to its potential harmful effects on human health, biological resources, and ecosystems. Water quality is determined by factors such as the natural condition of the groundwater and surface water, as well as natural and anthropogenic sources of contamination.

Surface Water

Stormwater flowing over both urban and agricultural areas can carry pollutants through drainage systems and man-made storm drainage infrastructure into surface water bodies. These flows are referred to as non-point sources of pollution. Such discharges are generally unregulated, which can result in completely untreated pollutants entering bodies of water.

The quality of stormwater in the urbanized areas varies greatly depending on climatic and land use conditions. Urban and industrial runoff is known to contribute significantly to the levels of toxic materials, such as metals and organic pesticides, transported to streams. Stormwater discharges may contain high levels of contaminants including: petroleum fuels and oils; organic matter such as pet and domestic livestock wastes; pesticides, metals such as copper, lead, cadmium, and zinc; and fertilizers such as nitrogen and phosphorus.

Groundwater

Most of the groundwater in Tulare County is suitable for both agricultural and urban uses with standard water treatment. However, certain areas of the County do have impaired groundwater. The primary pollutants found in these areas are arsenic, uranium and radium 228, herbicides, pesticides, fertilizers,

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20 Appendix G: Phase I Water Supply Evaluation for Tulare County. Tulare County General Plan 2030 Update Recirculated Draft EIR. June 2009.

and nitrate. Both radiological components and nitrates are present near the foothills of the Sierra Nevada, however their presence tends to decrease moving away to the west. In addition, the salinity of groundwater tends to increase moving west from the mountains. [21]

Kings Sub-Basin: The groundwater in this basin tends to be high in radiological contaminants and nitrates near the foothills of the Sierra Nevada. Further to the west, natural contaminants are diluted by recharge from surface water.

Kaweah Sub-Basin: The Kaweah Sub-basin is high in nitrates on the eastern side.

Tule Sub-Basin: The basin has the most significant issues out of the groundwater sub-basins in Tulare County. Pollutants include nitrates, chlorides, and dibromocloropropane (DBCP). Communities along SR-99 tend to have access to good quality deep and shallow sources, while water quality in other areas is unacceptable due to arsenic and other naturally occurring contaminants.[22]

4.13.1.4 Groundwater Hydrology

Groundwater is the part of the hydrologic cycle representing underground water sources. Groundwater is present in many forms: in reservoirs, both natural and constructed, in underground streams, and in the vast movement of water in and through sand, clay, and rock beneath the earth's surface. The place where groundwater comes closest to the surface is called the water table, which in some areas may be very deep, and in others may be right at the surface.

As seen in **Table 4.13-1, Climate in the Tulare Region,** an average of only 8.8 inches per year of rainfall is recorded on the valley floor. Therefore, the use of groundwater is necessary to maintain a sufficient water supply to the various land uses. It is estimated that on average, groundwater accounts for between 32 percent of the regions' total water supply during wet years and 70 percent during dry years.[23]

The main sources of groundwater recharge, other than rainfall, are applied irrigation water, surplus imported water, and the County's rivers and streams. Significant areas of groundwater recharge are located along the stream channels of the rivers, where porous soils and gravels allow for extensive aquifer recharge. Other areas away from river flood plains are characterized by semi-consolidated gravels

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21 ESA. Appendix G: Phase I Water Supply Evaluation for Tulare County. Tulare County General Plan 2030 Update Recirculated Draft EIR. June 2009.

22 Ibid

23 State of California, Natural Resources Agency, Department of Water Resources. California's Groundwater Update 2013: A Compilation of Enhanced Content for California Water Plan Update 2013. Chapter 2: Statewide Groundwater Update. https://www.water.ca.gov/-/media/DWR-Website/Web-Pages/Water-Basics/GroundWater/Files/Resources-And-Reports/Californias--Groundwater-Update-2013.pdf. April 2015.

with low recharge capability or, more often, clay or hardpan soils, which allow minimal groundwater recharge. In the riverbeds, 500- to 2,000-foot-thick poorly sorted deposits of silt, sand, rock, and clay that originated from the Sierra Nevada, provide moderate to high permeability. This phenomenon is also seen in some of the unlined canals which branch off from the rivers and creeks. Major water banking and conjunctive use projects also contribute large amounts of recharge to the region. Secondary sources of groundwater are infiltration of water used for irrigation in agricultural applications, as well as urban runoff seepage from streams, canals, ditches, and underflow that enters the valley from tributary stream canyons.

4.13.1.6 Water Demand

Agricultural demand was developed from the total irrigated acreage of 694,500 acres[24] and an average consumptive water use of approximately 2.96 acre-foot per acre. **Table 4.13-2, Summary of Agricultural Water Demand** provides a breakdown of the acreage by crop type.

Water demands within the County are met by a variety of water purveyors, including the large wholesale agency, Tulare County Water Commission, its member districts, irrigation districts, investor-owned water companies, mutual water companies, municipalities, and private well owners. Water demands are summarized below for urban and agricultural demand sectors. **Table 4.13-3, Existing Tulare County Urban Water Demand** provides the County's residential, commercial, and industrial urban water use. The total applied water demand for urban, agricultural, and environment for the Tulare Region was estimated at approximately 2,873,800 in 2010.[25]

4.13.1.8 Flooding

Flooding generally occurs when soil and vegetation cannot absorb excess rainwater or snowmelt, and water runs off the land in quantities that cannot be carried in stream channels or kept in natural ponds or man-made drains and reservoirs. Periodic floods occur naturally on many rivers, forming areas known as floodplains. These river floods usually result from heavy rain, sometimes combined with melting snow, which causes the rivers to overflow their banks. A flood that rises and falls rapidly with little or no advance warning is called a flash flood. Flash floods usually result from intense rainfall over a relatively small area.

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24 California Department of Water Resources, Agricultural Land and Water Use Estimates, Tulare County data (2010), https://www.water.ca.gov/Programs/Water-Use-And-Efficiency/Land-And-Water-Use/Agricultural-Land-And-Water-Use-Estimates

25 ACFP DEIR, 2018.

Table 4.13-2
Summary of Agricultural Water Demand (afy)

Crop Type	Irrigated Acreage	Consumptive Water Use (acre-feet/acre)	Agricultural Water Demand (afy)
Grain	30,000	1.65	49,500
Cotton	21,800	2.98	64,964
Corn	162,400	3.16	513,184
Dry Bean	6,700	3.07	20,569
Alfalfa	86,700	5.13	444,771
Pasture	2,200	4.96	10,912
Processing Tomatoes	400	2.61	1,044
Market Tomatoes	200	1.87	374
Melons, squash, cucumbers	800	1.99	374
Onions and Garlic	400	3.51	1,404
Potatoes	200	1.62	324
Other Truck	600	1.25	750
Almonds and Pistachios	60,000	3.89	233,400
Deciduous	82,500	3.77	311,025
Subtropical	131,100	3.12	409,032
Vine	55,500	2.77	153,735
Total Irrigated Lands	**694,500**		**2,215,362**
Total Crop Lands	**786,800**		
Double Cropped	**92,300**		

Source: California Department of Water Resources, Agricultural Land and Water Use Estimates, Tulare County data (2010), https://www.water.ca.gov/Programs/Water-Use-And-Efficiency/Land-And-Water-Use/Agricultural-Land-And-Water-Use-Estimates

Tulare County has been historically vulnerable to flooding along the Kings, Kaweah, and Tule Rivers. Much of the Tulare basin lies within the natural floodplain of the Kaweah and Tule Rivers and many low-lying areas near the same two rivers are located in the 100-year floodplain. Principal impacts of flooding include damage to permanent structures, relocation of non-stationary objects, loss of human life, and damage to infrastructure and soil conditions. After the initial damage from floodwaters, standing water often creates a secondary level of destruction, by ruining crops, further undermining and damaging infrastructure, and contaminating water wells.

Table 4.13-3
Existing Tulare County Urban Water Demand

Jurisdiction	Single Family Interior	Single Family Exterior	Multi-Family Interior	Multi-Family Exterior	Commercial Use	Industrial Use	Urban Large Landscape	Energy Production	Groundwater Recharge	Conveyance Applied Water	Total
Tulare Lake Tulare Co.	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Consolidated Tulare Co.	0.1	0.1	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.4
Alta Tulare Co.	4.3	6.5	4.5	2.7	1.6	2.3	0.7	0.0	0.0	0.5	23.1
Orange Cove Tulare Co.	0.1	0.2	0.1	0.1	0.0	0.1	0.0	0.0	0.0	0.0	0.6
Kaweah Delta Tulare Co.	15.8	24.2	16.7	10.0	5.8	8.3	2.5	0.0	0.0	1.7	85.0
Tule Delta	6.6	10.0	6.9	4.1	2.4	3.4	1.0	0.0	0.0	0.7	35.1
Kings River Tulare Co.	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Kings-Kaweah Interstream Tulare Co.	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.2
Kaweah River Tulare Co.	0.2	0.3	0.2	0.1	0.1	0.1	0.0	0.0	0.0	0.0	1.0
Kaweah-Tule Interstream Tulare Co.	0.1	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.3
Tule River Tulare Co.	0.3	0.5	0.3	0.2	0.1	0.2	0.0	0.0	0.0	0.0	1.6
Deer Creek Tulare Co.	0.1	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.3
Poso Creek Tulare Co.	-	-	-	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Upper Kern River Tulare Co.	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Northeastern Kern Tulare Co.	0.1	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total SJD	27.8	42.2	29.1	17.3	10.0	14.4	4.2	0.0	0.0	2.9	147.9

Note: Water demand conditions were calculated based on water demand data provided by DWR at the finest level of detail available – the Detailed Analysis Unit (DAU).
Source: ESA. Appendix G: Phase I Water Supply Evaluation for Tulare County. Tulare County General Plan 2030 Update Recirculated Draft EIR. June 2009.

Flooding occurs occasionally on streets and roads in urbanized areas where stormwaters are diverted into manmade or artificial drainage systems. In urbanized areas, where significant surface areas are covered with impervious surfaces, Stormwater is not able to permeate and percolate into the soil, and must be diverted into a storm drainage system. In some areas, these drainage systems are occasionally overloaded with stormwater drainage, or the drains become clogged with leaves and other debris, thereby impeding stormwater drainage onto transportation facilities. The ability of the storm drainage system to accommodate water flows is also largely based on ground permeability and infrastructure capacity. In metropolitan areas, agencies responsible for maintaining and upgrading drainage facilities to accommodate volume are local cities and the County.

100-Year Floodplain

The 100-Year floodplain denotes an area that has a 1 percent chance of being inundated during any particular 12-month period. The risk of this area being flooded in any 100-year period is 1 percent but statistically the risk is almost 40 percent in any 50-year period.

Floodplain zones are determined by the Federal Emergency Management Agency (FEMA) and used to create Flood Insurance Rate Maps (FIRMs). These tools assist communities in mitigating flood hazards through land use planning. FEMA also outlines specific regulations for any construction located within a 100-year floodplain, whether residential, commercial, or industrial. Tulare County's FIRM number is 06107CIND0B, and was last updated on December 18, 2012.

Flood Protection Measures

The County has installed flood prevention infrastructure and participates in a comprehensive flood-damage reduction program in an effort to protect the region from floods. Levees and other flood control structures such as flood control reservoirs have been installed by various agencies and property owners as a means to reduce flood risk County's flooding conditions. Further, the Tulare County Water Commission participates in floodplain management measures, including the preparation of hydrology and flood-frequency studies, special storm reports, and flood area delineations.

The County Board of Supervisors acts as the governing board of a separate special district called the Tulare County Flood Control District. The Flood Control District appoints a seven member Flood Control Commission to provide operational oversight of the District. Duties of the Flood Control District include: planning, designing, constructing and maintaining flood control projects within the Flood Control District; Coordinating with Federal and State flood control agencies; maintaining channels, pumps, and ponding basins; administering the FEMA National Flood Insurance Program in Tulare County; and providing flood zone information and performing flood control investigations.

4.13.2 REGULATORY FRAMEWORK

4.13.2.1 Federal

Clean Water Act (CWA)

The federal CWA (33 USC section 1251 *et seq*.) of 1972 is the basic federal law that addresses surface water quality control and protection of beneficial uses of water. The objective of the CWA is to restore and maintain the chemical, physical, and biological integrity of the nation's waters through prevention, reduction, and elimination of pollution. The CWA applies to discharges of pollutants into waters of the U.S. The CWA establishes a framework for regulating stormwater discharges from municipal, industrial, construction and other activities under National Pollutant Discharge Elimination System (NPDES) regulations. In California, the SWRCB administers the NPDES program. The following CWA sections are most relevant to regulation of surface water in Tulare County.

Water Quality Standards and Section 303(d)

CWA section 303 requires states to adopt water quality standards for all surface waters of the U.S. As defined by the CWA, water quality standards consist of four elements: designated beneficial uses of water bodies, water quality criteria to protect designated uses, an anti-degradation policy to maintain and protect existing uses and high quality waters, and general policies addressing implementation issues.

Under CWA section 303(d) (33 USC section 1313[d]), states are required to develop a list of water bodies that are considered to be "impaired" from a water quality standpoint. Water bodies that appear on this list either do not meet or are not expected to meet water quality standards, even after the minimum required levels of pollution control technology have been implemented to reduce point-source discharges. The law requires that respective jurisdictions establish priority rankings for surface water bodies on the list and develop action plans (TMDLs) to improve water quality. A TMDL is a calculation of the maximum amount of a specific pollutant that a water body can receive and still meet federal water quality standards as provided in the CWA. TMDLs account for all sources of pollution, including point sources, nonpoint sources, and natural background sources.

The SWRCB, in compliance with CWA section 303(d), publishes the list of water quality-limited segments in California, which includes a priority schedule for development of TMDLs for each contaminant or "stressor" affecting the water body.[26]

26 SWRCB 2011

Section 401—Water Quality Certification

CWA section 401 requires that an applicant pursuing a federal permit to conduct any activity that may result in a discharge of a pollutant obtain a water quality certification (or waiver). Water quality certifications are issued by RWQCBs in California. Under CWA, the state (as implemented by the relevant board) must issue or waive CWA section 401 water quality certification for the Project to be permitted under CWA section 404. Water quality certification requires the evaluation of water quality considerations associated with dredging or the placement of fill materials into waters of the United States. Construction of individual projects under the 2018 RTP/SCS would require CWA section 401 certification if federal permits, such as Section 404 permits, are required.

National Pollutant Discharge Elimination System Waste Discharge Regulations

The 1987 amendments to the Federal Water Pollution Control Act established the National Pollutant Discharge Elimination System (NPDES) permit program to control discharges of pollutants from point sources [Clean Water Act (CWA) section 402]. The 1987 amendments to CWA created a new section of CWA devoted to stormwater permitting (CWA section 402[p]). The EPA has granted the State of California primacy in administering and enforcing the provisions of CWA and the NPDES permit program. The NPDES permit program is the primary federal program that regulates point-source and nonpoint-source discharges to waters of the United States. SWRCB issues both general and individual permits for certain activities. Relevant general and individual NPDES permits are discussed below.

Construction Stormwater NPDES Permit

A Construction General Permit for Discharges of Storm Water Associated with Construction Activity (SWRCB Order 2009-0009-DWQ (as amended by Orders 2010-0014-DWQ and 2012-0006-DWQ) is required for dischargers or projects who disturb one acre or more of soil or whose project disturbs less than one acre, but which is part of a larger common plan of development that in total disturbs one acre or more. The Construction General Permit requires the development and implementation of a Storm Water Pollution Prevention Plan (SWPPP). The SWPPP should contain a site map(s) which shows the construction site perimeter, existing and proposed buildings, lots, roadways, stormwater collection and discharge points, general topography both before and after construction, and drainage patterns across the project. The SWPPP must list Best Management Practices (BMPs) the discharger will use to protect stormwater runoff and show the placement of those BMPs. Additionally, the SWPPP must contain a visual monitoring program, a chemical monitoring program for "non-visible" pollutants to be implemented if there is a failure of BMPs, and a sediment monitoring plan if the site discharges directly

to a water body listed on the 303(d) list for sediment. Section A of the Construction General Permit describes the elements that must be contained in a SWPPP.

General Dewatering Permit

Small amounts of construction-related dewatering are covered under the General Construction Permit. Large amounts of dewatering, particularly over lengthy periods of time would be required to comply with the CVRWQCB's General Dewatering Permit (Order R5-2013-0074). Project-related dewatering is likely to be limited in nature and scope and would likely be covered under the General Construction Permit. However, larger projects with more dewatering than covered under the Construction General Permit require a Low Threat Discharge and Dewatering Permit from the Central Valley RWQCB.

Section 404 – Permitting Discharges of Dredge or Fill

Under Section 404 of the CWA, the US Army Corps of Engineers (USACE) has jurisdiction over "waters of the United States," including "wetlands." The term "waters of the US" includes (1) all waters that are or may be used in interstate or foreign commerce (including sightseeing or hunting), including all waters subject to the ebb and flow of the tide; (2) wetlands; (3) all waters such as interstate lakes, rivers, streams, mudflats, sand flats, wetlands, sloughs, prairie potholes, wet meadows, playa lakes, or natural ponds, the use, degradation or destruction of which could affect interstate or foreign commerce; (4) all impoundments of water mentioned above; (5) all tributaries of waters mentioned above; (6) the territorial seas; and (7) all wetlands adjacent to the waters mentioned above.

Section 404 permits are required for discharges of dredged or fill materials into waters of the United States, including wetlands. Permits authorized by USACE under the CWA typically involve mitigation to offset unavoidable impacts on wetlands and other waters of the United States in a manner that achieves no net loss of wetland acres or values.

The use of an authorized Nationwide Permit or issuance of an individual permit requires the project applicant to demonstrate compliance with the USACE's Final Compensatory Mitigation Rule. USACE requires mitigation for impacts to regulated resources. The concept of "no let loss" of wetlands functions and values is an important aspect of USACE's outlook on mitigation. The goal of no net loss has evolved; the most current national direction is available in the Final Compensatory Mitigation Rule[27]. This compensatory mitigation process seeks to replace the loss of existing aquatic resource functions and area. Project proponents required to complete mitigation are encouraged to use a watershed approach and watershed planning information. The Compensatory Mitigation Rule establishes performance standards,

[27] US Army Corps of Engineers (USACE). 2015. *Final Compensatory Mitigation Rule.*

sets timeframes for decision making, and to the extent possible, establishes equivalent requirements and standards for the three sources of compensatory mitigation:

- Permittee-responsible mitigation
- Contribution of in-lieu fees (second in preference)
- Use of mitigation bank credits (preferred)

Nonpoint Source Pollution Control Program Plan

California's Nonpoint Source Pollution Control Program Plan 1998 – 2013 was developed by the SWRCB and California Coastal Commission, in cooperation with the nine Regional Water Quality Control Boards, to conform to the requirements of Coastal Zone Reauthorization Act (CZARA) and the CWA. The plan is intended to protect the State's water quality by expanding its polluted runoff control efforts. It specifies 60 management measures to prevent or reduce water quality degradation from agriculture, forestry, urban areas, marinas and boating, hydromodification, and wetlands. It provides a single statewide approach to dealing with Nonpoint Source (NPS) pollution. A total of 28 state agencies are working collaboratively through the Interagency Coordinating Committee to implement the NPS Pollution Control Program Plan.

Regulations Covering Development in Floodplains

National Flood Insurance Program Congress passed the National Flood Insurance Act of 1968 and the Flood Disaster Protection Act of 1973 (42 USC section 4001 *et seq*.). The intent of these acts was to reduce the need for large, publicly funded flood control structures and disaster relief by restricting development on floodplains. FEMA administers the National Flood Insurance Program (NFIP) to provide subsidized flood insurance to communities that comply with FEMA regulations limiting development in floodplains. FEMA issues FIRMs for communities participating in the NFIP.

Executive Order 11988 (Floodplain Management) addresses floodplain issues related to public safety, conservation, and economics. It generally requires federal agencies constructing, permitting, or funding to:

- Avoid incompatible floodplain development;
- Be consistent with the standards and criteria of the NFIP; and
- Restore and preserve natural and beneficial floodplain values.

Safe Drinking Water Act

The Safe Drinking Water Act (SDWA), 42 USC sections 300(f) *et seq*., ensures the quality of Americans' drinking water. The law requires actions to protect drinking water and its sources (rivers, lakes, reservoirs, springs, and groundwater wells), and applies to public water systems serving 25 or more people. It authorizes the EPA to set national health-based standards for drinking water to protect against both naturally occurring and manmade contaminants. In addition, it oversees the states, municipalities, and water suppliers that implement the standards.

EPA standards are developed as a Maximum Contaminant Level (MCL) for each chemical or microbe. The MCL is the concentration that is not anticipated to produce adverse health effects after a lifetime of exposure, based upon toxicity data and risk assessment principles. EPA's goal in setting MCLs is to assure that even small violations for a period of time do not pose significant risk to the public's health over the long run. National Primary Drinking Water Regulations (NPDWRs, or "primary standards") are legally enforceable standards that limit the levels of contaminants in drinking water supplied by public water systems.

Secondary standards are non-enforceable guidelines regulating contaminants that may cause cosmetic effects (such as skin or tooth discoloration) or aesthetic effects (such as taste, odor, or color) in drinking water. EPA recommends secondary standards to water systems but does not require systems to comply. However, states may choose to adopt them as enforceable standards.

4.13.2.2 State

Municipal Storm Water NPDES Permit

The Municipal Storm Water Permitting Program established under NPDES regulates stormwater discharges from municipal separate storm sewer systems (MS4s). In the first phase, the SWRCB issued permits to medium and large municipalities, typically grouped as co-permittees in a metropolitan region. In the second phase, the SWRCB adopted a General Permit for the Discharge of Storm Water from Small MS4s (State Water Board Order WQ 2013-0001-DWQ). The permits require a municipality or other stormwater discharger to develop and implement a stormwater management plan or program. The stormwater programs incorporate BMPs that include construction controls (such as a model grading ordinance), legal and regulatory approaches (such as stormwater ordinances), public education and industrial outreach (to encourage the reduction of pollutants at various sources), inspection activities, wet-weather monitoring, and special studies.

The CVRWQCB in 2016 adopted a General Permit for MS4 discharges. It states: "[t]his Order regulates discharges of stormwater and authorized non-stormwater from municipal separate storm sewer systems (MS4s). Owners or operators of large and medium MS4s are expected to enroll under this Order as their current individual MS4 Permits expire. Owners or operators of small regulated MS4s currently enrolled under the State Water Resources Control Board's Statewide General Phase II Small MS4 Permit may voluntarily enroll under this Order."

Porter-Cologne Water Quality Control Act

The Porter-Cologne Act is the principal law governing water quality regulation in California. It establishes a comprehensive program to protect water quality and the beneficial uses of water. The Porter-Cologne Act applies to surface waters, wetlands, and ground water and to both point and nonpoint sources of pollution. Pursuant to the Porter-Cologne Act (California Water Code section 13000 *et seq*.), the policy of the State is as follows:

- That the quality of all the waters of the State shall be protected;
- That all activities and factors affecting the quality of water shall be regulated to attain the highest water quality within reason; and
- That the State must be prepared to exercise its full power and jurisdiction to protect the quality of water in the State from degradation.

The Porter-Cologne Act established nine Regional Water Boards (based on hydrogeologic barriers) and the State Water Board, which are charged with implementing its provisions and which have primary responsibility for protecting water quality in California. The State Water Board provides program guidance and oversight, allocates funds, and reviews Regional Water Boards decisions. In addition, the State Water Board allocates rights to the use of surface water. The Regional Water Boards have primary responsibility for individual permitting, inspection, and enforcement actions within each of nine hydrologic regions. The State Water Board and Regional Water Boards have numerous NPS-related responsibilities, including monitoring and assessment, planning, financial assistance, and management.

The Regional Water Boards regulate discharges under the Porter-Cologne Act primarily through issuance of NPDES permits and waste discharge requirements (WDRs for point and nonpoint source discharges. Anyone discharging or proposing to discharge materials that could affect water quality (other than to a community sanitary sewer system regulated by an NPDES permit) must file a report of waste discharge..

The Porter-Cologne Act also implements many provisions of the Clean Water Act, such as NPDES permitting program. Section 401 of the Clean Water Act gives the State Water Board the authority to

review any proposed federally permitted or federally licensed activity that may impact water quality and to certify, condition, or deny the activity if it does not comply with State water quality standards.

The Porter-Cologne Act also requires adoption of water quality control plans (Basin plans) that contain the guiding policies of water pollution management in California. A number of statewide water quality control plans have been adopted by the State Water Board. In addition, regional water quality control plans (basin plans) have been adopted by each of the Regional Water Boards and get updated as necessary and practical. These plans identify the existing and potential beneficial uses of waters of the State and establish water quality objectives to protect these uses. The basin plans also contain implementation, surveillance, and monitoring plans. Statewide and regional water quality control plans include enforceable prohibitions against certain types of discharges, including those that may pertain to nonpoint sources. Portions of water quality control plans, the water quality objectives and beneficial use designations, are subject to review by U.S.EPA, when approved they become water quality standards under the Clean Water Act.

The California Department of Public Health

The Department of Public Health oversees the operational permitting and regulatory oversight of public water systems. DPH requires public water systems to perform routine monitoring for regulated contaminants that may be present in their drinking water supply. To meet water quality standards and comply with regulations, a water system with a contaminant exceeding an MCL must notify the public and remove the source from service or initiate a process and schedule to install treatment for removing the contaminant. Health violations occur when the contaminant amount exceeds the safety standard (MCL) or when water is not treated properly. In California, compliance is usually determined at the wellhead or the surface water intake. Monitoring violations involve failure to conduct or to report in a timely fashion the results of required monitoring.

In addition, DPH conducts water source assessments, oversees water recycling projects, permits water treatment devices, certifies water system employees, promotes water system security, and administers grants under the State Revolving Fund and state bonds for water system improvements.

California Regional Water Quality Control Board, Central Valley Region—Basin Plan

Water quality in streams and aquifers of the region is regulated by the Central Valley RWQCB Tulare Lake Basin Plan.[28] State policy for water quality control is directed at achieving the highest water quality

[28] Central Valley Regional Water Quality Control Board (Central Valley RWQCB). 2004. Revised 2015 Water Quality Control Plan for the Tulare Lake Basin, Second Edition. Basin Plan. Available: http://www.waterboards.ca.gov/centralvalley/water_issues/basin_plans/tlbp.pdf. Accessed 10/4/2012.

consistent with the maximum benefit to the people of the state. To develop water quality standards consistent with the uses of a water body, the Central Valley RWQCB classifies historical, present, and potential future beneficial uses as part of its basin plan. The Central Valley RWQCB's Basin Plan identifies the beneficial uses of the Tulare Lake Basin. Although the St. John's River is not specifically listed on the Tulare Lake Basin Plan, the Valley Floor Creeks are listed for agriculture, industrial, process water, recreation, warm water habitat, wild habitat, rare species habitat, and groundwater recharge. A detailed discussion of beneficial uses and water quality objectives can be found in the Tulare Lake Basin Plan. The Central Valley RWQCB's Basin Plan has also established the water quality objectives for dissolved oxygen in various habitats.

State Senate Bills (SB) 610 and 221—Water Supply Planning

SB 610 and SB 221 were adopted in 2001.These bill were enacted to improve the link between information on water supply availability and certain land use decision made by cities and counties. The bills require lead agencies to obtain an assessment from the local water supplier to determine the sufficiency of the water supply for proposed development over certain sizes depending on the number of dwelling units, the square footage of a proposed shopping center, commercial office, or industrial use to name a few. SB 610 applies at the time an EIR is prepared; SB 221 applies at the time a Tentative Tract Map or other related project actions are approved. The 2018 RTP/SCS is not considered a "water-demand" project subject to SB 610 (or SB 221) requirements; see *State CEQA Guidelines* section 15155(a).

Urban Water Management Planning Act

The California Urban Water Management Planning Act (Water Code Part 2.6) states that each urban water supplier that provides water to 3,000 or more customers, or that provides over 3,000 acre-feet (AF) of water annually, should make every effort to ensure the appropriate level of reliability in its water service is sufficient to meet the needs of its various categories of customers during normal, dry, and multiple dry years by preparing a urban water management plan (UWMP) and updating it every 5 years. The Urban Water Management Planning Act describes the contents of UWMPs, and requires each agency's UWMP to assess the reliability of the agency's water resources over a 20-year planning horizon.

In Tulare County, the cities of Dinuba, Exeter, Porterville, and Tulare have adopted UWMPs. The City of Visalia also has an UWMP adopted by its private water service agency (California Water Service Company).

Water Conservation Act of 2009 (Senate Bill X 7-7)

The Water Conservation Act of 2009 (SB X7-7) was signed into law in November 2009; it calls for progress towards a 20 percent reduction in per capita water use statewide by 2020. The legislation mandates each urban water retail supplier to develop and report a water use target in the retailer's UWMP. The legislation requires that retailers report an interim water use targets, their baseline daily per capita use and 2020 compliance daily per capita use, along with the basis for determining those estimates. SB X7-7 provides four possible methods for an urban retail water supplier to use to calculate its water use target. DWR has developed methodologies for calculating base daily per capita water use, baseline commercial, industrial and institutional water use, compliance daily per capita water use, gross water use, service area population, indoor residential water use, and landscape area water use. Agencies not in compliance with SB X7-7 will be ineligible for state loan and grant funding.

SB X7-7 also contains requirements for agricultural water suppliers. All agricultural water suppliers, either publicly or privately owned, which irrigate 10,000 or more acres are required by SB X7-7 to implement critical Efficient Water Management Practices (EWMPs) and additional EWMPs if locally cost effective and technically feasible.

Critical EWMPs include:

- Each agricultural water supplier is to measure the volume of water delivered to customers with sufficient accuracy to comply with standards set by DWR.
- Each agricultural water supplier is to develop a pricing structure for water customers, based at least in part on the volume of water delivered.

SB X7-7 also created the Agricultural Water Management Planning Act, which requires affected agricultural water suppliers to adopt Agricultural Water Management Plans (AWMPs). These plans facilitate management and conservation of water suppliers, and also guide and document the implementation of EWMPs.

Executive Order B-40-17

On April 7, 2017, Governor Jerry Brown issued an executive order that lifts the drought emergency in fifty-four of the fifty-eight California counties. The new Executive Order rescinds the emergency proclamations from January and April 2014, along with four drought-related executive orders. The four counties that will remain under the pre-Executive Order B-40-17 restrictions include, Fresno, Kings, Tuolumne, and Tulare counties. Drought restrictions will remain in effect in these counties as they continue to face drinking water shortages and diminished groundwater supplies.[29]

Executive Order B-40-17 builds on actions taken in Executive Order B-37-16, which remains in effect, to continue making water conservation a way of life in California:

- The State Water Resources Control Board will maintain urban water use reporting requirements and prohibitions on wasteful practices such as watering during or after rainfall, hosing off sidewalks and irrigating ornamental turf on public street medians.

- The state will continue its work to coordinate a statewide response on the unprecedented bark beetle outbreak in drought-stressed forests that has killed millions of trees across California.[30]

Assembly Bill 1881—Water Conservation in Landscaping Act

Assembly Bill (AB) 1881 built upon many past legislative acts related to landscape water use efficiency. AB 1881, the Water Conservation in Landscaping Act of 2006, enacted many landscape efficiency recommendations of the California Urban Water Conservation Council (CUWCC) for improving the efficiency of water use in new and existing urban irrigated landscapes in California. AB 1881 required DWR, not later than January 1, 2009, to update the existing Model Local Water Efficient Landscape Ordinance and local agencies to adopt the updated model ordinance or an equivalent no later than January 1, 2010. DWR has completed the update of the Model Local Water Efficiency Landscape Ordinance. The law also requires the Energy Commission to adopt performance standards and labeling requirements for landscape irrigation equipment, including irrigation controllers, moisture sensors, emission devices, and valves to reduce the wasteful, uneconomic, inefficient, or unnecessary consumption of energy or water.

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29 California Environmental Law (April 11, 2017). *New Forecast in California: An End to the Drought (For Now!) in Most Counties*, Retrieved April 24, 2018 from https://www.californiaenvironmentallawblog.com/water/new-forecast-in-california-an-end-to-the-drought-for-now-in-most-counties/

30 *Governor Brown Lifts Drought Emergency, Retains Prohibition on Wasteful Practices*. Retrieved April 24, 2018, Office of California Governor Edmund G. Brown Jr., Website: https://www.gov.ca.gov/2017/04/07/news19748/

The Model Local Water Efficient Landscape limits the water budget for new landscapes (or rehabilitated landscapes), greater than 2,500 square feet, to 70 percent of the local reference evapotranspiration (ET). The model ordinance lays out the procedures for evaluating potential landscape water use during the land development process. In addition, the ordinance contains requirements for planting as well as the design and maintenance of irrigation systems, all with the intent of limiting outdoor water use and avoiding irrigation runoff.

Assembly Bill 1420

AB 1420, passed in 2007 and in effect as of January 2009, changes the funding eligibility requirements of Section 10631 of the Water Code (Urban Water Management Planning Act). For any urban water supplier to be eligible for grant or loan funding administered by DWR, the SWRCB, or the Bay-Delta Authority (such as Propositions 50 and 84), the supplier must show implementation of the 14 water use efficiency demand management measures/best management practices (DMMS/BMPs) listed and described in the UWMP Act and the CUWCC Memorandum of Understanding, or show the schedule by which the supplier will begin implementing the DMMs/BMPs. Any supplier not implementing the measures based on cost-effectiveness must submit proof showing why the measures are not cost-effective.

Assembly Bill 2882

This bill was passed in 2008 and encourages public water agencies throughout California to adopt conservation rate structures that reward consumers who conserve water. Prior to AB 2882, state law authorized water agencies to promote conservation using rate structures; however, some agencies were concerned that such rate structures may be inconsistent with other parts of state law. AB 2882 clarifies the allocation-based rate structures, and establishes standards that protect consumers by ensuring a lower base rate for those who conserve water.

Sustainable Groundwater Management Act

In September 2014 the state passed legislation requiring that California's critical groundwater resources be sustainably managed by local agencies. The Sustainable Groundwater Management Act (SGMA) gives local agencies the power to sustainably manage groundwater and requires Groundwater Sustainability Plans (GSPs) to be developed for medium- and high-priority groundwater basins. A number of groundwater sustainability agencies (GSAs) have been established in the TCAG region. GSAs for medium- and high-priority groundwater basins in the TCAG region include:

- Kings River East Groundwater Sustainability Agency
- East Kaweah Groundwater Sustainability Agency

- Greater Kaweah Groundwater Sustainability Agency
- Mid Kaweah Groundwater Sub basin Joint Powers Authority
- Lower Tule River Irrigation District
- Eastern Tule Groundwater Sustainability Agency
- Delano-Earlimart Irrigation District
- Tri-County Water Authority
- Pixley Irrigation District
- Alpaugh Groundwater Sustainability Agency
- Alpaugh Irrigation District

Groundwater Management Act

The Groundwater Management Act of 1992 (Water Code § 10750 *et seq*.), also known as AB 3030 (Stats. 1992, ch. 947), which was SGMA's predecessor, provides guidelines for local agencies to acquire authority over the management of groundwater resources in basins recognized by DWR. Its intent is to promote the voluntary development of groundwater management plans and provide criteria for the plans in order to ensure sustainable groundwater supplies for the future. It stipulates the technical components of a groundwater management plan as well as procedures for such a plan's adoption, including passage of a formal resolution of intent to adopt a groundwater management plan, and holding a public hearing on the proposed plan. AB 3030 also allows agencies to adopt rules and regulations to implement an adopted plan, and empowers agencies to raise funds to pay for the facilities needed to manage the basin, such as extraction wells, conveyance infrastructure, recharge facilities, and testing and treatment facilities. Senate Bill (SB) 1938 (Stats. 2002, ch. 603) also requires basin management objectives and other additions to be included in local groundwater management plans to comply with California Water Code (Water Code §10750–10756). State Water Resources Board Recycled Water Policy

In 2013, the State Water Resources Board adopted its recycled water policy and adopted the following goals for the State:

- Increase the use of recycled water over 2002 levels by at least one million acre-foot per year (afy) by 2020 and by at least two million afy by 2030.
- Increase the use of stormwater over use in 2007 by at least 500,000 afy by 2020 and by at least one million afy by 2030.
- Increase the amount of water conserved in urban and industrial uses over 2007 amounts by at least 20 percent by 2020.
- Included in these goals is the substitution of as much recycled water for potable water as possible by 2030.

The purpose of this Policy is to increase the use of recycled water from municipal wastewater sources that meets the definition in Water Code section 13050(n), in a manner that implements state and federal water quality laws. The State Water Board expects to develop additional policies to encourage the use of stormwater, encourage water conservation, encourage the conjunctive use of surface and groundwater, and improve the use of local water supplies.

Regulations Related to Recycled Water

Under Code of California Regulations Title 22, the state Department of Public Health established statewide effluent bacteriological and treatment reliability standards for recycled water uses (On July 1, 2014, the state's Drinking Water Program was transferred to the SWRCB.). The standards are based on the potential for human contact with recycled water. The RWQCB has established and enforces requirements for the application and use of recycled water. Permits are required from the RWQCB for any recycling operation. Applicants for a permit are required to demonstrate that the proposed recycled water operation is in compliance with Title 22 and will not exceed the ground and surface water quality objectives in the regional basin plan.

4.13.2.3 Local

Integrated Regional Water Management (IRWM)

An Integrated Regional Water Management Plan identifies and implements water management solutions to increase regional self-reliance, reduce conflict, and manage water to concurrently achieve social, environmental, and economic objectives.[31] These principles are applied on a regional scale and support the efforts by the California Department of Water Resources to manage groundwater throughout the State. In Tulare County, the Tulare Lake Basin Water Alliance consists of three IRWM groups: Kings Basin Water Authority, Kaweah River Basin, and Tule River Basin.

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31 Tulare Lake Basin Water Alliance. Integrated Regional Water Management (IRWM). Website. https://tularelakebasin.com/alliance/index.cfm/integrated-regional-water-managment-irwm/. Accessed April 2018.

Kings Basin Water Authority

The Kings Basin Water Authority oversees IRWM planning within the Kings River Basin, a sub-basin of San Joaquin Valley groundwater basin within the Tulare HR. This includes jurisdictions such as the City of Dinuba, Kings River Conservation District, Alta Irrigation District, and Tulare County.[32]

Kaweah River Basin IRWM Plan

The Kaweah River IRWM Plan applies when there are water impacts to groundwater management, water supply, water quality, flood control, and ecosystem restoration throughout the Kaweah River Basin. The Kaweah Delta Water Conservation District, County of Tulare, Exeter Irrigation District, Lakeside Irrigation District, Tulare Irrigation District, and the cities of Visalia, Tulare, Lindsay and Farmersville are under this IRWM Plan.[33]

Tule River Basin IRWM Group

The Tule River Basin IRWMP identifies and implements water management solutions on a regional scale that increase regional self-reliance, reduce conflict, and manage water to concurrently achieve social, environmental, and economic objectives throughout the Tule River Basin. Located in the southern portion of the County, jurisdictions under this IRWM Group include Lower Tule River Irrigation District, Pixley Irrigation District, Porterville Irrigation District, Saucelito Irrigation District, Tea Pot Dome Water District, Terra Bella Irrigation District, County of Tulare, City of Porterville, Angiola Water District, and Deer Creek Storm Water District.[34]

General Plans

Tulare County General Plan

Policies from Tulare County's General Plan that relate to the water supply and hydrological impacts of the 2018 RTP/SCS include:

- **WR-1.1 Groundwater Withdrawal:** The County shall cooperate with water agencies and management agencies during land development processes to help promote an adequate, safe, and

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32 Tulare Lake Basin Water Alliance. Integrated Regional Water Management (IRWM): Kings Basin Water Authority. Website. https://tularelakebasin.com/alliance/index.cfm/integrated-regional-water-managment-irwm/kings-basin-water-authority/. Accessed April 2018.

33 Tulare Lake Basin Water Alliance. Integrated Regional Water Management (IRWM): Kaweah River Basin IRWM. Website. https://tularelakebasin.com/alliance/index.cfm/integrated-regional-water-managment-irwm/kaweah-river-basin-irwm/. Accessed April 2018.

34 Tule River IRWM. Website. http://www.tuleirwmp.com/#About. Accessed April 2018.

economically viable groundwater supply for both existing and future development within the County. These actions shall be intended to help the County mitigate the potential impact on ground water resources identified during planning and approval processes;

- **WR-1.2 Groundwater Monitoring:** The County shall support the collection of monitoring data for facilities or uses that are potential sources of groundwater pollution as part of project approvals, including residential and industrial development;

- **WR-1.3 Water Export Outside County:** The County shall regulate the permanent export of groundwater and surface water resources allocated to users within the County to cities and service providers outside the County to the extent necessary to protect the public health, safety and welfare. The County shall strive for a "no net loss" where there may be water exchanges serving a public purpose;

- **WR-1.4 Conversion of Agricultural Water Resources:** For new urban development, the County shall discourage the transfer of water used for agricultural purposes (within the prior ten years) for domestic consumption except in the following circumstances:

    - The water remaining for the agricultural operation is sufficient to maintain the land as economically viable for agricultural use,

    - The reduction in infiltration from agricultural activities as a source of recharge will not significantly impact the groundwater basin;

- **WR-1.5 Expand Use of Reclaimed Wastewater:** To augment groundwater supplies and to conserve potable water for domestic purposes, the County shall seek opportunities to expand groundwater recharge efforts;

- **WR-1.6 Expand Use of Reclaimed Water:** The County shall encourage the use of tertiary treated wastewater and household gray water for irrigation of agricultural lands, recreation and open space areas, and large landscaped areas as a means of reducing demand for groundwater resources;

- **WR-1.7 Collection of Additional Groundwater Information:** The County shall support additional studies focused on furthering the understanding of individual groundwater source areas and basins;

- **WR-1.8 Groundwater Basin Management:** The County shall take an active role in cooperating in the management of the County's groundwater resources;

- **WR-1.9 Collection of Additional Surface Water Information:** The County shall support the additional collection of water quality and flow information for the County's major drainages as part of project approvals;

- **WR-1.10 Channel Modification:** Channel modification shall be discouraged in streams and rivers where it increases the rate of flow, rate of sediment transport, erosive capacity, have adverse effect on aquatic life or modify necessary groundwater recharge;

- **WR-1.11 Groundwater Overdraft:** The County shall consult with water agencies within those areas of the County where groundwater extraction exceeds groundwater recharge, with the goal of reducing and ultimately reversing groundwater overdraft conditions in the County;

- **WR-2.1 Protect Water Quality:** All major land use and development plans shall be evaluated as to their potential to create surface and groundwater contamination hazards from point and non-point sources. The County shall confer with other appropriate agencies, as necessary, to assure adequate water quality review to prevent soil erosion; direct discharge of potentially harmful substances; ground leaching from storage of raw materials, petroleum products, or wastes; floating debris; and runoff from the site;

- **WR-2.2 National Pollutant Discharge Elimination System (NPDES) Enforcement:** The County shall continue to support the State in monitoring and enforcing provisions to control non-point source water pollution contained in the U.S. EPA NPDES program as implemented by the Water Quality Control Board;

- **WR-2.3 Best Management Practices (BMPs):** The County shall continue to require the use of feasible BMPs and other mitigation designed to protect surface water and groundwater from the adverse effects of construction activities, agricultural operations requiring County Permit, and urban runoff, in coordination with the Water Quality Control Board;

- **WR-2.4 Construction Site Sediment Control:** The County shall continue to enforce provisions to control erosion and sediment from construction sites;

- **WR-2.5 Major Drainage Management:** The County shall continue to promote protection of each individual drainage basin within the County based on the basins unique hydrologic and use characteristics;

- **WR-2.6 Degraded Water Resources:** The County shall encourage and support the identification of degraded surface water and groundwater resources and promote restoration where appropriate;

- **WR-2.7 Industrial and Agricultural Sources:** The County shall work with agricultural and industrial concerns to ensure that water contaminants and waste products are handled in a manner that protects the long-term viability of water resources in the County;

- **WR-2.8 Point Source Control:** The County shall work with the Regional Water Quality Control Board to ensure that all point source pollutants are adequately mitigated (as part of the California Environmental Quality Act review and project approval process) and monitored to ensure long-term compliance;

- **WR-2.9 Private Wells:** The County shall ensure that private wells are adequately constructed to provide protection from bacteriological and chemical contamination and do not provide a hazard as to contaminate the aquifer;

- **WR-3.1 Develop Additional Water Sources:** The County shall encourage, support, and as warranted, require the identification and development of additional water sources through the expansion of water storage reservoirs, development of groundwater banking for recharge and infiltration, and promotion of water conservation programs, and support of other projects and programs that intend to increase the water resources available to the County and reduce the individual demands of urban and agricultural users;

- **WR-3.2 Develop an Integrated Regional Water Management Plan:** The County will participate with other agencies and organizations that share water management responsibilities in the County to

enhance modeling, data collection, reporting and public outreach efforts to support the development and implementation of appropriate Integrated Regional Water Management Plans (IRWMP) within the County;

- **WR-3.3 Adequate Water Availability:** The County shall review new development proposals to ensure the intensity and timing of growth will be consistent with the availability of adequate water supplies. Projects must submit a Will-Serve letter as part of the application process, and provide evidence of adequate and sustainable water availability prior to approval of the tentative map or other urban development entitlement;

- **WR-3.4 Water Resource Planning:** The County shall continue participation in State, regional, and local water resource planning efforts affecting water resource supply and quality.

- **WR-3.5 Use of Native Drought Tolerant Landscaping:** The County shall encourage the use of low-water consuming, drought-tolerant and native landscaping, and emphasize the importance of utilizing water conserving techniques, such as night watering, mulching, and drip irrigation.

- **WR-3.6 Water Use Efficiency:** The County shall support educational programs targeted at reducing water consumption and enhancing groundwater recharge;

- **WR-3.7 Emergency Water Conservation Plan:** The County shall develop an emergency water conservation plan for County operated water systems to identify appropriate conservation policies that can be implemented during times of water shortages caused by drought, loss of one or more major sources of supply, contamination of one or more sources of supply, or other natural or man-made events;

- **WR-3.8 Educational Programs:** The County shall encourage the development of educational programs, both by water purveyors and public agencies, in order to increase public awareness of water conservation opportunities and the potential benefits of implementing conservation measures and programs including water quality.;

- **WR-3.9 Establish Critical Water Supply Areas:** The County shall designate Critical Water Supply Areas to include the specific areas used by a municipality or community for its water supply system, areas critical to groundwater recharge, and other areas possessing a vital role in the management of the water resources in the County, including those areas with degraded groundwater quality;

- **WR-3.10 Division of Surface Water:** Diversions of surface water or runoff from precipitation should be prevented where such diversions may cause a reduction in water available for groundwater recharge;

- **WR-3.11 Policy Impacts to Water Resources:** The County shall monitor actions taken at the federal and State level which impact water resources in order to evaluate the effects of these actions on the County's resources;

- **WR-3.12 Joint Water Projects with Neighboring Counties:** Tulare County will work with neighboring counties to promote development of joint water projects, such as a cross-valley canal, and other efforts to expand water supply;

- **WR-3.13 Coordination of Watershed Management on Public Land:** The County shall work cooperatively with State and federal land managers to coordinate watershed management on public land.

4.13.3 ENVIRONMENTAL IMPACTS

4.13.3.1 Thresholds of Significance

For the purposes of this PEIR, TCAG has determined that implementation of the proposed 2018 RTP/SCS would result in significant adverse impacts to water supply or hydrology if any of the following could occur (these thresholds are based on Appendix G and clarified for how they apply to the 2018 RTP/SCS):

- Violate any water quality standards or waste discharge requirements.
- Substantially deplete groundwater supplies or interfere substantially with groundwater recharge such that there would be a net deficit in aquifer volume or a lowering of the local groundwater table level
- Substantially alter the existing drainage pattern of a site or area, including through the alteration of the course of a stream or river, in a manner which would result in substantial erosion or siltation on- or off-site, or result in substantial soil erosion or loss of topsoil.
- Substantially alter the existing drainage pattern of a site or area, including through the alteration of the course of a stream or river, or substantially increase the rate or amount of surface runoff in a manner which would result in flooding on- or off-site.
- Create or contribute runoff water which would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff.
- Otherwise substantially degrade water quality.
- Place housing within a 100-year flood hazard area as mapped on a federal Flood Hazard Boundary or Flood Insurance Rate Map or other flood hazard delineation map
- Place within a 100-year flood hazard area structures which would impede or redirect flood flows;
- Expose people or structures to a significant risk of loss, injury, or death involving flooding, including flooding as a result of the failure of a levee or dam.
- Be subject to inundation by seiche, tsunami, or mudflow.
- Not have sufficient water supplies available to serve the project from existing entitlements and resources, so that new or expanded entitlements would be needed.

Impacts related to dam failure and inundation by seiche, tsunami, or mudflow are less than significant and are discussed in **Section 6.0 Other CEQA Considerations, 6.4 Less than Significant Effects**.

4.13.3.2 Methodology

The analysis assesses the impacts to water resources that could result from implementation of the 2018 RTP/SCS. For each impact, implementation of the proposed 2018 RTP/SCS is analyzed at the regional level and compared to existing conditions. Impacts are assessed in terms of both land use and transportation impacts. By 2042, implementation of the proposed 2018 RTP/SCS will result in a land use pattern and transportation network that is different from existing conditions.

Determination of Significance

The methodology for determining the significance of water-related impacts compares the existing conditions to the 2018 RTP/SCS conditions, as required by *CEQA Guidelines* Section 15126.2(a). The known water resources located within the region were evaluated using the criteria set forth by the California Department of Water Resources, FEMA, and the *CEQA Guidelines*. The analysis also includes water resources of local significance.

Generally, with regard to water-related impacts, the greater the change from existing conditions, the more noticeable the change to the environment. The construction of a new roadway generally has a greater impact on water resources than the widening of an existing one as it would result in the loss of a greater amount of permeable surface. Road widening, however, can have significant local impacts especially when requiring the removal of trees and other important landscape buffers, or when construction of noise barriers or other visual impediments is necessary.

The development of new transportation facilities and urban development cany affect water resources, either through direct effects to water sources or through indirect effects to the area surrounding a resource if toxins pollute the area's water resources. The region contains many water resources; therefore, the potential for impacts to water resources is significant. Improvements in existing developed areas and existing rights-of-way are less likely to affect existing water resources (because they already experience contaminated runoff); however, new development and new highway segments near water resources could result in a new source of pollution.

This PEIR analyzes impacts to water resources on a program level only; project-level analysis of impacts would be undertaken in project-specific environmental reviews when project-specific details are available.

4.13.3.3 Impacts and Mitigation Measures

Impact W-1 Violate any water quality standards or waste discharge requirements.

Construction activities for transportation and land use projects could involve soil disturbance, excavation, cutting/filling, stockpiling, and grading. Consequently, erosion and sedimentation could increase, affecting water quality, as well as pollutants in the water. During site grading, trenching, and other construction activities, areas of bare soil are exposed to erosive forces during rainfall events. Bare soils are much more likely to erode than vegetated areas because of the lack of dispersion, infiltration, and retention properties created by covering vegetation. The extent of impacts is dependent on soil erosion potential, type of construction practice, extent of disturbed area, timing of precipitation events, and topography and proximity to drainage channels.

Increased development has the potential to impact groundwater, both directly as a result of contaminated water infiltrating groundwater and indirectly as a result of increasing impervious surfaces and changing groundwater flows potentially result in in contaminated water being drawn into previously uncontaminated aquifers.

The proposed 2018 RTP/SCS would increase impervious surfaces in Tulare County through a combination of transportation projects and development. Substantial adverse impacts to water quality are often caused by urban runoff from increased impervious surfaces and discharges of constituents to various water bodies, including federal Clean Water Act Section 303(d)-listed waters. Runoff contaminants from projects included in the proposed 2018 RTP/SCS would include sediment, pesticides, herbicides, fertilizers, oil and grease, nutrients metals, bacteria, and trash. These contaminants are already present in County water bodies, and transportation and development projects occurring under the 2018 RTP/SCS could add to existing contaminants. Additional contributions of these contaminants to stormwater and non-stormwater runoff could further degrade the quality of receiving waters in the region, especially after a storm event. During an initial storm event, concentrated pollutants are transported via runoff to stormwater drainage systems. Contaminated runoff waters flow into the stormwater drainage systems that discharge into rivers, agricultural ditches, sloughs, and channels and ultimately degrade the water quality of all of the County's bodies of water.

Furthermore, due to population growth, discharges from point sources such as municipal wastewater treatment plants would increase. However, compliance with the NPDES permit would regulate the quality of effluent discharged from easily detected point sources of pollution. Therefore, the impact from increased discharges from point sources on water quality would be less than significant.

In order to protect water quality, the State Water Board and Central Valley RWQCB. have several permit processes for municipal stormwater and construction runoff. All projects that would disturb one acre or more are required to prepare and implement a Storm Water Pollution Prevention Plan (SWPPP), in accordance with the SWRCB's General Construction Permit. A project proponent must propose control measures consistent with the Construction General Permitt, and develop a SWPPP for each site, which includes BMPs to reduce impacts.

Further, before discharging any dewatered effluent to surface waters, project proponents are required to obtain an NPDES permit and Waste Discharge Requirement from the Central Valley RWQCB. Depending on the volume and characteristics of the discharge, coverage under the NPDES General Construction Permit may be permissible. If coverage under the NPDES Construction General Permit is not allowed, projects must conform to requirements of the General Dewatering Permit, issued by the Central Valley RWQCB.

Transportation projects where Caltrans is the lead agency are covered by the Caltrans Stormwater Program. This program regulates all stormwater discharges from Caltrans-owned conveyances, maintenance facilities, and construction activities. Caltrans also has a Storm Water Management Plan that describes the procedures and practices used to reduce or eliminate the discharge of pollutants to storm drainage systems and receiving waters.

Urban runoff impacts from transportation and land use projects would be further reduced by BMPs implemented pursuant to the municipal stormwater permitting program described in the Regulatory Framework section.

The 2018 RTP/SCS would directly increase impervious surfaces within the County; specifically the 2018 RTP/SCS would add 269.54 new lane miles to the County. The 2018 RTP/SCS would also consume approximately 8,884 acres of vacant land that would largely be converted to impervious surfaces. The addition of lane miles and urbanized land would result in the degradation of water quality. In urban areas, impacts would be reduced as there are fewer opportunities for the expansion of roadways. However, the potential still exists for degraded water quality. As discussed previously, the maintenance of water quality standards is substantially controlled by regulations of various agencies. Based on the above analysis, impacts related to violations of water quality standards or WDRs would be significant. Mitigation is required. **Mitigation Measure MM-W-1(a)** is provided below.

Level of Significance Before Mitigation

Significant.

Mitigation Measures

MM-W-1(a): Consistent with the provisions of Section 15091 of the *State CEQA Guidelines*, TCAG has identified mitigation measures capable of avoiding or reducing significant impacts on water quality related to violations of water quality standards or waste discharge requirements that are within the jurisdiction and responsibility of local agencies (land use projects) and implementing agencies (transportation projects) . Where the Lead Agency has identified that a project has the potential for significant effects, the Lead Agency can and should consider mitigation measures to ensure compliance with all applicable laws, regulations, and health and safety standards set forth by regulatory agencies responsible for regulating water quality in a manner that conforms with applicable water quality standards or waste discharge requirements, as applicable and feasible. Such measures include but are not limited to the following:

- Complete, and have approved, a SWPPP prior to initiation of construction.
- Implement BMPs to reduce the peak stormwater runoff from the project site to the maximum extent practicable.
- Comply with the Caltrans stormwater discharge permit as applicable; and identify and implement BMPs to manage site erosion, wash water runoff, and spill control.
- Ensure adequate capacity of the surrounding stormwater system to support stormwater runoff from projects.
- Install structural water quality control features, such as drainage channels, detention basins, oil and grease traps, filter systems, and vegetated buffers, to prevent pollution of adjacent water resources by polluted runoff where required by applicable urban stormwater runoff discharge permits, on new facilities.
- Provide structural stormwater runoff treatment consistent with the applicable municipal stormwater permit. Where Caltrans is the operator, the statewide permit applies.
- Provide and implement operational BMPs for street cleaning, litter control, and catch basin cleaning to prevent water quality degradation in compliance with applicable stormwater runoff discharge permits; and ensure treatment controls are in place as early as possible, such as during the acquisition process for rights-of-way, not just later during the facilities design and construction phase.
- Incorporate, as appropriate, treatment and control features such as detention basins, infiltration strips, porous paving, and other features to control surface runoff, and facilitate groundwater recharge into the design of new transportation projects early on in the process, to ensure that adequate acreage and elevation contours are provided during the right-of-way acquisition process.

- Design projects to maintain volume of runoff, where any downstream receiving water body has not been designed and maintained to accommodate the increase in flow velocity, rate, and volume without impacting the water's beneficial uses. Pre-project flow velocities, rates, and volumes should not be exceeded. This applies not only to increases in stormwater runoff from the project site, but also to hydrologic changes induced by floodplain encroachment. Projects should not cause or contribute to conditions that degrade the physical integrity or ecological function of any downstream receiving waters.

- Provide culverts and facilities that do not increase the flow velocity, rate, or volume and/or acquiring sufficient storm drain easements that accommodate an appropriately vegetated earthen drainage channel.

- Upgrade stormwater drainage facilities to accommodate any increased runoff volumes. These upgrades may include the construction of detention basins or structures that will delay peak flows and reduce flow velocities, including expansion and restoration of wetlands and riparian buffer areas. System designs shall be completed to eliminate increases in peak flow rates from current levels.

- Encourage Low Impact Development (LID) and incorporation of natural spaces that reduce, treat, infiltrate and manage stormwater runoff flows in all new developments, where practical and feasible.

Level of Significance After Mitigation

Because this PEIR evaluates impacts at the programmatic level, all project circumstances are not foreseeable and these mitigation measures may not be feasible or effective for some projects. Therefore, even with implementation of **Mitigation Measure MM-W-1(a)**, this impact remains significant and unavoidable after mitigation. No additional feasible mitigation measures are available to reduce significant and unavoidable impacts beyond those identified in this PEIR.

Impact W-2 **Substantially deplete groundwater supplies or interfere substantially with groundwater recharge such that there would be a net deficit in aquifer volume or a lowering of the local groundwater table level.**

Under natural conditions, vegetation intercepts and retains rainfall before infiltration or runoff occurs resulting in natural groundwater recharge. With a roadway or other hard surface, infiltration is impeded. Roadways and urban development greatly impede groundwater recharge as the natural areas are replaced with hard surfaces. The volume of stormwater washed off 1 acre of urbanized surface is about

16 times greater than that of a comparably sized meadow.[35] As such, an increase in roadways and urban areas would interfere with groundwater recharge.

The proposed 2018 RTP/SCS would directly result in 269.54 new lane miles through 2042. **Table 4.13-4** shows 2018 RTP/SCS new lane miles in 2042. This would include new roadway projects and the widening of existing projects**.** Roadway improvement projects which include construction of new lanes and/or expansion of existing lanes in each city and unincorporated areas of the County are discussed in **Section 3.0 Project Description**. These additions would include new facilities and additional right-of way on existing facilities. Also, approximately 8,487 acres of undeveloped land would be converted to urban land uses as a result of implementation of the proposed 2018 RTP/SCS.

Where these transportation and development projects involve installation of additional impervious surfaces, impacts to groundwater infiltration could substantially affect groundwater recharge such that there could be a net deficit in aquifer volume or lowering of the water table. In addition, increased development could result in increased demand for water and greater drawdown of existing aquifers (depending on if developed land replaces irrigated agricultural land or not, some agricultural crops use more water than developed land).

Table 4.13-4
2018 RTP/SCS Lane Miles (2042)

Lane Types	Miles
Freeway – General Purpose Lanes	33.49
Highway	45.5
Expressway	81.04
Arterial	28.03
Collector	76.24
Local	3.01
Freeway – Freeway	2.23
Total Plan New Lane Miles	**269.54**

Source: TCAG Model, GIS, 2018

Futhermore, project related dewatering activities could inadvertently deplete groundwater supplies if performed over continuous timeframes or improperly conducted. Therefore, the increase in impervious surfaces due to the additional miles of roadway, urban development associated with the development patterns for 2042, and dewatering activities would affect groundwater recharge. Thus, impacts to

35 Scheuler, T. R. (1994). The Importance of Imperviousness. *Watershed Protection Techniques 1(3)*: 100-111.

groundwater recharge such that there would be a net deficit in aquifer volume or a lowering of the local groundwater table level related to land use and transportation changes resulting from implementation of the proposed 2018 RTP/SCS are considered significant for **Impact W-2.** Mitigation is required; see **Mitigation Measure MM-W-2(a)** below.

Level of Significance Before Mitigation

Significant.

Mitigation Measures

MM-W-2(a): Consistent with the provisions of the Section 15091 of the *State CEQA Guidelines*, TCAG has identified mitigation measures capable of avoiding or reducing the significant impacts to groundwater resources that are within the jurisdiction and authority of local agencies (land use projects) and implementing agencies (transportation projects). Where the Lead Agency has identified that a project has the potential for significant effects, the Lead Agency can and should consider mitigation measures to ensure compliance with applicable laws, regulations, and health and safety standards set forth by federal, state, regional, and local authorities that regulate groundwater management, consistent with the provisions of the Sustainable Groundwater Management Act and implementing regulations, including recharge in a manner that conforms with standards for sustainable management of groundwater basins, as applicable and feasible. Such measures may include the following, or other comparable measures:

- For projects requiring continual dewatering facilities, implement monitoring systems and long-term administrative procedures to ensure proper water management that prevents degrading of surface water and minimizes, to the greatest extent possible, adverse impacts on groundwater for the life of the project, Construction designs shall comply with appropriate building codes and standard practices, including the Uniform Building Code.

- Maximize, where practical and feasible, permeable surface area in urbanized areas to protect water quality, reduce flooding, allow for groundwater recharge, and preserve wildlife habitat. .

- Avoid designs that require continual dewatering where feasible.

- Avoid construction and siting on groundwater recharge areas, to prevent conversion of those areas to impervious surface.

- Reduce hardscape and impervious surfaces to the extent feasible to facilitate groundwater recharge.

- Ensure that bioswales are installed, where feasible, to facilitate groundwater recharge using stormwater runoff from the project site.

Level of Significance After Mitigation

Because this PEIR evaluates impacts at the programmatic level, all project circumstances are not foreseeable and these mitigation measures may not be feasible or effective for some projects. Therefore, even with implementation of **Mitigation Measure MM-W-2(a)**, this impact remains significant and unavoidable after mitigation. No additional feasible mitigation measures are available to reduce significant and unavoidable impacts beyond those identified in this PEIR.

Impact W-3 **Substantially alter the existing drainage pattern of a site or area, including through the alteration of the course of a stream or river, in a manner which would result in substantial erosion or siltation on- or off-site or result in substantial soil erosion or loss of topsoil.**

Construction and earth-moving activities from transportation projects and development projects can alter existing drainage patterns, and thus such activities can be a major source of sediment loading in local waterways. There is significant potential for unprotected soil to erode as a result of stormwater runoff construction activity associated with the proposed Plan. Under the Construction General NPDES permit, prior to commencement of construction activities, a project applicant must submit a SWPPP to the SWRCB that identifies the BMPs that will be used in the planned project construction. The applicant must receive approval of the SWPPP and submit a Notice of Intent prior to initiating construction. Each individual transportation and development project will be required to implement BMPs appropriate to local conditions and to the proposed construction techniques in order to reduce stormwater runoff. There remains the potential for a significant impact with respect to altering existing drainage patterns, including through the alteration of the course of a stream or river, in a manner that could result in substantial erosion or siltation on or off site, requiring the consideration of mitigation measures. Impacts related to alteration of a drainage pattern in a manner that could result in erosion or siltation would be significant. Mitigation Measure **MM-W-1(a)** would reduce this impact.

Level of Significance Before Mitigation

Significant.

Mitigation Measures

Implement Mitigation Measure **MM-W-1(a).**

Level of Significance After Mitigation

Because this PEIR evaluates impacts at the programmatic level, all project circumstances are not foreseeable and these mitigation measures may not be feasible or effective for some projects. Therefore, even with implementation of **Mitigation Measure MM-W-1(a)**, this impact remains significant and unavoidable after mitigation. No additional feasible mitigation measures are available to reduce significant and unavoidable impacts beyond those identified in this PEIR.

Impact W-4 **Substantially alter the existing drainage pattern of a site or area, including through the alteration of the course of a stream or river, or substantially increase the rate or amount of surface runoff in a manner which would result in flooding on- or off-site.**

Transportation projects included in the 2018 RTP/SCS and development under the Plan could impact streams or rivers by placing fill material within a stream channel due to construction activities such as lane widening projects, or bridges and other new transportation facilities projects that could cross existing creeks, water crossings, rivers or be expanded into wetland areas. Natural desert conditions promote runoff that can cause flash flooding. In those areas of Tulare where soils have naturally low permeability and are subject to quick saturation, high rain volumes remain on the surface as runoff. When impervious surfaces such as highways are placed within these areas of an existing flood plain the public is exposed to the hazards of flash flooding.

Additionally, construction activities associated with transportation projects and development can be a major source of sediment loading, which could alter the existing drainage pattern of a site or area resulting in flooding. The 2018 RTP/SCS would also directly increase impervious surfaces within the County; specifically the 2018 RTP/SCS would add 269.54 new lane miles to the County. The 2018 RTP/SCS would consume approximately 8,884 acres of vacant land that would largely be converted to impervious surfaces. The addition of lane miles and urbanized land would result in the alteration of existing drainage patterns. As a result, there is the potential to substantially alter the existing drainage pattern of a site or area, including through the alteration of the course of a stream or river, and substantially increase the rate or amount of surface runoff in a manner that could result in flooding, requiring the consideration of mitigation measures. Impacts related to alteration of a drainage pattern in a manner that would result in on or flooding would be significant. Mitigation Measures **MM-W-1(a) and MM-W-2(a)** would reduce this impact.

Level of Significance Before Mitigation

Significant.

Mitigation Measures

Mitigation Measures MM-W-1(a) and **MM-W-2(a).**

Level of Significance After Mitigation

Because this PEIR evaluates impacts at the programmatic level, all project circumstances are not foreseeable and these mitigation measures may not be feasible or effective for some projects. Therefore, even with implementation of **Mitigation Measures MM-W-1(a)** and **MM-W-2(a),** this impact remains significant and unavoidable after mitigation. No additional feasible mitigation measures are available to reduce significant and unavoidable impacts beyond those identified in this PEIR.

Impact W-5: **Create or contribute runoff water that would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff.**

The 2018 RTP/SCS includes transportation projects and land use patterns that would increase impervious surfaces, which in turn would increase urban runoff, resulting in the transport of greater volumes of potentially polluted water into existing or planned stormwater drainage systems. Stormwater runoff is influenced by rainfall intensity, ground surface permeability, watershed size and shape, and physical barriers. The introduction of impermeable surfaces greatly reduces natural infiltration, allowing for a greater volume of runoff, potentially exceeding the capacity of the drainage system. In addition, in urban areas the potential for contamination by urban pollutants is much greater. Paved surfaces and drainage conduits can accelerate the velocity of runoff, concentrating peak flows in downstream areas faster than under natural conditions. Significant increases to runoff and peak flow can overwhelm drainage systems and alter flood elevations in downstream locations. Increased runoff velocity can promote scouring of existing drainage facilities, reducing system reliability and safety.

This increase has the potential to create or contribute runoff flows that would exceed the capacity of existing or planned stormwater drainage systems. Based on the above analysis, the 2018 RTP/SCS would cause significant impacts with respect to substantially creating and/or contributing runoff water that could exceed the capacity of existing and/or planned stormwater drainage systems and/or providing substantial additional sources of polluted runoff, requiring mitigation measures. Mitigation Measure **MM-W-1(a)** and **MM-W2(a)** would reduce this impact.

Level of Significance Before Mitigation

Significant.

Mitigation Measures

Mitigation Measures MM-W-1(a) and **MM-W-2(a)**

Level of Significance After Mitigation

Because this PEIR evaluates impacts at the programmatic level, all project circumstances are not foreseeable and these mitigation measures may not be feasible or effective for some projects. Therefore, even with implementation of **Mitigation Measures MM-W-1(a)** and **MM-W-2(a)**, this impact remains significant and unavoidable after mitigation. No additional feasible mitigation measures are available to reduce significant and unavoidable impacts beyond those identified in this PEIR.

Impact W-6 Otherwise substantially degrade water quality.

See Impact W-1. The 2018 RTP/SCS could result in significant impacts to water quality. As described above, due to population growth, discharges from point sources such as municipal wastewater treatment plants would increase. However, compliance with NPDES regulations would address the quality of effluent discharged from easily detected point sources of pollution. The Plan's transportation projects and new growth in urbanized areas would increase impervious areas. The runoff from these new impervious areas would contribute to local water impairments by degrading the water quality of the receiving waters, both in the short-term (during project construction) and in the long-term (during the project's operation). The 2018 RTP/SCS would have a significant impact as a result of substantially degrading water quality as a result of a variety of pollution sources related to increased urbanization, requiring the consideration of mitigation measures. **Mitigation Measures MM-W-1(a)** and **MM-W-2(a)** would reduce this impact.

Level of Significance Before Mitigation

Significant.

Mitigation Measures

Mitigation Measures MM-W-1(a) and **MM-W-2(a).**

Level of Significance After Mitigation

Because this PEIR evaluates impacts at the programmatic level, all project circumstances are not foreseeable and these mitigation measures may not be feasible or effective for some projects. Therefore, even with implementation of **Mitigation Measures MM-W-1(a)** and **MM-2(a),** this impact remains significant and unavoidable after mitigation. No additional feasible mitigation measures are available to reduce significant and unavoidable impacts beyond those identified in this PEIR.

Impact W-7 **Place housing within a 100-year flood hazard area as mapped on a federal Flood Hazard Boundary or Flood Insurance Rate Map or other flood hazard delineation map.**

Impact W-8 **Place within a 100-year flood hazard area structures which would impede or redirect flood flows.**

The proposed 2018 RTP/SCS would include the construction of an additional 37,246 housing units by 2042 and substantial additional transportation infrastructure.

While the majority of growth would take place outside of the 100-year flood zones, some new housing could occur within such flood zones, including within the City of Visalia. -The proposed 2018 RTP/SCS would increase the amount of housing in the 100-year flood hazard areas, but state regulations, in combination with local ordinances and federal regulations, as well as ongoing improvements to flood protection infrastructure, would likely mitigate the risk associated with housing in these areas. Further, individual project sponsors are required by state and federal regulations to obtain necessary approvals for construction within designated floodplains.

Some transportation projects included in the proposed 2018 RTP/SCS would occur within the 100-year flood hazard area, thus increasing the potential to obstruct or exacerbate floodwaters. The construction of projects involving support structures in the floodway could obstruct floodwaters at some locations. Placement of structures within a floodplain can displace floodwaters and alter the base flood elevations in the surrounding areas. Structures can form a backwater effect, resulting in an increase in the flood elevation level upstream and in neighboring areas. Likewise, floodwater can cause scour effects, resulting in erosion and sedimentation problems downstream from structures. Drainage areas could be altered by highway corridors, in which floodwaters could be detained by medians and along the roadside. Proposed bridge supports could block debris in waterways, creating obstructions and further elevating upstream flood levels.

Based on the above analysis,, the impacts associated with land use changes and transportation projects from the implementation of the proposed 2018 RTP/SCS are considered less than significant for **Impact W-7** and significant for **Impact W-8**. Mitigation is required

Level of Significance Before Mitigation

Significant for **Impact W-8**; less than significant for **Impact W-7**.

Mitigation Measures

MM-W-8(a): Consistent with the provisions of Section 15091 of the *State CEQA Guidelines*, TCAG has identified mitigation measures capable of avoiding or reducing the significant impacts of locating structures that would impede or redirect flood flows in a 100-year flood hazard area that are within the jurisdiction and authority of implementing agencies (transportation projects) . Where the Lead Agency has identified that a project has the potential for significant effects, the Lead Agency can and should consider mitigation measures to minimize the impacts of placing structures in floodplains. Such measures include but are not limited to the following:

- Comply with Executive Order 11988 on Floodplain Management, which requires avoidance of incompatible floodplain development, and restoration and preservation of the natural and beneficial floodplain values.

- Ensure that all roadbeds for new highway and rail facilities be elevated at least one foot above the 100-year base flood elevation. Since alluvial fan flooding is not often identified on FEMA flood maps, the risk of alluvial fan flooding should also be evaluated and projects should be sited to avoid alluvial fan flooding. Delineation of floodplains and alluvial fan boundaries should attempt to account for future hydrologic changes caused by global climate change

Level of Significance After Mitigation

Because this PEIR evaluates impacts at the programmatic level, all project circumstances are not foreseeable and these mitigation measures may not be feasible or effective for some projects. Therefore, even with implementation of **Mitigation Measure MM-W-8(a),** impacts with respect to impeding or redirecting 100-year flood flows are considered to be significant and unavoidable. No additional feasible mitigation measures are available to reduce significant and unavoidable impacts beyond those identified in this PEIR. Impacts with respect to placing housing within a 100-year flood zone or other delineated flood hazard area are less than significant.

Impact W-9 **Not have sufficient water supplies available to serve the project from existing entitlements and resources, so that new or expanded entitlements would be needed.**

This impact concerns impacts to water demand as a result of the proposed 2018 RTP/SCS. Water agencies that either provide over 3,000 acre-feet of water annually or serve more than 3,000 or more connections in the State of California (including water providers in Tulare County) are required to submit Urban Water Management Plans (UWMPs) to the California Department of Water Resources every five years. Urban water management plans include an estimation of water usage across all sources (commercial, residential, agricultural etc.). Most urban water management plans do not plan for water demand to 2042; therefore, estimates of supply and demand in this PEIR are considered approximate.

As discussed in the Environmental Setting above, the largest water usage in Tulare County is for agricultural resources. Agricultural demand was estimated from a total irrigated acreage of 694,500 acres and an average consumptive water use of 2.96 acre-foot per acre per year and is shown in **Table 4.13-2**. Although historically the trend of agricultural water use has been decreasing, for purposes of the 2018 RTP/SCS analysis, future agricultural water demands are conservatively assumed to stay the same. However, by 2042, with the 2018 RTP/SCS, agricultural land would be reduced by 8,884 acres, which would reduce the overall water demand from agricultural lands. Other factors such as crop type, climate, and availability of water would also impact demand from the agricultural sector.

The projected population in Tulare County is projected to increase by approximately 37,435 households, which would increase total water consumption by approximately 11,066 afy; commercial and industrial uses are also expected to increase and likely increase demand for water also. Transportation uses result in minor uses of water for landscaping and restrooms.

As shown in **Table 4.13-5**, water consumption is estimated to decline on a per capita basis from 333.9 daily gallons per household to 264 daily gallons per household. As discussed above, water service providers have not identified water supplies through 2042 in their plans.

Table 4.13-5
Existing and Future Daily Household Water Use

	Existing	No Project 2042	2018 RTP/SCS 2042
Per Household Water Consumption (gallons/ day)	333.9	293.0	264.0

Note: water use is calculated based on the number of single family and multi-family residential units
Source: TCAG 2018 Envision Tomorrow

Other sources of water demand include industrial uses, oil and gas facilities,and renewable energy facilities) Insufficient data currently is available to make such an estimate future water demands from these uses. While there would be an increase among these sectors, due to various state and federal programs, increasing awareness of drought conditions, and water restrictions, it is assumed that each of these areas would become more efficient in water usage.

Reduction in water supply, as well as uncertainty in the reliability of that supply, could result from increased temperatures and changes in precipitation patterns due to global climate change, as well as regulatory and/or legislative decisions that affect the availability of imported water. Many County agencies and across the State are implementing aggressive water conservation, recycling and planning strategies (water transfer and water banking) to reduce demand and even out supply in wet and dry years.

Meeting future water demand is ultimately the responsibility of local and regional water agencies. Water supplies are either produced locally from groundwater and surface water sources or are imported via the California Aqueduct and the Friant-Kern Canal. Other means of providing water without increasing imported supplies include reclamation and recycling (including meeting the SWRCB recycled water goals), conservation, water transfers, groundwater banking, and developing brackish groundwater.

Each water agency develops its own policy for determining its planning horizon and for acquiring and building water facilities. Further, water agencies provide water for the growth planned and authorized by the appropriate land use authority. If water agencies can supply the water necessary to meet future demand and/or minimize that demand, impacts would be less than significant. However, given the challenges of maintaining reliable imported water supplies and reducing groundwater depletion under SGMA, and the uncertainly of water supplies in general, meeting future demand would likely be difficult. New water supply entitlements and facilities may be needed to meet future demands. These new entitlements and facilities could result in significant new impacts as a result of construction and

operation. Therefore, water supply impacts related to land use and transportation changes from implementation of the proposed 2018 RTP/SCS are considered significant for **Impact W-9** because water supplies may not be available to serve from existing entitlements and resources, so new or expanded entitlements would be needed**.** Mitigation is required. **Mitigation Measures MM-W-2(a)** and **MM-W-9(a)** would reduce this impact.

Level of Significance Before Mitigation

Significant.

Mitigation Measures

Implement **Mitigation Measure MM-W-2(a).**

MM-W-9(a): Consistent with the provisions of Section 15091 of the *State CEQA Guidelines*, TCAG has identified mitigation measures capable of avoiding or reducing the significant impacts on water supplies from existing entitlements and resources requiring new or expanded services that are in the jurisdiction and responsibility of local agencies (land use projects) and implementing agencies (transportation projects).. Where the Lead Agency has identified that a project has the potential for significant effects, the Lead Agency can and should consider mitigation measures to minimize water demands and increase water supplies, ensuring compliance with prevailing state, regional, and local government plans, laws, and policies regarding water conservation and efficiency.. Such measures include but are not limited to the following:

- Reduce exterior consumptive uses of water in public areas, and promote reductions in private homes and businesses, by shifting to drought-tolerant native landscape plantings (xeriscaping), using weather-based irrigation systems, educating other public agencies about water use, and installing related water pricing incentives.
- Use drought-resistant landscaping options where applicable and feasible and provide information on where these can be purchased.
- Use reclaimed water, especially in median landscaping and hillside landscaping, should be implemented where feasible.
- Install drip or other water-conserving or weather-based irrigation systems for landscaping.
- Implement water conservation best practices such as low-flow toilets, water-efficient clothes washers, water system audits, and leak detection and repair.

Level of Significance After Mitigation

Because this PEIR evaluates impacts at the programmatic level, all project circumstances are not foreseeable and these mitigation measures may not be feasible or effective for some projects. Therefore, even with implementation of **Mitigation Measures MM-W-2(s)** and **MM-W-8(a)**, impacts could remain significant and unavoidable. No additional feasible mitigation measures are available to reduce significant and unavoidable impacts beyond those identified in this PEIR.

4.13.4 CUMULATIVE EFFECTS

The 2018 RTP/SCS is a cumulative plan by design that integrates transportation investments with land use strategies for an entire region. As such, the analysis of water quality, hydrology, and water supply impacts presented above is inherently a cumulative analysis compliant with the requirements of CEQA. However, the 2018 RTP/SCS would contribute to impacts beyond Tulare County. The cumulative analysis impact area for water quality, hydrology, and water supply impacts consists of Tulare County with respect to local water resources and the State with respect to statewide resources.

Within the cumulative analysis impact area, implementation of the 2018 RTP/SCS combined with cumulative development outside the region has the potential to result in water quality, hydrology, and water supply impacts occurring outside Tulare County, which would be considered a significant cumulative impact. As discussed above, implementation of the 2018 RTP/SCS would have significant impacts related to water quality, hydrology, and water supply. The 2018 RTP/SCS significant impacts would add to similar impacts from RTP/SCS plans in adjacent jurisdictions.

The 2018 RTP/SCS impacts would be significant. Implementation of the mitigation measures described in this section would reduce the impacts of the 2018 RTP/SCS however, impacts would remain significant.

5.0 ALTERNATIVES

This chapter sets forth alternatives to the 2018 RTP/SCS and provides an analysis of each alternative and a comparison of each alternative 's impacts to the proposed Project's impacts. Key provisions of the *State CEQA Guidelines* Section 15126.6 pertaining to an EIR alternatives analysis are summarized below.

- An EIR shall describe a range of reasonable alternatives to the project, or the location of the project, which would feasibly attain most of the basic objectives of the project but would avoid or substantially lessen any of the significant effects of the project, and evaluate the comparative merits of the alternatives.

- An EIR need not consider any conceivable alternative to a project. Rather, it must consider a reasonable range of potentially feasible alternatives that will foster informed decision-making and public participation. An EIR is not required to consider alternatives which are infeasible.

- Because an EIR must identify ways to mitigate or avoid the significant effects that a project may have on the environment, the discussion of alternatives shall focus on alternatives to the project or its location which are capable of avoiding or substantially lessening any significant effects of the project, even if these alternatives would impede to some degree the attainment of the project objectives, or would be more costly.

- The range of alternatives required in an EIR is governed by a "rule of reason" That requires the EIR to set forth only those alternatives necessary to permit a reasoned choice.

- The No Project Alternative should be evaluated along with its impacts to allow decision makers to compare the impacts of approving the proposed project with the impacts of not approving the proposed project. The No Project Alternative analysis shall discuss the existing conditions at the time the notice of preparation is published, as well as what would reasonably be expected to occur in the foreseeable future if the project were not approved, based on current plans and consistent with available infrastructure and community services.

- An EIR need not consider an alternative whose effects cannot be reasonably ascertained and whose implementation is remote and speculative.

Among the factors that may be taken into account when addressing the feasibility of alternatives (as described in *State CEQA Guidelines* Section 15126.6[f][1]) are environmental impacts, site suitability, economic viability, availability of infrastructure, general plan consistency, regulatory limitations, and jurisdictional boundaries.

An EIR must briefly describe the rationale for selection and rejection of alternatives. The lead agency may make an initial determination as to which alternatives are feasible, and, therefore, merit in-depth consideration. Alternatives may be eliminated from detailed consideration in the EIR if they fail to meet project objectives, are infeasible, or do not avoid any significant environmental effects.

5.1 PROJECT IMPACTS AND OBJECTIVES

5.1.1 Project Impacts

As described in **Section 4.0** of this PEIR, implementation of the 2018 RTP/SCS would result in significant and unavoidable impacts to the following:

Aesthetics: Implementation of the 2018 RTP/SCS would have a substantial adverse effect on a scenic vista (Impact AES-1) and would impair views of scenic resources such as mountains, rivers or significant manmade structures as seen from existing transportation facilities or other key public vantage points in Tulare County and alter the appearance of designated scenic resources along or near a state or County designated scenic highway or vista point (Impact AES-2). In addition, construction and implementation of the projects associated with the 2018 RTP/SCS could create significant contrasts with the visual character of the existing landscape setting (Impact AES-3), as well as create a new source of substantial light or glare, which could affect day or nighttime views (Impact AES-4). The 2018 RTP/SCS's contribution to such impacts would also be cumulatively considerable.

Agricultural Resources: Implementation of the projects and land use strategies in the 2018 RTP/SCS would result in the conversion of prime, unique farmland or farmland of statewide importance to non-agricultural uses, either directly (Impact AG-1) or through other changes in the existing environment (impact AG-4). Additionally, the iimplementation of the projects and land use strategies in the 2018 RTP/SCS would result in development of agricultural lands (with active Williamson Act contracts) (Impact AG-2), and impact forest lands (Impact AG-3) The 2018 RTP/SCS's contribution to such impacts would also be cumulatively considerable.

Air Quality: Implementation of the 2018 RTP/SCS would result in a substantial increase in short-term emissions of criteria pollutants (construction of transportation and land use projects and) (Impact AIR-1), as well as an increase (greater than current emission levels) in projected long-term emissions of toxic air contaminants (diesel particulate matter from heavy duty trucks and other emissions from industrial activities);localized concentrations of toxic air contaminants at sensitive receptors (short term and long term) could be greater than existing conditions. (Impact AIR-2). The 2018 RTP/SCS's contribution to such impacts would also be cumulatively considerable.

Biological Resources: Implementation of the 2018 RTP/SCS would have a substantial adverse effect on sensitive and special status wildlife and plant species (Impact BIO-1). It would also have a substantial adverse effect on riparian habitat and other sensitive natural communities (Impact BIO-2), and on federally-protected wetlands (Impact BIO-3), as well as on wildlife migration and migratory corridors (Impact BIO-4). Additionally, implementation of the 2018 RTP/SCS would conflict with local plans,

policies, (Impact BIO-5), and provisions of an HCP or NCCP (Impact BIO-6). The 2018 RTP/SCS's contribution to such impacts would also be cumulatively considerable.

Cultural Resources: The Plan would result in the consumption of 8,884 acres of vacant land and focuses much of the growth in urban areas. The focused growth in urban areas could lead to significant impacts on historic structures (Impact CR-1). The consumption of undeveloped land would result in a significant risk of uncovering previously undisturbed archeological (Impact CR-2) and paleontological resources (Impact CR-3) resources, as well as human remains (Impact CR-4) and tribal cultural resources (Impacts TCR-1 and TCR-2). The 2018 RTP/SCS's contribution to such impacts would also be cumulatively considerable.

Greenhouse Gas Emissions: Implementation of the 2018 RTP/SCS would directly and indirectly causes increases in GHG emissions over existing levels (Impact GHG-1), and would conflict with the State's ability to achieve emission reductions targets set by SB 32 and EO-S-3-05 (Impact GHG-2). The 2018 RTP/SCS's contribution to such impacts would also be cumulatively considerable. .

Land Use: Implementation of the projects and land use pattern in the 2018 RTP/SCS could result in inconsistencies with currently applicable adopted local land use plans and policies including general plans, specific plans, or zoning ordinances Impact LU-1). Projects associated with the Plan have the potential to disrupt or divide established communities (Impact LU-2) and conflict with HCPs or NCCPs (Impact LU-3). The 2018 RTP/SCS's contribution to such impacts would also be cumulatively considerable.

Noise: Projects associated with the Plan could expose persons or generate noise in levels in excess of standards established in the local general plan or noise ordinance (Impact NOISE-1), result in substantial temporary or periodic increases in ambient noise levels above existing levels (Impact NOISE-2), or result in a substantial permanent increase in ambient noise levels (Impact NOISE-3). The Plan also would expose people to or generate excessive groundborne vibration (Impact NOISE-4). The 2018 RTP/SCS's contribution to such impacts would also be cumulatively considerable.

Population, Housing and Employment: The transportation investments and land use patterns in the 2018 RTP/SCS would foster economic and household growth and would remove some obstacles to growth in some parts of the region (Impact POP-1). The 2018 RTP/SCS would also require the acquisition of rights-of-way that could displace existing homes or businesses (Impact POP-2). The 2018 RTP/SCS's contribution to such impacts would also be cumulatively considerable.

Public Services: Existing parks and recreational facilities and services would become overextended due to projected growth during the lifetime of the 2018 RTP/SCS resulting in substantial physical

deterioration (Impact REC-2). The 2018 RTP/SCS's contribution to such impacts would also be cumulatively considerable.

Transportation: Implementation of projects included in the 2018 RTP/SCS would substantially increase total daily VMT in 2042 compared to current daily VMT (Impact TR-1). The 2018 RTP/SCS would increase congestion, and thus the 2018 RTP/SCS has the potential to conflict with the CMP (Impact TR-2). The 2018 RTP/SCS's contribution to such impacts would also be cumulatively considerable.

Utilities:

- Energy: The 2018 RTP/SCS would result in the use of substantial amounts of electricity and natural gas, thereby requiring the construction of new facilities and new sources of energy or major improvements to local infrastructure (Impact ENERGY-2). The 2018 RTP/SCS's contribution to such impacts would also be cumulatively considerable.

- Wastewater: Implementation of the 2018 RTP/SCS would increase population which could result in exceeding the capacity of the existing wastewater treatment systems resulting in the need for new or expanded infrastructure (Impacts WW-2 and WW-3). The 2018 RTP/SCS's contribution to such impacts would also be cumulatively considerable.

- Solid waste: Implementation of the 2018 RTP/SCS could result in an increase in the amount of solid waste that could exceed the region's available landfill capacity to handle and dispose of the waste (Impact SW-2). The 2018 RTP/SCS's contribution to such impacts would also be cumulatively considerable.

Water Supply and Hydrology: Implementation of the 2018 RTP/SCS would degrade local surface water quality due to increased runoff from transportation and development projects, potentially resulting in violations of water quality standards or waste discharge requirements (Impact W-1). New development could substantially deplete existing groundwater supplies, and increased impervious surfaces would reduce groundwater infiltration, reducing recharge and potentially affecting aquifer volume (Impact W-2). The Plan would contribute to the conversion of undeveloped land to urban areas, substantially altering drainage patterns, including potentially altering stream courses such that substantial erosion or siltation could occur (Impact W-3). Substantially alterations of existing drainage patterns, including alteration of the course of a stream or river, could result in flooding (Impact W-4). Also, the 2018 RTP/SCS would create or contribute substantial runoff water that could exceed the capacity of existing or planned stormwater drainage systems; in addition, this runoff could include substantial pollution (Impact W-5). The 2018 RTP/SCS could otherwise degrade water quality as a result of a variety of activities including agricultural, industrial and urban runoff (Impact W-6). A portion of the transportation projects and land use developments under the 2018 RTP/SCS could take place within 100-year flood hazard areas; therefore the 2018 RTP/SCS could result in housing being placed within a 100-year flood hazard area (Impact W-7) or result other structures that could impede or redirect flows (Impact

W-8). In addition, the increased urbanization would contribute to an increased demand for water supply, requiring new or expanded entitlements (Impact W-9). The 2018 RTP/SCS's contribution to such water supply and hydrology impacts would also be cumulatively considerable.

5.1.2 Project Objectives

The objectives of the 2018 RTP/SCS are as follows:[1]

- Provide an efficient, integrated, multi-modal transportation system for the movement of people and goods that enhances the physical, economic, and social environment in the Tulare county region
- System Performance: Develop an efficient, maintained, and safe circulation network that maximizes circulation, longevity, and fiscal responsibility while minimizing environmental impacts.
- Transit: Provide a safe, secure, coordinated and efficient public transit system that can reasonably meet the needs of residents.
- Aviation: Support development of a regional system of airports that meets the air commerce and general aviation needs of the county.
- Rail: Promote safe, economical, convenient rail systems and schedules that meet the needs of passenger and freight services in the region.
- Goods Movement: Provide a transportation system that efficiently and effectively transports goods to, from, within, and through Tulare County.
- Active Transportation: Improve, enhance, and expand the region's bicycle and pedestrian systems and connectivity to those systems, while keeping them safe and convenient.
- Regional Roads and Corridors: Preserve and enhance regional transportation roads and corridors.
- Air Quality and Greenhouse Gases: Promote the improvement of air quality and GHG reductions through congestion management, coordination of land use, housing, and transportation systems, provision of alternative modes of transportation, and provision of incentives that reduce vehicle miles traveled.
- Public Health: Promote public health in the region by providing opportunities for residents to bicycle and walk to destinations such as home, work, school, medical facilities, and commercial and service businesses.
- TSM Strategies, TDM Measures, TCMS, and ITS Programs: Improve transportation mobility and operations by improving and utilizing TSM strategies, TDM measures, TCMS and ITS programs.
- Environmental Justice: Ensure that transportation investments do not discriminate on the basis of race, color, national origin, sex, age or disability.

[1] TCAG 2018 RTP/SCS Goals and Objectives

- Emerging Technologies: Support the development and implementation of emerging technologies in the surface transportation system.
- SCS: Develop an integrated land use plan that meets CARB targets.

A feasible alternative must meet most of the basic project objectives.

5.2 ALTERNATIVES TO THE PROPOSED PROJECT

The *State CEQA Guidelines* state that an EIR should identify any alternatives that were considered by the lead agency but were rejected as infeasible during the scoping process and briefly explain the reasons underlying the lead agency's determination. Among the factors that may be used to eliminate alternatives from detailed consideration in an EIR are (i) failure to meet most of the basic project objectives, (ii), infeasibility, or (iii) inability to avoid significant environmental impacts. (*State CEQA Guidelines* Section 15126.6(a)(c).) For this EIR, there were no alternatives that were considered by TCAG and rejected as infeasible during the scoping process.

5.2.1 Alternative 1 – No Project

The No Project Alternative is required by Section 15126.6(e)(2) of the *State CEQA Guidelines* and assumes that the 2018 RTP/SCS would not be implemented. The No Project Alternative allows decision-makers to compare the impacts of approving the proposed Project with the impacts of not approving the proposed Project. However, "no project" does not mean no development. The No Project Alternative includes "what would be reasonably expected to occur if the Project were not approved, based on current plans and consistent with available infrastructure and community services."[2] For purposes of this PEIR, the No Project Alternative includes only those transportation projects that are included in the first year of the constrained project list included in the 2014 RTP/SCS and/or transportation improvement program (TIP), or have completed environmental review by January 2018. The growth scenario included in the No Project Alternative is based on local general plans and assumes a land use pattern that is more dispersed than the Blueprint (or the Old Plan) along the lines of past trends.

5.2.2 Alternative 2 –Trend Alternative

The Trend Alternative includes a land use forecast based on designations from existing local agency general plans and linear trends in growth on a sub-regional basis. This means that the projected pattern of development will be generally consistent with the development pattern seen currently. (Local general plans now include policies that will move away from the Trend Alternative to some extent -- away from a

2 *State CEQA Guidelines* § 15126.6[e][2]

pure extrapolation of current development types and densities. This is especially true of the most recently updated plans (Porterville, 2007; Tulare County, 2012; Tulare, Visalia, 2014).) This alternative includes a modified transportation network with fewer investments (no new transit) as compared to the 2018 RTP/SCS and greater focus on maintenance of the existing network.

5.2.3 Alternative 3 – Old Plan Alternative

The Old Plan Alternative is a second type of "no project alternative," based on implementation of the current 2014 RTP. The Old Plan Alternative is an update of the adopted 2014 RTP reflecting the most recent growth distribution and transportation planning decisions and assumptions, extrapolated from the 2040 horizon year in the 2014 RTP/SCS out to 2042, the horizon year of the 2018 RTP/SCS. This Old Plan alternative includes many of the same development pattern strategies included within the 2018 SCS, and includes all of the transportation projects in the 2014 RTP.

5.2.4 Alternative 4 – Blueprint Plus

The Blueprint Plus Alternative was requested by the RTP Roundtable[3] in 2013 to explore the ramifications of a change in future development patterns more pronounced than that envisioned by the Regional Blueprint. Blueprint Plus has an objective of overall density of new development five percent higher than Blueprint and a maximum feasible emphasis on transit and active transportation modes.

5.2.5 Summary Comparison

A summary comparison of impacts of the 2018 RTP/SCS and alternatives is included in **Table 5.0-1, Comparison of Impact Significance – Plan vs. Alternatives**. Please note that this table and the following text compare all impacts of the 2018 RTP/SCS analyzed in Chapter 4 to impacts of the alternatives, including less than significant Plan impacts. This table does not separately compare cumulative impacts of the 2018 RTP/SCS and alternatives, but the alternatives would have similar incremental contributions to cumulative impacts (i.e., less, similar, or greater).

3 The RTP Roundtable Committee includes a range of important stakeholders who guide the RTP process and made recommendations to the TCAG Governing Board with respect to RTP/SCS policies and ultimately the preferred Blueprint Scenario.

Table 5.0-1
Comparison of Impact Significance – Plan vs. Alternatives

Impact	Project Impact	Alternative 1 – No Project Alternative	Alternative 2 – Trend Alternative	Alternative 3 – Old Plan	Alternative 4 – Blueprint Plus
Aesthetics					
AES -1 Scenic Vistas	Significant	Greater (significant)	Less (significant)	Similar (significant)	Similar (significant)
AES-2 Scenic Resources	Significant	Greater (significant)	Less (significant)	Similar (significant)	Similar (significant)
AES-3 Visual Character	Significant	Greater (significant)	Greater (significant)	Greater (significant)	Greater (significant)
AES-4 Light and Glare	Significant	Greater (significant)	Less (significant)	Greater (significant)	Similar (significant)
Agriculture and Forest Lands					
AG-1 Convert Farmland	Significant	Greater (significant)	Greater (significant)	Less (significant)	Less (significant)
AG-2 Conflict with Land Use/Williamson Act	Significant	Greater (significant)	Less (significant)	Similar (significant)	Less (significant)
AG-3 Convert Forest land	Significant	Greater (less than significant)	Similar (less than significant)	Similar (less than significant	Less (significant)
AG-4 Changes in Environment Convert Farmland	Significant	Greater (significant)	Greater (significant)	Greater (significant)	Less (significant)
Air Quality					
AIR-1 Long Term Criteria Pollutants	Less than Significant	Greater (Less than Significant)	Greater (Less than Significant)	Greater (Less than Significant)	Greater (less than significant)
AIR-1 Short Term Criteria Pollutants	Significant	Less (significant)	Less (significant)	Less (significant)	Similar (significant)
AIR-2 Long Term Regional Air Toxics	Significant	Similar (significant)	Less (significant)	Greater (significant)	Similar (significant)
AIR-2 Short Term Air Toxics	Significant	Less (significant)	Less (significant)	Less (significant)	Similar (significant)
AIR-3 Consistent with Air Quality Plans	Less than Significant	Similar (less than significant)	Similar (less than significant)	Similar (less than significant)	Similar (less than significant)
Biological Resources					
BIO-1 Sensitive Species	Significant	Greater (significant)	Greater (significant)	Similar (significant)	Similar (significant)
BIO-2 Riparian Communities	Significant	Greater (significant)	Greater (significant)	Similar (significant)	Less (significant)
BIO-3 Wetlands	Significant	Greater (significant)	Greater (significant)	Similar (significant)	Less (significant)
BIO-4 Migratory Species	Significant	Similar (significant)	Greater (significant)	Similar (significant)	Similar (significant)
BIO-5 Local policies	Significant	Greater (significant)	Greater (significant)	Similar (significant)	Similar (significant)
BIO-6 HCPs	Significant	Greater (significant)	Greater (significant)	Similar (significant)	Less (significant)
Cultural Resources					
CR-1 Historical Resources	Significant	Less (significant)	Less (significant)	Less (significant)	Greater (significant)

Impact	Project Impact	Alternative 1 – No Project Alternative	Alternative 2 – Trend Alternative	Alternative 3 – Old Plan	Alternative 4 – Blueprint Plus
CR-2 Archeological Resources	Significant	Greater (significant)	Greater (significant)	Greater (significant)	Less (significant)
CR-3 Paleontological Resources	Significant	Greater (significant)	Greater (significant)	Greater (significant)	Less (significant)
CR-4 Disturb Human Remains	Significant	Greater (significant)	Greater (significant)	Greater (significant)	Less (significant)
TCR1/TCR-2 Tribal Cultural Resources	Significant	Greater (significant)	Greater (significant)	Greater (significant)	Less (significant)
Greenhouse Gas Emissions					
GHG-1 Significantly Increase GHG Emissions	Significant	Greater (significant)	Greater (significant)	Greater (significant)	Less (significant)
GHG-2 Conflict with Applicable Plans, Policies, and Regulations	Significant	Greater (significant)	Greater (significant)	Greater (significant)	Less (significant)
Land Use					
LU-1 Conflict with Plans	Significant	Less (significant)	Greater (significant)	Similar (significant)	Greater (significant)
LU-2 Divide a Community	Significant	Less (significant)	Greater (significant)	Similar (significant)	Similar (significant)
LU-3 Conflict with HCPs (BIO-6)	Significant	Greater (significant)	Greater (significant)	Similar (significant)	Less (significant)
Noise					
NOISE -1 Expose Persons to Noise Levels in Excess of Established Standards	Significant	Similar (significant)	Similar (significant)	Similar (significant)	Greater (significant)
NOISE-2 Substantial Temporary or Periodic Increase in Noise	Significant	Less (significant)	Less (significant)	Less (significant)	Greater (significant)
NOISE-3 Substantial Permanent Increase in Noise	Significant	Similar (significant)	Similar (significant)	Similar (significant)	Greater (significant)
NOISE-4 Groundborne Noise and Vibration	Significant	Similar (significant)	Similar (significant)	Similar (significant)	Greater (significant)
NOISE-5/NOISE-6 Airport Noise	Less than Significant	Similar (less than significant)	Similar (less than significant)	Similar (less than significant)	Similar (less than significant)
Population, Housing, and Employment					
POP-1 Induce Population Growth	Significant	Greater (significant)	Greater (significant)	Similar (significant)	Greater (significant)
POP-2 Displacement	Significant	Greater (significant)	Greater (significant)	Similar (significant)	Greater (significant)
Public Services – Fire & Police					
FIRE_1 Construction of New Facilities	Less than Significant	Similar (less significant)	Similar (less than significant)	Similar (less than significant)	Greater (less than significant)
POLICE-1 Construction of New Facilities	Less than Significant	Similar (less significant)	Similar (less than significant)	Similar (less than significant)	Greater (less than significant)
EDU-1 Construction of New Facilities	Less than Significant	Similar (less significant)	Similar (less than significant)	Similar (less than significant)	Similar (less than significant)
REC-1 Construction of New Facilities	Less than Significant	Similar (less significant)	Similar (less than significant)	Similar (less than significant)	Less (less than significant)
REC-2 Deterioration of Facilities	Significant	Less (significant)	Less (significant)	Similar (less than significant)	Greater (less than significant)

Impact	Project Impact	Alternative 1 – No Project Alternative	Alternative 2 – Trend Alternative	Alternative 3 – Old Plan	Alternative 4 – Blueprint Plus
Transportation and Traffic					
TR-1 Substantial Increase in VMT	Significant	Greater (significant)	Greater (significant)	Greater (significant)	Less (significant)
TR-2Conflict with CMP	Significant	Less (significant)	Similar (significant)	Greater (significant)	Greater (significant)
TR-3 Change Air Traffic	Less than significant	Similar (less than significant)	Similar (less than significant)	Similar (less than significant)	Similar (less than significant)
TR-4 Increase Design Hazards	Less than significant	Similar (less than significant)	Similar (less than significant)	Similar (less than significant)	Similar (less than significant)
TR-5 Inadequate Emergency Access	Less than significant	Similar (less than significant)	Similar (less than significant)	Similar (less than significant)	Similar (less than significant)
TR-6 Conflict with Policies	Less than significant	Significant (greater)	Significant (greater)	Significant (greater)	Less (less than significant)
Utilities – Energy					
ENERGY-1 Conflict with Adopted Plans	Less than significant	Greater (less than significant)	Greater (significant)	Similar (Significant)	Less (significant)
ENERGY-1 Wasteful Use of Energy	Less than significant	Greater (less than significant)	Greater (significant)	Similar (Significant)	Less (significant)
ENERGY-2 Construction of New Facilities	Significant	Greater (significant)	Greater (significant)	Similar (Significant)	Less (significant)
Utilities – Wastewater					
WW-1 Exceed Wastewater Treatment Requirements	Less than significant	Similar (Less than significant)	Similar (Less than significant)	Similar (Less than significant)	Similar (Less than significant)
WW-2 Construction of New Facilities	Significant	Greater (significant)	Greater (significant)	Similar (Significant)	Similar (significant)
WW-3 Exceed the Capacity of Existing or Planned Facilities	Significant	Similar (significant)	Similar (significant)	Similar (significant)	Similar (significant)
Utilities – Solid Waste					
SW-1 Generate Solid Waste Exceeding landfill capacity	Significant	Greater (significant)	Greater (significant)	Greater (Significant)	Less (significant)
SW-2 Comply with Regulations	Less than significant	Similar (less than significant)	Similar (less than significant)	Similar (less than significant)	Similar (less than significant)
Water Supply and Hydrology					
W-1 Violate Water Quality Standards	Significant	Similar (significant)	Similar (significant)	Similar (significant)	Similar (significant)
W-2 Interfere with Groundwater Recharge	Significant	Greater (significant)	Greater (significant)	Greater (significant)	Similar (significant)
W-3 Erosion and Sedimentation	Significant	Greater (significant)	Greater (significant)	Greater (significant)	Similar (significant)
W-4 Flooding and Floodplains	Significant	Greater (significant)	Greater (significant)	Greater (significant)	Similar (significant)
W-5 Exceed Stormwater Drainage Capacity	Significant	Less (significant)	Greater (significant)	Greater (significant)	Similar (significant)
W-6 Degrade Water Quality	Significant	Similar (significant)	Greater (significant)	Greater (significant)	Similar (significant)
W-7 Housing in 100-year Flood Hazard Areas	Significant	Greater (significant)	Greater (significant)	Greater (significant)	Similar (significant)
W-8 Structures in 100-year Flood Hazard Areas Redirecting Flow	Significant	Greater (significant)	Greater (significant)	Greater (significant)	Similar (significant)

Impact	Project Impact	Alternative 1 – No Project Alternative	Alternative 2 – Trend Alternative	Alternative 3 – Old Plan	Alternative 4 – Blueprint Plus
W-9 Substantial increase in demand for water	Significant	Greater (significant)	Greater (significant)	Similar (significant)	Less (significant)

Source: Impact Sciences, 2018

5.2.6 Analysis of Alternative 1 – No Project Alternative

Aesthetics

Scenic Vistas and Resources

Since the No Project Alternative includes fewer transportation projects than the proposed RTP/SCS, it would have less of an impact in terms of obstructing views and scenic resources. The No Project Alternative would not affect any eligible State Scenic Highways or County designated scenic highways, while the Plan includes projects located near scenic highways which could result in impacts. The No Project Alternative visual impacts would be greater than the Plan impacts for Impacts AES-1 because of the increased consumption of open space, vacant land, and interspersed transportation infrastructure.

Visual Character

Since the No Project Alternative includes fewer transportation projects than the proposed RTP/SCS, it would have less of an impact in terms of adding contrasting visual elements to existing natural, rural, and open space areas. The Plan includes strategies to focus growth in TPAs, which would help reduce the consumption and disturbance of natural lands and reduce impacts to visual character. Under the No Project Alternative, these land use strategies may not occur, although individual jurisdictions may still seek to reduce the urban footprint through their general plans. The Plan includes transportation improvements that facilitate access to undeveloped lands, making those lands more attractive for development than under the No Project Alternative; however, the Plan includes policies to dissuade such encroachment on open space and vacant lands and would result in far fewer impacts to open space. The land use planning strategies included in the proposed RTP/SCS would reduce consumption of vacant, open space/recreation and agricultural lands compared to the No Project Alternative (about 8,884 acres under the Plan and about 10,525 acres under the No Project Alternative). The No Project Alternative visual impacts would be greater than the Plan impacts for **Impacts AES-2** because of the increased consumption of open space, vacant land, and interspersed transportation infrastructure.

Light and Glare

The Plan includes strategies to focus growth in TPAs, which would help reduce impacts associated with light and glare by focusing development in urbanized areas. The plan does not specifically address lighting impacts, therefore, any policies to address light and glare would be implemented at the local level. Jurisdictions may also still seek to reduce the urban footprint through their general plans which would also reduce lighting impacts. The No Project Alternative visual impacts would be greater than the Plan impacts for Impacts AES-3 because of the increased consumption of open space, vacant land, and interspersed transportation infrastructure.

Agricultural Resources

Farmland

Under the No Project Alternative, the population of the TCAG region would still increase by 133,127 people by 2042, however no regional transportation investments would be made above the existing programmed projects. The population distribution would follow past trends, uninfluenced by the Plan's emphasis on urban infill. The No Project Alternative includes fewer transportation projects than the Plan, and there would be no regional policies to focus development in existing urban areas and avoid agricultural land. The No Project Alternative would result in 10,525 acres of land consumed compared to 8,884 acres consumed under the Plan. The No Project Alternative would also result in 2,310.6 acres of farmland consumed compared to 1,518.3 under the Plan. Impacts under the No Project Alternative would be greater than the proposed 2018 RTP/SCS for Impacts AG-1, because of the increased consumption of agricultural, forest, and timberland land and the lack of a comprehensive regional plan.

Williamson Act

Initially, the No Project Alternative would have less potential for creating conflicts with General Plans and other land use regulations, as the only growth strategies that would occur would be subject to local land use controls. However, over time and without a regional strategy, there would be less influence on a coordinated pattern of development. Thus, the No Project Alternative could ultimately result in a more dispersed land use pattern across the region, which could have greater impacts related to conversion of agricultural land and create conflicts with Williamson Act contracts. The No Project Alternative includes fewer transportation projects than the Plan, and there would be no regional policies to focus development in existing urban areas and avoid Williamson Act lands. However, state and federal laws and locally-approved plans and policies currently in place would continue to protect these resources. Impacts under the No Project Alternative would be greater than the proposed 2018 RTP/SCS for Impacts AG-2 because

of the increased consumption of agricultural, forest, and timberland land and the lack of a comprehensive regional plan.

Forest and Timberland

The No Project Alternative would accommodate the same increase in total population, households, and jobs as the Plan. However, the proposed 2018 RTP/SCS includes strategies to focus growth in TPAs which would help reduce the consumption and disturbance of natural lands and reduce impacts to forest lands, and timberland. Impacts under the No Project Alternative would be greater than the proposed 2018 RTP/SCS for Impacts AG-3, because of the increased consumption of agricultural, forest, and timberland land and the lack of a comprehensive regional plan.

Changes in Environment Convert Farmland

The 2018 RTP/SCS would direct more growth to already urbanized areas, thereby reducing the amount of agricultural lands that would be converted to non-agricultural uses. Under the No Project Alternative, this growth pattern would not occur and a greater amount of agricultural lands could be converted to non-agricultural uses. The No Project Alternative would not increase mobility choices and capacity within urban areas. Therefore, the pressure would be reduced under this alternative to convert agricultural lands located near the periphery of these built-out areas to urban land uses could increase as transportation improvements are made. Nevertheless, the impact from changes in environment which would result in conversion of farmland would be greater under this alternative.

Air Quality

Criteria Air Pollutants

Short-Term Emissions

Short-term construction emissions of criteria pollutants would occur with implementation of the No Project Alternative. These construction activities would result in short-term emissions of air pollutants including ROG, NOx, PM10, PM2.5 and fugitive dust. The sources associated with these emissions include construction equipment, employee and vendor vehicles, demolition, grading and other ground-disturbing activities, application of paint and other coatings, paving, and others. The level of emissions is generally proportional to the size of the construction project, with larger projects typically resulting in larger emissions during construction. Countywide, it is likely that more than one project would be under construction at any one time, resulting in greater emissions. However, short-term emissions would be

reduced as compared to the 2018 RTP/SCS due to the reduction in transportation construction projects related to implementation of the 2018 RTP/SCS.

Long-Term Emissions

Emissions of long-term criteria pollutants from mobile sources would be affected by implementation of the No Project Alternative. In order to analyze the net impact of implementation, existing year (2017) emissions were compared to horizon year (2042) emissions.

Results of modeling are presented in **Table 5.0-2, Criteria Pollutant Emissions from Mobile Sources**. As shown, both the Plan and the No Project Alternative would result in reductions of reactive organic gases (ROG), sulfur oxides (SOx), oxides of nitrogen (NOx) and carbon monoxide (CO), and reductions of emissions of fine particulate matter (PM2.5). These would be beneficial impacts. Emissions of respirable particulate matter (PM10) from mobile sources show a slight increase over existing conditions. However, as shown in **Table 5.0-2**, the 2018 RTP/SCS would result in greater reductions (i.e., fewer total emissions) for ROG, NOx, CO, PM2.5, and SOx. PM10 would increase under both Alternatives. Therefore, impacts related to criteria pollutants would be greater under the No Project Alternative.

Table 5.0-2
Criteria Pollutant Emissions from Mobile Sources – No Project Alternative (2042) vs. Plan (2042)

	Tons/Day					
Scenario	**ROG**	**NOx**	**CO**	**PM10**	**PM2.5**	**SOx**
Existing 2017	3.37	10.42	24.56	0.74	0.35	0.06
2018 RTP/SCS 2042	0.99	2.89	6.54	0.75	0.30	0.04
2018 RTP/SCS Net	**-2.38**	**-18.02**	**-7.53**	**0.01**	**-0.05**	**-0.02**
No Project 2042	0.99	2.91	6.60	0.75	0.30	0.04
No Project Net	**-2.38**	**-7.95**	**-7.52**	**0.01**	**-0.05**	**-0.02**

Source: TCAG 2018, EMFAC14.

A conformity analysis was prepared for the 2018 RTP/SCS that analyzes emissions of ozone precursors (ROG and NOx), CO, PM10 and PM2.5 compared to the approved emissions budgets for mobile sources in Tulare County. The analysis found that emissions of all pollutants under the Plan passed the applicable conformity tests and would be in conformity with the State Implementation Plans (SIPs). However, both the Plan and No Project Alternatives would generate greater PM10 emissions by 2042. Consequently, the impact from PM10 emissions would be a significant impact. However, the *2007 PM-10 Maintenance Plan* allows for trading of NOx and PM10 emissions at a 1.5 to 1 ratio. Since the PM10 increase associated with the Plan and No Project alternative are relatively small, this would allow PM10 emissions to pass the

conformity test under this alternative. Consequently, the increase would not be considered substantial, and the impact related to criteria pollutant emissions would remain less than significant.

Toxic Air Contaminants

Short-Term Emissions

The specific location of future construction activity within the County was not known when the air quality analysis was completed, and therefore many variables related to characterizing potential exposures to air toxics during construction activities could not be determined, such as proximity to the emissions sources and duration of exposure. A construction health risk analysis would be speculative given the lack of a construction location and construction activities. However, it is reasonable to assume that some level of construction activity would occur adjacent to sensitive receptors (e.g., residences and schools). The significant construction emissions identified above could result in adverse health effects to sensitive receptors. As such, it is likely that intense construction activities (e.g., from development projects that involve a high volume of haul trucks) would exceed the health risk significance thresholds due to equipment and truck exhaust emissions. However, short-term construction emissions would be reduced under the No Project Alternative due to a reduction of transportation project construction activity within Tulare County as compared to the 2018 RTP/SCS.

Long-Term Emissions

Diesel particulate matter (DPM) generated from diesel-fueled engines and found in diesel exhaust, has been determined by CARB to be a toxic air contaminant as defined under Section 39655 of the Health and Safety Code. The long-term health effects of DPM include cancer, increased incidences of asthma, allergies, and respiratory disease and the short-term health impacts include dizziness, headaches, nausea, and irritation of the eyes, nose, and throat.

PM2.5 emissions will be used as a proxy for DPM emissions in this analysis as further described in **Section, 4.3 Air Quality**. As shown in **Table 5.0-2**, above, emissions of PM2.5 for all mobile sources will be reduced under the No Project Alternative. However, in order to more closely approximate DPM emissions, PM2.5 emissions specifically from heavy-duty diesel vehicles were estimated. The emissions generated under existing conditions as compared to the No Project Alternative are shown in **Table 5.0-3, PM2.5 Emissions from Heavy Duty Diesel Vehicles.**

Table 5.0-3
PM2.5 Emissions from Heavy Duty Diesel Vehicles (tons/day) – No Project (2042) vs. Plan (2042)

Existing 2017	2042 Plan	2042 No Project Alternative
0.066	0.066	0.066

Source: TCAG 2018, EMFAC14

As shown in **Table 5.0-3**, the No Project Alternative would generate similar PM2.5 emissions compared to the 2018 RTP/SCS but would be less than under existing conditions. CARB has several programs and regulations in place to reduce DPM emissions state-wide. This includes enforced retrofit of diesel particulate filters, replacement of older trucks and buses, requirements for lower emissions on new diesel vehicles, inspection programs, idling restrictions, and other programs for marine and off-road diesel vehicles. These programs and regulations would reduce DPM emissions over the period of the 2018 RTP/SCS. Consequently, it can be assumed that the reductions in PM2.5 emissions include reductions in DPM emissions region-wide.

However, on a case-by-case basis RTP/SCS transportation improvements may also bring sources of DPM closer to sensitive receptors through construction of new facilities or widened roadways, which could increase exposure of sensitive receptors. To provide a qualitative measure of this impact, highways in Tulare County were given an Air Quality Index (AQI), based on three factors: (1) average daily traffic (2) percentage of truck traffic and (3) level of service (which is a measure of traffic delays). A 'high' index indicates that a roadway has a relatively high amount of traffic and percentage of trucks with a low level of service. A 'low' index reflects a relatively low amount of traffic with fewer trucks, and a high level of service. 'Medium' would be somewhere between 'high' and 'low'. In this way, a 'high' index would qualitatively show a higher health risk as well, since roadways with a 'high' index would tend to have higher DPM concentrations due to the higher number of trucks and lower traffic speeds. The indices for highways in Tulare County and locations of sensitive receptors under existing conditions, 2018 RTP/SCS, and the No Project Alternative are shown in **Figures 4.3-5** through **4.3-7**.

There are more highways identified as having a higher AQI rank under the No Project Alternative versus the existing conditions in 2017. The total receptors affected by higher AQI highways for the No Project Alternative would be less than the 2018 RTP/SCS. Regarding sensitive receptor locations, the 2018 RTP/SCS would locate more housing, and schools near higher traffic highways, but would not change the amount of hospitals near high AQI highways. However, under the No Project Alternative, there would be less hospitals located near medium AQI highways. Therefore, this qualitative measure indicates that an

increased heath risk impact could result from implementation of the 2018 RTP/SCS as more sensitive receptors would be located relatively close to increased truck traffic.

Although PM2.5 emissions would be reduced in Tulare County under the No Project Alternatives, more sensitive receptors located next to highways in 2042 than under existing conditions. The projected higher volume of truck traffic would potentially be increased health risk to certain populations in Tulare County. In addition, given the lack of data regarding industrial and other stationary sources of TACs, it is unknown whether these sources would result in increased emissions of TACs in 2042 compared to existing conditions, and therefore it is unknown what their impact on health risks in Tulare County would be. Consequently, this impact would be considered significant. Overall impacts from the No Project alternative would be similar to those under the 2018 RTP/SCS, but would remain significant.

Biological Resources

Species Identified as a Candidate, Sensitive, or Special-Status Species

The No Project Alternative would result in a less concentrated growth pattern, which would affect a greater amount of vacant land and critical habitat. The No Project would result in the consumption of 176 acres of critical habitat and 10,525 acres of vacant land, while the 2018 RTP/SCS would result in the consumption of 144 acres of critical habitat and 8,884 acres of vacant land[4]. As such a greater number of sensitive species could be affected under the No Project. No Project impacts would be greater than the plan.

Sensitive Natural Communities and Federally-Protected Wetlands

Because the No Project Alternative includes a greater amount of critical habitat consumed and a more dispersed land use pattern, it is likely that a greater amount of wetlands and sensitive natural communities would be affected with the No Project than under the Plan.

Wildlife Movement

Direct impacts to wildlife movement include increased noise and human presence during construction, as well as increased trash, which may attract predators to the project site and discourage wildlife use of surrounding natural habitat. Increased roadway traffic, due to the division of habitat and corridors, may affect surrounding wildlife and lead to increased wildlife mortality. The No Project Alternative includes fewer projects (such as widenings) than the 2018 RTP/SCS and therefore would be less likely to result in direct impacts to wildlife movement; however, the more dispersed growth pattern of the No Project could

4 TCAG 2018, Envision Tomorrow, SJV Greenprint

result in greater impacts to wildlife movement by habitat modification. Therefore, impacts under the No Project would be significant and similar to the 2018 RTP/SCS.

Preservation Plans

The No Project Alternative would result in greater vacant land and critical habitat consumption that would increase biological resources impacts and the potential to conflict with ordinances and plans regarding biological resources. This impact would be greater than impacts under the 2018 RTP/SCS.

Cultural Resources

Historical Resources

The proposed 2018 RTP/SCS would result in concentration of development in previously developed urban areas, which could lead to greater impacts to historic structures, such as those located in downtown historic districts. However, many communities, including the County and the City of Visalia, have in place policies to protect historic resources, and even under the No Project Alternative, these areas could still redevelop, although possibly not at the same intensity as under the plan. Therefore, the No Project impacts would be lesser than the Plan's impacts, but would likely still be significant and development in historic cores would continue to occur. All projects (including those under the No Project Alternative and Project) would be required to comply with the same local, state, and federal regulations in place to protect identified cultural resources.

Archeological Resources

Under the No Project Alternative, fewer areas would be impacted by excavation and construction activities related to transportation projects because there would be fewer transportation projects. However, the No Project Alternative would result in a less concentrated form of growth, which would affect an increased amount of currently undisturbed land (10,525 acres as compared to 8,884 acres with the proposed Project). Thus, the No Project Alternative would result in greater vacant land consumption that could, in turn, increase the chance to uncover a greater number of previously undisturbed resources, including archeological resources. Impact would be significant.

Paleontological Resources

Under the No Project Alternative, fewer areas would be impacted by excavation and construction activities related to transportation projects because there would be fewer transportation projects. However, the No Project Alternative would result in a less concentrated form of growth, which would affect an increased amount of currently undisturbed land (10,525 acres as compared to 8,884 acres with

the proposed Project). Thus, the No Project Alternative would result in greater vacant land consumption that could, in turn, increase the chance to uncover a greater number of previously undisturbed resources, including paleontological resources. Impacts would be significant.

Human Remains

Under the No Project Alternative, fewer areas would be impacted by excavation and construction activities related to transportation projects because there would be fewer transportation projects. However, the No Project Alternative would result in a less concentrated form of growth, which would affect an increased amount of currently undisturbed land (10,525 acres as compared to 8,884 acres with the proposed Project). Thus, the No Project Alternative would result in greater vacant land consumption that could, in turn, increase the chance to uncover a greater number of previously undisturbed resources, including human remains. Impacts would be significant.

Tribal Cultural Resources

Under the No Project Alternative, fewer areas would be impacted by excavation and construction activities related to transportation projects because there would be fewer transportation projects. However, the No Project Alternative would result in a less concentrated form of growth, which would affect an increased amount of currently undisturbed land (10,525 acres as compared to 8,884 acres with the proposed Project). Thus, the No Project Alternative would result in greater vacant land consumption that could, in turn, increase the chance to uncover a greater number of previously undisturbed resources, including tribal cultural resources. Impacts would be significant.

Greenhouse Gas Emissions

GHG Emissions Estimates

The 2018 RTP/SCS includes strategies aimed at increasing the density of land use in Tulare County, thereby reducing per capita VMT and GHG emissions. In all analysis years, emissions would be higher under the No Project Alternative. The first significance threshold for GHG emissions is whether the project would result in emissions that could have a significant impact on the environment. In 2042 mobile source emissions would be 1,669,134 $MTCO_2e$/yr under the No Project Alternative, compared to 1,664,730 $MTCO_2e$/yr under the 2018 RTP/SCS, which is a 0.3 percent increase compared to the 2018 RTP/SCS. Mobile source emissions under 2017 existing conditions are approximately 2,229,808 $MTCO_2e$/yr.[5] Both alternatives would result in greater GHG mobile source emissions than under existing conditions.

[5] TCAG, 2018 and *EMFAC14*

The 2018 RTP per capita GHG emissions from cars and light duty trucks would be reduced by 12.8 percent in 2020 and 16.6 percent in 2035 compared to the SB 375 2005 base year. This compares with reductions of 12.1 percent, and 16.1 percent respectively for the No Project Alternative. Consequently, TCAG would meet its targets for GHG reductions under SB 375 with and without the 2018 RTP/SCS. Therefore, impacts would be less than significant for SB 375 and AB 32 for both the Plan and No Project Alternative.

The second significance threshold for GHG emissions is whether the project would result in greater emissions than under existing conditions (i.e., would emissions in 2042 be greater than in 2017). As shown in **Table 5.0-4**, in 2042 daily mobile source GHG emissions would be 4,573 metric tons of CO_2 equivalents ($MTCO_2e$) under the No Project Alternative, compared to 4,561 $MTCO_2e$ under the 2018 RTP/SCS. The No Project Alternative would generate less emissions than under existing conditions, but generate more emissions compared to the 2018 RTP/SCS.

Table 5.0-4
Per Capita GHG Mobile Source Emissions (1990, 2005, 2017, 2042)

Source	Population	Total Mobile Source Emissions ($MTCO_2e$/Day)	GHG Per Capita (Pounds/Day of CO_2e)	% GHG Per Capita Reduction from 2017 ($MTCO_2e$/Year)
1990 Conditions	311,921	5,535	39.12	N/A
2005 Conditions	404,148	6,512	35.52	N/A
2017 Existing Conditions	471,842	6,109	28.54	N/A
2042 No Project Alternative	604,969	4,573	16.66	-42%
2042 Old Plan Alternative	604,969	4,636	16.89	-41%
2042 Trend Alternative	604,969	4,613	16.81	-41%
2042 RTP/SCS	604,969	4,561	16.62	-42%
2042 Blueprint Plus Alternative	604,969	4,546	16.57	-42%

Note: 1990 emissions estimated as approximately 15% below 2005 emission levels.
Source: Emissions and population (2005, 2017, 2042) data provided by TCAG, 2018; 1990 population data provided by US Census Bureau, 2018.

Consistency With Plans

The third threshold asks whether the project would hinder progress toward the goals of applicable GHG reductions plans such as AB 32, SB 375, and SB 32 (i.e., would emissions in 2020 be the same as emissions in 1990).

SB 375

For TCAG, CARB determined that the 2020 target is a 5 percent reduction from 2005 emissions levels, and the 2035 target is a 10 percent reduction. Although iimplementation of the No Project Alternative would provide less reduction of GHG compared to the 2018 RTP/SCS, this alternative would exceed these GHG reduction targets, providing reductions of 12 percent reduction in 2020 and 17 percent in 2035 (**Table 5.0-5**).

Table 5.0-5
No Project Alternative SB 375 Greenhouse Gas Emissions and VMT Reductions

Indicators & Measures	2005 Baseline	2020 No Project	2035 No Project	2042 No Project
Total Population	404,148	488,293	568,186	604,969
Vehicle Miles Traveled (VMT)				
VMT per Weekday	8,705,754	9,348,211	10,515,830	11,046,917
Per Capita VMT SB 375	21.54	19.14	18.51	18.26
Difference between 2005 Base Per Capita VMT (21.54 miles)	0.0%	-11.12%	-14.08%	-15.23%
SB 375 CO_2 Emissions				
Total SB 375 CO_2 Emissions (tons/day)	3,404	3,614	4,017	4,229
Per Capita SB 375 CO_2e Emissions (lbs/day)	18.57	16.32	15.59	15.41
Difference between 2005 Base Per Capita CO_2 (18.57 lbs)	0.0%	-12.1%	-16.1%	-17.0%
SB 375 Targets Through September 30, 2018 (3/22/2018)	0.0%	-5.0%	-10.0%	N/A

Source: TCAG, 2018.

AB 32

GHG emissions per household would be less under the 2018 RTP/SCS than under the No Project Alternative (13.8 $MTCO_2e$/Year per household compared to 14.8 $MTCO_2e$/Year per household). However, data regarding energy use and therefore GHG emissions from commercial, industrial, agricultural and other sources is not available. While energy use per household would decrease as a result of the more compact land use growth pattern, total energy use as a result of all land use activities would increase substantially between now and 2042.

As shown in **Table 5.0-6,** per capita GHG emissions for the No Project Alternative would be 33 percent below 1990 levels by 2020, and total mobile source GHG emissions are projected to increase by approximately five percent. This is approximately the same level of emissions reduction as compared to the 2018 RTP/SCS.

Table 5.0-6
Mobile Source GHG Emissions (1990, 2005, 2017, 2020, 2035 and 2042)

Source	Estimated Population	Total Mobile Source Emissions ($MTCO_2e$/Day)	Total Percent GHG Change from 1990 ($MTCO_2e$/Year)	GHG Per Capita (Pounds/Day of CO_2e)	Total Percent GHG Per Capita Reduction from 1990 (Pounds/Day of CO_2e)
1990 Conditions	311,921	5,535	N/A	39.12	N/A
2005 Conditions	404,148	6,512	N/A	35.52	N/A
2017 Existing Conditions	471,842	6,109	+10%	28.54	-27%
2020 No Project Alternative	488,293	5,803	5%	26.20	-33%
2020 Old Plan Alternative	488,293	5,784	4%	26.11	-33%
2020 Trend Alternative	488,293	5,797	5%	26.17	-33%
2020 RTP/SCS	488,293	5,763	4%	26.02	-33%
2020 Blueprint Plus Alternative	488,293	5,755	4%	25.99	-34%
2035 No Project Alternative	568,186	4,567	-17%	17.72	-55%
2035 Old Plan Alternative	568,186	4,637	-16%	17.99	-54%
2035 Trend Alternative	568,186	4,587	-17%	17.80	-54%
2035 RTP/SCS	568,186	4,543	-18%	17.63	-55%
2035 Blueprint Plus Alternative	568,186	4,531	-18%	17.58	-55%
2042 No Project Alternative	604,969	4,573	-17%	16.66	-57%
2042 Old Plan Alternative	604,969	4,636	-16%	16.89	-57%
2042 Trend Alternative	604,969	4,613	-17%	16.81	-57%
2042 RTP/SCS	604,969	4,561	-18%	16.62	-58%
2042 Blueprint Plus Alternative	604,969	4,546	-18%	16.57	-58%

Note: 1990 emissions estimated as approximately 15% below 2005 emission levels.
Source: *TCAG, 2018;* US Census Bureau, 2018.

SB 32

SB 32 sets the statewide GHG emissions reduction target for the year 2030.SB 32 requires a reduction in GHG emissions of 40 percent below 1990 levels. As shown in **Table 5.0-6**, emissions from transportation sources in Tulare County would exceed these targets, providing an increase in emissions in 2020 of four

percent, and a decrease in emissions in 2035 of 17 percent. Neither the 2020 nor 2035 projections reduce emissions by 40 percent as compared to 1990 levels. These emission reductions are less than the reductions provided by the 2018 RTP/SCS. Both the 2018 RTP/SCS and the No Project Alternative. would have significant impacts with respect conflicting with the state's ability to achieve SB 32 and EO S-3-05 GHG reduction targets. However, in all years emissions under the Plan would be less than under the No Project Alternative. Therefore, impacts associated with SB 32 and EO S-3-05 conflicts would also be less with the 2018 RTP/SCS than the No Project Alternative for all thresholds and all years analyzed.

Land Use

Conflict with Plan, Policy or Regulation

In the No Project Alternative, population would still grow by 133,127 people; however, no regional transportation investments would be made above the existing programmed projects, and no land use strategies would be in place. The population distribution would follow past trends, uninfluenced by additional transportation investments.

The No Project Alternative includes fewer transportation projects than the 2018 RTP/SCS and does not include any land use strategies. It would have a lesser potential for conflicting with general plans as the only growth strategies that would occur would be based on local general plans and land use controls. Nonetheless, urbanization with significant potential for land use conflicts would occur resulting in significant impacts under the No Project alternative.

Disrupt a Community

The No Project Alternative would likely have similar significant impacts on and division of communities, because redevelopment in existing communities would still occur and more land in general would be impacted. In general, as fewer transportation projects are included in the No Project alternative, there would be less opportunity for disruption of a community, although impacts would still remain significant.

Noise

Exposure to Excess Noise Levels, Substantial Permanent or Temporary Increases in Noise

Implementation of the 2018 RTP/SCS would result in the same total regional population and households as the No Project Alternative. Population for both the No Project Alternative and the Plan 2018 RTP/SCS is projected to be approximately 604,969 in 2042. However, under the No Project Alternative, no regional transportation investments would be made beyond the existing programmed projects. Under the No

Project Alternative, the population distribution is assumed to follow past trends, uninfluenced by additional transportation investments and growth policies contained within the proposed 2018 RTP/SCS.

Both the No Project Alternative and 2018 RTP/SCS would expose people to significant increases in noise and vibration. Under the 2018 RTP/SCS, development would be more concentrated, potentially exposing more people and sensitive uses to noise and vibration in urban areas (including both construction and operational noise). However, the 2018 RTP/SCS includes improvements in urban areas that would facilitate traffic movement, and increase use of transit and alternate modes that could reduce individual vehicle noise (as more people take alternative modes of transportation). On balance, the No Project Alternative would result in more roadways with substantial increases in noise without any traffic congestion improvements like the Plan (see **Figure 4.8-5** as compared to **4.8-6**).

The greater amount of transportation projects in the 2018 RTP/SCS would increase the amount of transportation-related construction activity, which would increase short-term noise and vibration levels. However, as a result of the more dispersed growth pattern, and no emphasis on transit or alternative modes of transportation, roadways would increase in congestion and associated noise. With a more dispersed growth pattern, fewer people would be exposed to substantial increases in noise as compared to the Plan (more vacant land would be consumed under the No Project Alternative -- 10,525 acres compared to 8,884 acres under the Plan), although people in proximity to roadway noise increases would still be exposed. Fewer construction projects would be constructed which would result in overall lower construction noise impacts compared to the 2018 RTP/SCS.

Vibration

The transportation improvements under the 2018 RTP/SCS would help to move traffic more efficiently which could reduce vibration in urban areas but not to the point of off-setting increased vehicle trips. Similarly, with vibration in general, as for the 2018 RTP/SCS, there remains the potential for individual projects in the region to result in significant vibration impacts. Thus, impacts related to groundborne vibration under the No Project Alternative would be similar to under the 2018 RTP/SCS and would be significant.

Airport Noise

Similar to the Plan, some land use projects under the No Project Alternative could be located within an area covered by an airport land use plan or in the vicinity of a private airstrip. However, existing plans and regulations, including the Tulare County Comprehensive Airport Land Use Plan (ALUP) and Federal Aviation Administration regulation of airports and airstrips, would minimize noise emissions levels for

people residing or working in the project area. Therefore, impacts would be similar to the Plan and less than significant.

Population, Housing and Employment

Induce Population

Under the No Project Alternative, the population of the TCAG region would still grow by approximately 133,127 people and add an additional 37,436 housing units by 2042; however, no regional transportation investments would be made above the existing programmed projects. The 2018 RTP/SCS includes land use strategies that would target growth in developed urban areas. These strategies are absent in the No Project Alternative. However, the transportation investments included in the 2018 RTP/SCS could facilitate access to vacant lands that might otherwise be less accessible under the No Project Alternative. This improved accessibility under the 2018 RTP/SCS could encourage growth in previously undeveloped areas that are not currently planned for growth Therefore, impacts would be significant under the No Project alternative. The No Project Alternative would consume about 10,525 acres of vacant lands, while the 2018 RTP would consume about 8,884 acres of vacant land. [6] As the No Project would consume a greater amount of vacant land, this land use pattern could represent a greater chance of unplanned growth. As such impacts related to induced population would be greater under the No Project than the Plan.

Displacement

Under the No Project alternative, the population distribution would follow past trends, uninfluenced by the Plan's emphasis on compact development. The GIS analysis shows that under the No Project Alternative uses within 500 feet of freeways would include 13,572 jobs and 3,898 households. For the Plan, 12,453 jobs and 4,178 households would be affected by transportation projects. Although the No Project includes fewer transportation improvements, a greater number of home and business would be located near freeways which could result in the potential for displacement. This could result in a greater number of displaced business and residences under the No Project Alternative. The No Project Alternative impacts could be greater than the Plan impacts as more residential uses could be affected.

6 TCAG, 2018

Public Services

Police and Fire

Under the No Project Alternative, the population of the TCAG region would still grow by close to 133,127 people by 2042, however no regional transportation investments would be made above the existing programmed projects. However, the Plan includes strategies to focus growth in TPAs which would help reduce police and fire response times and facilities would be in closer proximity to service calls (compared to more dispersed growth patterns) but could increase the need for new facilities in these areas. The No Project Alternative would permit unplanned development which could strain fire department resources due to the physical distances between developments. The No Project impacts would be similar to those under the Plan for **Impact FIRE-1.** Under the Plan increased density in urban areas could increase demand for new facilities and under the No Project Alternative the dispersed development pattern could result in the need for additional facilities to be constructed (in a more dispersed pattern).

The No Project Alternative would accommodate the same increase in total population, households, and jobs as the Plan. However, the Plan includes strategies to focus growth in TPAs which would help reduce response times, as most requests would be from concentrated urban areas; however the Plan could increase the need for new facilities in these areas. The No Project Alternative would permit more dispersed development which could strain police department resources due to the physical distances between developments. Under the No Project Alternative, the TPA land use strategies may not occur, although individual jurisdictions may still seek to reduce the urban footprint through their general plans.

The No Project Alternative impacts would be similar to those under the Plan for **Impact POLICE-1**. Under the Plan, increased density in urban areas could increase demand for new facilities and under the No Project Alternative the dispersed development pattern could result in the need for additional facilities to be constructed (in a more dispersed pattern, possibly away from sensitive receptors). However, more dense populations could result in increased crime.

Schools

Under the No Project Alternative, the population of the TCAG region would still grow by approximately 133,127 persons through 2042, however no regional transportation investments would be made above the existing programmed projects. The population distribution would follow past trends, uninfluenced by the Plan's emphasis on TPAs, which would result in greater consumption of vacant land (10,525 acres would be consumed under the No Project Alternative as compared to 8,884 under the Plan). However, the Plan includes strategies to focus growth in TPAs which would place an increased burden on existing

schools in urban areas as development increases. The No Project Alternative would permit dispersed development which could require additional educational facilities to be built to serve new residential developments. Under the No Project Alternative, the TPA land use strategies may not occur, although individual jurisdictions may still seek to reduce the urban footprint through their general plans. The No Project Alternative impacts would be similar to those under the Plan.

Recreation

Under the No Project Alternative, the population of the TCAG region would still grow by approximately 133,127 persons through 2042, however no regional transportation investments would be made above the existing programmed projects. The population distribution would follow past trends, uninfluenced by the Plan's emphasis on TPAs, which would result in greater consumption of open space areas (10,525 acres would be consumed under the No Project Alternative as compared to 8,884 under the Plan).

The No Project Alternative would accommodate the same increase in total population, households, and jobs as the Plan but with development occurring in a more dispersed pattern. Therefore, demand for recreational opportunities would be more dispersed and not focused in urban areas. The No Project Alternative would permit dispersed development which could require additional park and recreation facilities to be built in a more dispersed pattern. Under the No Project Alternative, the TPA land use strategies may not occur, although individual jurisdictions may still seek to reduce the urban footprint through their general plans.

Transportation

Substantial Increases in VMT

The last two columns of **Table 4.11-4** compares the Plan against the No Project Alternative, in which new transportation investments cease after 2019, while population and development continue to grow to forecast levels and development follows a more dispersed pattern than called for in the Plan. Compared to the No Project Alternative, the Plan would result in approximately 0.4 percent less VMT. The Plan would also result in 44 percent increase over the No Project Alternative in transit boardings, and would increase use of active modes, while reducing single occupancy/drive alone and high occupancy use. Both total and per capita VMT measures would drop with the Plan versus the 2042 No Project Alternative.

Conflict with CMP

Under the Plan, compared to existing conditions, traffic volumes would increase throughout the region and congestion would increase regionwide, especially in urban areas. Under the No Project Alternative,

traffic volumes would similarly increase and congestion would increase but in a more dispersed pattern and no new transportation investments to reduce congestion. Therefore, a significant impact would occur under this alternative and impacts would be greater than the Plan.

Change in Air Traffic

Similar to the conclusions of Plan implementation, the No Project Alternative would also not by itself result in changes in air traffic patterns. However, the similar increased population that would occur by 2042 would likely result in increased air traffic. As with the proposed project, iimplementation of the Tulare County Comprehensive Airport Land Use Plan (ALUP) would avoid safety risks associated with air traffic to the extent feasible. The impact to a change in air traffic patterns would similarly be less than significant.

Increase Hazards

Similar to the Plan, the No Project alternative would not result in increased hazards due to design feature (e.g., sharp curves or dangerous intersections) or increase conflicts between incompatible uses (e.g., farm equipment and other vehicular traffic). Design of new transportation facilities, including new pedestrian and bicycle facilities, takes into account potential hazards and avoids risks to the extent feasible. Impacts would be less than significant.

Inadequate Emergency Access

Under the No Project Alternative congestion would increase which could result in travel delay. The fire departments throughout the County are responsible for maintaining adequate response times, and future projects, both transportation and development, would undergo further environmental analysis that would include evaluation and mitigation of impacts to emergency access. Impacts would be less than significant and similar to the Plan.

Conflict with Alternative Transportation Plans

Under the No Project Alternative, there would be less transportation infrastructure investment, while growth would continue to occur at forecasted rates. In 2042, the No Project Alternative would result in more VMT as compared to the Plan. The No Project Alternative would also result in less transit use and use of active mode shares compared to the Plan. Additional and/or worsened significant impacts would result from this alternative compared to those impacts identified for the Project. The increased vehicular congestion and the lack of investment in pedestrian and bicycle facilities would result in decreases in the performance of Tulare's pedestrian and bicycle facilities. Impacts would be greater than the Plan.

Utilities

Energy

Wasteful Inefficient Use of Energy

The No Project Alternative includes fewer transportation projects than the Plan; howeverit would have more of an impact related to the need for expanded or newly constructed energy facilities to serve the more dispersed development accompanying population growth in the region due to less emphasis on TPAs. In addition, since fewer public transit options would be available than under the RTP and congestion would increase, use of petroleum fuel for personal vehicles would be greater, as indicated in **Table 5.0-7**.

Table 5.0-7
Gasoline and Diesel Consumption – No Project (2042) vs. Plan (2042)

Alternative	Vehicle Miles Travelled	Daily Gasoline Consumption (thousand gallons)	Daily Diesel Consumption (thousand gallons)
No Project Alternative (2042)	12,758,055	273.00	181.71
2018 RTP/SCS (2042)	12,699,425	272.67	180.89

Source: TCAG 2018, EMFAC 2014

The No Project Alternative would accommodate the same increase in total population, households, and jobs as the Plan. However, as shown in **Table 5.0-8**, the residential and commercial energy consumption under the No Project Alternative would be greater than under the 2018 RTP/SCS.

Table 5.0-8
Residential and Commercial Energy Consumption from New Growth – No Project (2042) vs. Plan (2042)

Alternative	Energy Use per Household (Million BTU Per Year)
No Project (2042)	158.9
2018 RTP/SCS (2042)	148.3

Source: TCAG, 2018.

Unlike the No Project Alternative, the 2018 RTP/SCS includes strategies to focus growth in TPAs, which would help reduce the number of new energy facilities or expansion of existing facilities that need to be constructed. This is because the 2018 RTP/SCS would accommodate the same population by constructing higher density development with infill and mixed use projects. Infill and mixed-use developments are generally higher efficiency dwellings accounting for the reduction in total energy consumption seen in **Table 5.0-8**. Lower density development would be more dispersed throughout Tulare County under the No Project Alternative to satisfy the same population growth. Under the No Project Alternative, the Plan land use strategies may not occur, although individual jurisdictions may still seek to reduce the urban footprint through their general plans. It is also possible that increased density in urban areas could put additional pressure on energy providers to increase capacity to these areas resulting in additional impacts. However, as in general, energy use would be more efficient (on a per capita basis), with the Plan, impacts wasteful, inefficient, and unnecessary consumption of energy would be greater with the No Project Alternative.

Electricity and Natural Gas Use

Under the No Project Alternative, the population of the TCAG region would still grow by approximately 133,127 persons through 2042, however no regional transportation investments would be made above the existing programmed projects. The population distribution would follow past trends, uninfluenced by the Plan's emphasis on TPAs, which would result in greater consumption of open space areas (10,525 acres would be consumed under the No Project Alternative as compared to 8,884 under the Plan).

The No Project Alternative would accommodate the same increase in total population, households, and jobs as the Plan but with development occurring in a more dispersed pattern. Therefore, demand for electricity and natural gas would be more dispersed and not focused in urban areas. The No Project Alternative would permit dispersed development which could require additional electricity and natural gas facilities to serve a more dispersed land use pattern which could necessitate new or expanded facilities to serve additional areas. Under the No Project Alternative, the TPA land use strategies may not occur, although individual jurisdictions may still seek to reduce the urban footprint through their general plans. Similar to the proposed project, the No Project Alternative would result in an overall increase in electricity and natural gas demand due to increased population and economic growth. Impacts would be significant and would be greater than the Plan.

Wastewater

The No Project would accommodate the same increase in total population, households, and jobs as the Plan; however, the Plan includes strategies to focus growth adjacent to transit, which would help reduce

the need for construction of new wastewater treatment facilities because of more efficient use of water (and thus less generation of wastewater). The more distributed development pattern of the No Project Alternative would result in greater water consumption – in part as a result of more landscaping associated with single-family development as compared to multi-family homes. The additional water used on landscaping generally does not become wastewater, nonetheless the No Project's distributed growth pattern would tend to use more water, which could generate more wastewater.

Expansion of existing facilities or construction of new facilities would still be necessary under the Plan to accommodate increases in population in urban areas. The more concentrated growth pattern could result in the existing wastewater collection systems in urban areas being inadequate (sewer lines could be too small). Under the No Project Alternative, land use strategies to focus growth in urban areas may not occur, although individual jurisdictions may still seek to reduce the urban footprint through their general plans. Construction of new wastewater treatment facilities would occur under the No Project Alternative to service the more dispersed growth pattern. Therefore, impacts would be similar with the No Project Alternative compared to impacts with the Plan, but the location of construction of new wastewater facilities under the No Project Alternative could be in different areas as compared to under the Plan. With a more dispersed growth pattern existing sewer lines would not be as impacted, although new sewer lines would be needed to serve the more dispersed growth pattern. Similar to the Plan, the No Project Alternative would not significantly impact wastewater treatment requirements but could significantly impact wastewater treatment and distribution facilities in Tulare County.

Solid Waste

Since the No Project Alternative includes fewer transportation projects than the Plan, it would have a lesser impact on solid waste generated from construction of transportation projects. The more compact growth pattern of the Plan could generate less solid waste than the more dispersed pattern of the No Project Alternative (multi-family development is more resource efficient and generates less waste than single-family development). The growth strategies included in the 2018 RTP/SCS would not occur with the No Project Alternative, longer distances could occur between development and landfill facilities and/or garbage collection would require that collection trucks travel greater distances to collect waste from the more distributed land use pattern.

The No Project Alternative would accommodate the same increase in total population, households, and jobs as the Plan. However, the Plan includes strategies to focus growth in urban areas, which would help reduce the impact to solid waste facilities. Under the No Project Alternative, these land use strategies may not occur, although individual jurisdictions may still seek to reduce the urban footprint through their general plans. Therefore, impacts would be greater under the No Project Alternative. Since the No Project

Alternative would generate greater solid waste (due to the less efficient growth pattern), it could contribute to overlapping impacts with other areas where they use the same facilities.

Water Supply and Hydrology

Under the No Project Alternative, the population of the TCAG region would still grow by close to 133,127 people by 2042, however no regional transportation investments would be made above the existing programmed projects. The population distribution would follow past trends, uninfluenced by the Plan's emphasis on TPAs.

Since the No Project Alternative includes fewer transportation projects than the Plan, it would have a lesser impact in terms of water quality. Under the No Project Alternative, only those projects currently funded and programmed would be constructed. Overall, fewer transportation project would be constructed (including fewer lane miles) and as a result, stormwater runoff associated with transportation infrastructure could be reduced compared to the Plan.

The No Project Alternative would accommodate the same increase in total population, households as the Plan. However, the Plan includes strategies to focus growth in urban areas which would help reduce the disruption of natural lands and vegetation in rural areas (under the No Project Alternative 10,525 acres of land would be consumed compared to 8,884 acres under the Plan). The No Project Alternative could increase stormwater runoff as a result of more land disturbed/urbanized, as well as increase development in outlying areas including flood zones. Under the No Project Alternative, land use strategies to concentrate growth may not occur, although individual jurisdictions may still seek to reduce the urban footprint through their general plans.

Regarding groundwater recharge, the No Project alternative would include fewer new lane miles, which could result in more permeable surface area available, compared to the Plan. However, the No Project alternative would result in greater land consumption 10,525 acres compared to 8,884 acres under the Plan. As a result, there would be fewer opportunities for groundwater recharge and impacts would be significant and greater than the Plan.

Regarding water supply, water usage for new development (residential) would increase under the No Project Alternative from 264 gallons per day (per household) under the Plan to 293 gallons per day per household (under the No Project) primarily because multi-family housing uses less water than single-family housing because of less landscaping per unit. This would occur even though the population total would be the same indicating growth patterns would be less water efficient. However, more important farmland would be consumed under the No Project Alternative (2,310.6 acres compared to 1,518 acres under the Plan) which could result in a reduction in water usage associated with agricultural lands.

Therefore, the No Project Alternative would have a lesser impact on depleting water supplies than the proposed project, although impacts would remain significant.

The No Project Alternative impacts would be greater than the Plan for water related impacts because of the increased urbanization, increased water consumption for new growth, development in flood plains and the potential for increased impervious surfaces (i.e., land consumption).

5.2.7 Analysis of Alternative 2 –Trend

Aesthetics

Scenic Vistas and Resources

The Trend Alternative includes a slightly modified transportation network without the same level of transportation improvements as the Plan. Therefore, under the Trend Alternative, the construction of roadways would result in fewer opportunities for impacts to eligible State Scenic Highways and scenic vistas as compared to the Plan.

Visual Character

Since the Trend Alternative includes a modified transportation network with fewer investments than the proposed RTP/SCS, it would have less of an impact in terms of adding contrasting visual elements to existing natural, rural, and open space areas. The Plan includes strategies to focus growth in TPAs, which would help reduce the consumption and disturbance of natural lands and reduce impacts to visual character. Under the Trend Alternative, these land use strategies would follow trends of existing local agency general plans and linear trends in growth on a sub-regional basis (although individual jurisdictions may still move away from the Trend Alternative). The Plan includes transportation improvements that facilitate access to undeveloped lands, making those lands more attractive for development than under the Trend Alternative; however, the Plan includes policies to dissuade open space encroachment and, therefore, would result in comparatively fewer impacts to open space. The land use planning strategies included in the proposed RTP/SCS would reduce consumption of vacant, open space/recreation and agricultural lands compared to the Trend Alternative. The Trend Alternative visual impacts would be greater than the Plan impacts for Impacts AES-2 because of the increased consumption of open space, vacant land, and interspersed transportation infrastructure.

Light and Glare

However, the Trend Alternative would not include urban form strategies to the same extent as the Plan. Nighttime lighting impacts would be greater, as more vacant land would be consumed under the Trend

Alternative (10,525 acres compared to 8,884 acres under the Plan) since lighting impacts are most pronounced in rural areas. Therefore, the Trend Alternative would result in fewer impacts to scenic vistas and glare but would result in greater lighting impacts than the Plan and impacts would be significant (as they would be for the Plan).

A*gricultural Resources*

Farmland

Similar to the No Project Alternative, the Trend Alternative would not encourage a compact development pattern and Alternative 2 would consume a total of 2,310 acres of farmland (compared to 1,518 acres under the Plan). The Trend Alternative would not include the urban form strategies that would focus growth within urban areas and, consequently, would result in the consumption of a greater amount of farmland compared to the Plan.

Williamson Act

The Trend Alternative would have less potential for creating conflicts with General Plans and other land use regulations, as the only growth strategies that would occur would be subject to local land use controls. Thus, the Trend Alternative would have lesser impacts related to conversion of agricultural land and create conflicts with Williamson Act contracts. The Trend Alternative includes a modified transportation network with fewer investments than the Plan, and there would be no regional policies to focus development in existing urban areas and avoid Williamson Act lands. However, state and federal laws and locally-approved plans and policies currently in place would continue to protect these resources. Impacts under the Trend Alternative would be less than the proposed 2018 RTP/SCS for Impacts AG-2 because of the reduced consumption of agricultural, forest, and timberland land and the lack of a comprehensive regional plan, but would still be significant.

Forest and Timberland

It is unlikely that land currently defined and zoned as forest land or timberland would be converted to residential as County polices and policies of other jurisdictions focus development in already developed areas. However, it is possible that such lands could be consumed as a result of the Trend growth pattern. The Trend Alternative includes a modified transportation network with fewer investments than the Plan, and there would be no regional policies to focus development in existing urban areas and avoid forest and timberlands. Therefore, impacts would be significant and similar to the Plan.

Changes in Environment Convert Farmland

The 2018 RTP/SCS would direct more growth to already urbanized areas, thereby reducing the amount of agricultural lands that would be converted to non-agricultural uses. Under the Trend Alternative, this growth pattern would not occur and a greater amount of agricultural lands could be converted to non-agricultural uses. Therefore, the impact from changes in environment which would result in conversion of farmland would be greater under this alternative. Impacts would be significant.

Air Quality

Criteria Air Pollutants

Short-Term Emissions

Short-term construction emissions of criteria pollutants would occur with implementation of the Trend Alternative. Countywide, it is likely that more than one project would be under construction at any one time, resulting in greater emissions. However, short term emissions would be reduced as compared to the 2018 RTP/SCS due to the reduction in construction projects related to implementation of the 2018 RTP/SCS.

Long-Term Emissions

Emissions of long-term criteria pollutants from mobile sources would be affected by implementation of the Trend Alternative. In order to analyze the net impact of implementation, existing year (2017) emissions were compared to horizon year (2042) emissions.

Results of modeling are presented in **Table 5.0-9 Criteria Pollutant Emissions from Mobile Sources**. As shown, both the 2018 RTP/SCS and the Trend Alternative would result in reductions of reactive organic gases (ROG), sulfur oxides (SOx), oxides of nitrogen (NOx) and carbon monoxide (CO), and reductions of emissions of fine particulate matter (PM2.5) as compared to existing conditions. These would be considered beneficial impacts. Emissions of respirable particulate matter (PM10) from mobile sources show a slight increase over existing conditions. However, as shown in **Table 5.0-9**, the 2018 RTP/SCS would result in greater reductions (i.e., fewer total emissions) for ROG, NOx, CO, PM2.5, and SOx. PM10 would increase under both scenarios. Therefore, impacts related to criteria pollutants would be greater under the Trend Alternative.

Table 5.0-9
Criteria Pollutant Emissions from Mobile Sources – Trend Alternative (2042) vs. 2018 RTP/SCS (2042)

	Tons/Day					
Scenario	**ROG**	**NOx**	**CO**	**PM10**	**PM2.5**	**SOx**
Existing 2017	3.37	10.42	24.56	0.74	0.35	0.06
2018 RTP/SCS 2042	0.99	2.89	6.54	0.75	0.30	0.04
2018 RTP/SCS Net	**-2.38**	**-7.53**	**-18.02**	**0.01**	**-0.05**	**-0.02**
Trend 2042	1.00	2.93	6.61	0.75	0.31	0.05
Trend Net	**-2.37**	**-7.95**	**-7.50**	**0.01**	**-0.05**	**-0.02**

Source: TCAG 2018; EMFAC14

A conformity analysis was prepared for the 2018 RTP/SCS that analyzes emissions of ozone precursors (ROG and NOx), CO, PM10 and PM2.5 compared to the approved emissions budgets for mobile sources in Tulare County. The analysis found that emissions of all pollutants under the Plan passed the applicable conformity tests and would be in conformity with the State Implementation Plans (SIPs). However, both the Plan and Trend Alternatives would generate greater PM10 emissions by 2042. Consequently, the impact from PM10 emissions would be a significant impact. However, the *2007 PM-10 Maintenance Plan* allows for trading of NOx and PM10 emissions at a 1.5 to 1 ratio. Since the PM10 increase associated with the Plan and Trend alternative are relatively small, this would allow PM10 emissions to pass the conformity test under this alternative. Consequently, the increase would not be considered substantial, and the impact related to criteria pollutant emissions would remain less than significant.

Toxic Air Contaminants

Short-Term Emissions

A construction health-risk analysis would be speculative given the lack of a construction location and construction activities. However, it is reasonable to assume that some level of construction activity would occur adjacent to sensitive receptors (e.g., residences and schools). The significant construction emissions identified above could result in adverse health effects to sensitive receptors. As such, it is likely that intense construction activities (e.g., from development projects that involve a high volume of haul trucks) would exceed the health risk significance thresholds due to equipment and truck exhaust emissions. However, short-term construction emissions would be reduced under the Trend Alternative due to a reduction of construction activity within Tulare County as compared to the 2018 RTP/SCS.

Long-Term Emissions

PM2.5 emissions will be used as a proxy for DPM emissions in this analysis as further described in **Section 4.3, Air Quality**. As shown in **Table 5.0-9**, above, emissions of PM2.5 for all mobile sources will be reduced under the Trend Alternative. However, in order to more closely approximate DPM emissions, PM2.5 emissions specifically from heavy-duty diesel vehicles were estimated. The emissions generated under existing conditions as compared to the Trend Alternative are shown in **Table 5.0-10, PM2.5 Emissions from Heavy Duty Diesel Vehicles.**

Table 5.0-10
PM2.5 Emissions from Heavy Duty Diesel Vehicles (tons/day) – Trend (2042) vs. 2018 RTP/SCS (2042)

Existing 2017	2042 Plan	2042 No Project Alternative
0.066	0.066	0.066

Source: TCAG 2018, EMFAC14

As shown in **Table 5.0-10**, the Trend Alternative would generate similar PM2.5 emissions compared to the 2018 RTP/SCS but would be less than under existing conditions. CARB has several programs and regulations in place to reduce DPM emissions state-wide. These programs and regulations would reduce DPM emissions over the period of the 2018 RTP/SCS. Consequently, it can be assumed that the reductions in PM2.5 emissions include reductions in DPM emissions region-wide.

However, on a case-by-case basis RTP improvements may also bring sources of DPM closer to sensitive receptors through construction of new facilities or widened roadways, which could increase exposure of sensitive receptors. There are more highways identified as having a higher AQI rank under the Trend Alternative versus the existing conditions in 2017. The total receptors affected by higher AQI highways for the Trend Alternative would be less than the 2018 RTP/SCS. The 2018 RTP/SCS would locate more housing, and schools near higher traffic highways, but would not change the amount of hospitals near high AQI highways. However, under the Trend Alternative, there would be less hospitals located near medium AQI highways as compared to the 2018 RTP/SCS. Therefore, this qualitative measure indicates that an increased heath risk impact could result from implementation of the 2018 RTP/SCS as more sensitive receptors would be located relatively close to increased truck traffic as compared to the Trend Alternative.

Although PM2.5 emissions would be reduced in Tulare County under the Trend Alternative, more sensitive receptors located next to highways in 2042 than under existing conditions. The projected higher

volume of truck traffic would potentially be increased health risk to certain populations in Tulare County. In addition, given the lack of data regarding industrial and other stationary sources of TACs, it is unknown whether these sources would result in increased emissions of TACs in 2042 compared to existing conditions, and therefore it is unknown what their impact on health risks in Tulare County would be. Consequently, this impact would be considered significant. Overall, impacts from the Trend Alternative would be less than those under the 2018 RTP/SCS, but would remain significant.

Biological Resources

Under the Trend Alternative, fewer areas would be impacted by excavation and construction activities as compared to the Plan. The Trend Alternative would not focus growth in urban areas to the same extent as the Plan. Therefore, the Trend Alternative would result in transportation projects and development taking place over a greater area of land. Specifically, new transportation projects and development would result in 176 acres of critical habitat being consumed, as compared to 144 acres under the Plan. This would result in greater habitat consumption which could include sensitive species habitat, riparian habitat, federally protected wetlands, migratory wildlife corridors, and native wildlife nursery sites. Therefore, biological resource impacts for the Trend Alternative would be greater than the Plan (and would also be significant).

Cultural Resources

Historical Resources

In urban areas, there would still be opportunities for impacts to built historical resources to occur resulting in a significant impact; however due to the greater emphasis on urban development in the Plan, impacts would be less for the Trend Alternative but still significant.

Archeological Resources, Paleontological Resources, and Tribal Cultural Resources

Under the TrendAlternative, there would be a fewer transportation projects than the Plan and the mix of projects and development patterns would extend over a greater area of land. The Trend Alternative would not focus growth in urban areas to the extent of the Plan and therefore could have fewer impacts on built historic resources. The Trend Alternative would not focus growth in urban areas to the same extent as the Plan. This would increase the chance to uncover a previously undisturbed resources such as archeological, paleontological and tribal cultural resources as development would occur in previously undeveloped areas.

Human Remains

The Trend Alternative would also result in significant impacts related to buried resources and impacts could be greater because of the greater area of undeveloped land impacted.

Greenhouse Gas Emissions

The 2018 RTP/SCS includes strategies aimed at increasing the density of land use in Tulare County, thereby reducing per capita VMT and GHG emissions. In all analysis years, emissions would be higher under the Trend Alternative. The first significance threshold for GHG emissions is whether the project would result in emissions that could have a significant impact on the environment. In 2042 mobile source emissions would be 1,683,745 $MTCO_2e$/yr under the Trend Alternative, compared to 1,664,730 $MTCO_2e$/yr under the 2018 RTP/SCS, which is a 1.1 percent increase compared to the 2018 RTP/SCS. Mobile source emissions under 2017 existing conditions are approximately 2,229,808 $MTCO_2e$/yr.[7] Both alternatives would result in greater GHG mobile source emissions than under existing conditions, but Trend emissions would be greater.

The 2018 RTP per capita GHG emissions from cars and light duty trucks would be reduced by 12.8 percent in 2020 and 16.6 percent in 2035 compared to the SB 375 2005 base year. This compares with reductions of 12.1 percent, and 16.1 percent respectively for the Trend Alternative. Consequently, TCAG would meet its targets for GHG reductions under SB 375 with and without the 2018 RTP/SCS. Therefore, impacts would be less than significant for SB 375 and AB 32 for both the Plan and Trend Alternative

The second significance threshold for GHG emissions is whether the project would result in greater emissions than under existing conditions (i.e., would emissions in 2042 be greater than in 2017). As shown in **Table 5.0-4**, in 2042 daily GHG emissions would be 4,613 metric tons of CO_2 equivalents ($MTCO_2e$) under the Trend Alternative, compared to 4,561 $MTCO_2e$ under the 2018 RTP/SCS. The No Trend Alternative would generate less emissions than under existing conditions, but generate more emissions compared to the 2018 RTP/SCS.

Consistency With Plans

The third threshold asks whether the project would hinder progress toward the goals of applicable GHG reductions plans such as AB 32, SB 375, and SB 32 (i.e., would emissions in 2020 be the same as emissions in 1990).

[7] TCAG, 2018 and *EMFAC14*

SB 375

For TCAG, CARB determined that the 2020 target is a 5 percent reduction from 2005 emissions levels, and the 2035 target is a 10 percent reduction. Although implementation of the Trend Alternative would provide less reduction of GHG compared to the 2018 RTP/SCS, this alternative would exceed these GHG reduction targets, providing reductions of 12 percent reduction in 2020 and 16 percent in 2035 (**Table 5.0-11**).

Table 5.0-11
Trend Alternative SB 375 Greenhouse Gas Emissions and VMT Reductions

Indicators & Measures	2005 Baseline	2020 Trend	2035 Trend
Total Population	404,148	488,293	568,186
Vehicle Miles Traveled (VMT)			
VMT per Weekday	8,705,754	9,339,393	10,557,662
Per Capita VMT SB 375	21.54	19.13	18.58
Difference between 2005 Base Per Capita VMT (21.54 miles)	0.0%	-11.21%	-13.74%
SB 375 CO_2 Emissions			
Total SB 375 CO_2 Emissions (tons/day)	3,404	3,610	4,038
Per Capita SB 375 CO_2e Emissions (lbs/day)	18.57	16.30	15.67
Difference between 2005 Base Per Capita CO_2 (18.57 lbs)	0.0%	-12.2%	-15.6%
SB 375 Targets Through September 30, 2018 (3/22/2018)	0.0%	-5.0%	-10.0%

Source: TCAG, 2018.

AB 32

GHG emissions per household would be less under the 2018 RTP/SCS than under the Trend Alternative (13.8 $MTCO_2e$/Year per household compared to 14.8 $MTCO_2e$/Year per household). However, data regarding energy use and therefore GHG emissions from commercial, industrial, agricultural and other sources is not available. While energy use per household would decrease as a result of the more compact land use growth pattern, total energy use as a result of all land use activities would increase substantially between now and 2042.

As shown in **Table 5.0-6,** per capita GHG emissions for the Trend Alternative would be 33 percent below 1990 levels by 2020, and total mobile source GHG emissions are projected to increase by approximately five percent. This is approximately the same level of emissions reduction as compared to the 2018 RTP/SCS.

SB 32

SB 32 sets the statewide GHG emissions reduction target for the year 2030. SB 32 requires a reduction in GHG emissions of 40 percent below 1990 levels. As shown in **Table 5.0-6**, emissions from transportation sources in Tulare County would exceed these targets, providing an increase in emissions in 2020 of five percent, and a decrease in emissions in 2035 of 17 percent. Neither the 2020 nor 2035 projections reduce emissions by 40 percent as compared to 1990 levels. These emission reductions are less than the reductions provided by the 2018 RTP/SCS. Both the 2018 RTP/SCS and the Trend Alternative would have significant impacts with respect conflicting with the state's ability to achieve SB 32 and EO S-3-05 GHG reduction targets. However, in all years emissions under the Plan would be less than under the Trend Alternative. Therefore, impacts associated with SB 32 and EO S-3-05 conflicts would also be less with the 2018 RTP/SCS than the Trend Alternative for all thresholds and all years analyzed.

Land Use

Conflict with Plan, Policy or Regulation

The Trend Alternative would result in a more dispersed land use pattern compared to the Plan. The Trend Alternative would consume an estimated 10,525 acres vacant land, while the Plan would consume 8,884 acres of vacant land. Thus, impacts related to consistency with plans and polices, under the Trend Alternative would be significant (as under the Project).

Disrupt a Community

New roadways and/or the addition of new lanes to existing freeways and roadways have the potential to divide communities. Due to the more dispersed pattern of the Trend Alternative, the Trend Alternative would have fewer impacts on existing uses than the Plan and would be less likely to divide an established community. This would, in part, occur as there are fewer transportation projects in the Trend Alternative, reducing the potential for either short-term construction impacts or long-term land use impacts. The impacts of fewer roadway projects under the Trend would result in fewer impacts as compared to the Plan Alternative. Development impacts are less clear, since under the Plan development would be concentrated in urban areas. In contrast, in the Trend Alternative land uses would change to greater extent in undeveloped areas; as under the Plan impacts would be significant.

Noise

Exposure to Excess Noise Levels, Substantial Permanent or Temporary Increases in Noise

The Trend Alternative would result in a more distributed growth pattern, which would increase noise levels across the County not just in concentrated urban areas. Noise levels would be less concentrated (including urban areas) as there would be less construction and less activity. However, impacts from construction and increased vehicle trips due to population growth would still be significant. The transportation improvements under the 2018 RTP/SCS would help to move traffic more efficiently which could reduce noise in urban areas but not to the point of off-setting increased vehicle trips.

Vibration

Similarly, with vibration in general, vibration impacts can be reduced to a level of less than significance, but as for the 2018 RTP/SCS, there remains the potential for individual projects in the region to result in significant vibration impacts. Thus, impacts related to noise and groundborne vibration under the Trend Alternative would be similar to under the 2018 RTP/SCS and would be significant.

Airport Noise

Similar to the Plan, some land use projects under the Trend Alternative could be located within an area covered by an airport land use plan or in the vicinity of a private airstrip. However, existing plans and regulations, including the Tulare County Comprehensive Airport Land Use Plan (ALUP) and Federal Aviation Administration regulation of airports and airstrips, would minimize noise emissions levels for people residing or working in the project area. Therefore, impacts would be similar to the Plan and less than significant.

Population, Housing and Employment

Induce Population

The Trend Alternative has the same population, household, and employment growth as the Plan. Given that the population, household, and employment growth would be the same at the regional level, the Trend Alternative would have greater impacts with respect to inducing unplanned growth because the Trend would result in more growth in undeveloped areas.

Displacement

The Trend Alternative's growth strategies would not focus the future population in urban areas to the same extent as the Plan. Plan growth strategies would result in more compact development around transit. The Plan would be more likely to result in displacing businesses or homes as development would be focused in urbanized areas. In many of these urbanized areas vacant land is scarce, resulting in a greater potential for projects to displace existing uses. Therefore, impacts under the Trend would be less in urbanized areas. Overall impacts would be greater than the Plan and would remain significant.

Public Services

Police and Fire

The Trend Alternative would result in similar transportation-related public service impacts as compared to the Plan. The Trend Alternative and the Plan alternatives include the same number of population, housing, and jobs that would require police, fire, and emergency facilities. More dispersed patterns of development could result in people located further from existing police and fire facilities, necessitating the construction of new facilities to maintain appropriate response times. The Trend Alternative impacts would be similar to those under the Plan**.** Under the Plan increased density in urban areas could increase demand for new facilities and under the Trend Alternative the dispersed development pattern could result in the need for additional facilities to be constructed (in a more dispersed pattern).

Schools

The Trend Alternative would result in similar demand for school facilities as under the Plan. The Trend may not result in the same level of urbanization as the Plan; however, the same number of students would be generated under both scenarios. Any impacts from construction of new schools would occur at the local level. Project-specific construction and operation impacts are not foreseeable at this time. To the extent that any significant impacts could result from the unique characteristics of a specific project site, those impacts would be speculative at this time. Therefore, impacts associated with the Trend and the Plan would be similar and would be less than significant.

Recreation

The Trend Alternative would accommodate the same increase in total population, households, and jobs as the Plan, but with development occurring in a more dispersed pattern. Therefore, demand for recreational opportunities would also be dispersed throughout the region. The Trend would permit the type of development that could require additional park and recreation facilities be built in a more

dispersed pattern. Under the Trend Alternative, the land use strategies focusing growth in urban areas may not occur to the same extent as under the Plan, although individual jurisdictions may still seek to reduce the urban footprint through their general plans.

Impacts of the Trend Alternative could result in increased demand for construction of new facilities in currently undeveloped areas as compared to the Plan because of the more dispersed growth pattern resulting in more demand for recreational facilities in outlying areas. Although the Plan would increase demand for recreation facilities in urban areas, this demand may be harder to meet as land prices and development may preclude sufficient development of recreation facilities. The determination of the need for and/or location of new construction for such facilities under either the Plan or Trend Alternative would be speculative at this time. In addition, construction of such facilities generally has minor impacts.

The Trend Alternative would have less impact on existing urban parks and recreational facilities and deterioration of such facilities because of a more dispersed growth pattern, however, such impacts would still be significant.

Transportation

Substantial Increases in VMT

Under the Trend Alternative, there would be less transportation infrastructure investment, while growth would continue to occur at forecasted rates. In 2042, the Trend Alternative would result in 12,848,274 VMT as compared to 12,699,425 VMT with the Plan. The Trend Alternative would also result in a less transit and active mode shares compared to the Plan. Additional or worsened impacts would result from this alternative compared to those impacts identified for the Plan. Impacts would be significant.

Conflict with CMP

The Trend Alternative would also result in fewer transit boardings than the Plan, and would decrease use of active modes, while increasing single occupancy/drive alone and high occupancy use. The increased vehicular congestion and the lack of investment in pedestrian and bicycle facilities would result in more roadway segments with unacceptable LOS D and decreases in the performance of Tulare's pedestrian and bicycle facilities. Under the Trend Alternative, traffic volumes would increase and congestion would increase. Therefore, impacts under this alternative would be significant and greater than the Plan.

Change in Air Traffic

Similar to the conclusions of Plan implementation, the Trend Alternative would also not by itself result in changes in air traffic patterns. However, the similar increased population that would occur by 2042 would likely result in increased air traffic. As with the proposed project, iimplementation of the Tulare County Comprehensive Airport Land Use Plan (ALUP) would avoid safety risks associated with air traffic to the extent feasible. The impact to a change in air traffic patterns would similarly be less than significant.

Increase Hazards

Similar to the Plan, the Trend alternative would not result in increased hazards due to design feature (e.g., sharp curves or dangerous intersections) or increase conflicts between incompatible uses (e.g., farm equipment and other vehicular traffic). Design of new transportation facilities, including new pedestrian and bicycle facilities, takes into account potential hazards and avoids risks to the extent feasible. Impacts would be less than significant.

Inadequate Emergency Access

Under the Trend Alternative congestion would increase which could result in travel delay. The fire departments throughout the County are responsible for maintaining adequate response times, and future projects, both transportation and development, would undergo further environmental analysis that would include evaluation and mitigation of impacts to emergency access. Impacts would be less than significant and similar to the Plan.

Conflict with Alternative Transportation Plans

Under the Trend Alternative, there would be less transportation infrastructure investment, while growth would continue to occur at forecasted rates. In 2042, the Trend Alternative would result in more VMT as compared to the Plan. The No Project Alternative would also result in less transit use and use of active mode shares compared to the Plan. Additional and/or worsened significant impacts would result from this alternative compared to those impacts identified for the Project. The increased vehicular congestion and the lack of investment in pedestrian and bicycle facilities would result in decreases in the performance of Tulare's pedestrian and bicycle facilities. Impacts would be greater than the Plan.

Utilities

Energy

Wasteful Inefficient Use of Energy

Since the Trend Alternative includes fewer transportation projects than the 2018 RTP/SCS, it would have more of an impact related to the need for expanded or newly constructed energy facilities to serve the d dispersed development accompanying population growth in the region due to less emphasis on TPAs. In addition, since fewer public transit options would be available than under the 2018 RTP/SCS and congestion would increase, use of petroleum fuel for personal vehicles would be greater, as indicated in **Table 5.0-12**.

Table 5.0-12
Gasoline and Diesel Consumption – Trend (2042) vs. 2018 RTP/SCS (2042)

Scenario	Vehicle Miles Travelled	Daily Gasoline Consumption (thousand gallons)	Daily Diesel Consumption (thousand gallons)
Trend (2042)	12,848,274	275.76	183.01
2018 RTP/SCS (2042)	12,699,425	272.67	180.89

Source: TCAG 2018, EMFAC 2014

The Trend Alternative would accommodate the same increase in total population, households, and jobs as the 2018 RTP/SCS. However, as shown in **Table 5.0-13**, the total energy consumption under the Trend Alternative would be greater than under the 2018 RTP/SCS.

Table 5.0-13
Residential and Commercial Energy Consumption from New Growth – Trend (2042) vs. Plan (2042)

Alternative	Energy Use per Household (Million BTU Per Year)
Trend (2042)	158.9
2018 RTP/SCS (2042)	148.3

Source: TCAG, 2018.

Unlike the Trend Alternative, the 2018 RTP/SCS includes strategies to focus growth in TPAs, which would help reduce the number of new energy facilities or expansion of existing facilities that need to be constructed. This is because the 2018 RTP/SCS would accommodate the same population by constructing higher density development with infill and mixed use projects. Infill and mixed-use developments are generally higher efficiency dwellings accounting for the reduction in total energy consumption seen in **Table 5.0-13**. The Trend Alternative would permit dispersed development which could require additional electricity and natural gas facilities to serve a more dispersed land use pattern which could necessitate new or expanded facilities to serve additional areas. Lower density development would be dispersed throughout Tulare County under the Trend Alternative to satisfy the same population growth. Under the Trend Alternative, the 2018 RTP/SCS land use strategies may not occur, although individual jurisdictions may still seek to reduce the urban footprint through their general plans. It is also possible that increased density in urban areas could put additional pressure on energy providers to increase capacity to these areas resulting in additional impacts. However, as in general, energy use would be more efficient (on a per capita basis), with the 2018 RTP/SCS, impacts would be greater with the Trend Alternative. Impacts to energy under the Trend Alternative would be significant as under the 2018 RTP/SCS.

Electricity and Natural Gas Use

The Trend Alternative would accommodate the same increase in total population, households, and jobs as the Plan, but with development occurring in a more dispersed pattern and no regional transportation investments would be made above the existing programmed projects. The population distribution would follow past trends, uninfluenced by the Plan's emphasis on TPAs, which would result in greater consumption of open space areas. Therefore, demand for electricity and natural gas would be more dispersed and not focused in urban areas. The Trend Alternative would permit dispersed development which could require additional electricity and natural gas facilities to be built in a more dispersed pattern. Under the Trend Alternative, the TPA land use strategies may not occur, although individual jurisdictions may still seek to reduce the urban footprint through their general plans. Similar to the proposed project, the Trend Alternative would result in an overall increase in electricity and natural gas demand due to increased population and economic growth .Impacts would be significant and greater than the Plan.

Wastewater

Similar to the Plan, the Trend Alternative would not exceed treatment requirements by the applicable RWQCB due to compliance with NPDES regulations.

Expansion of existing facilities or construction of new facilities would be necessary under the Plan to accommodate increases in population in urban areas and concentrated growth patterns. Under the Trend Alternative, land use strategies to focus more growth in existing urban areas may not occur to the same extent as the Project, although individual jurisdictions may still seek to reduce the urban footprint through their general plans. As with the Project, construction of new wastewater treatment facilities would also be necessary under the Trend Alternative to service the more dispersed growth pattern. Therefore, impacts would be similar with the Trend Alternative compared to the Plan. With a more dispersed growth pattern, existing sewer lines in existing urban areas would not be as impacted, although new sewer lines would be needed to serve the more dispersed growth pattern. The cost of sewer line connections for development projects on the periphery of the urban area can be significantly less than expanding capacity of existing sewer lines in urban core areas. The resulting lower cost of sewer capacity on the periphery means that providing additional capacity can be easier in these areas than in existing urban areas. Compared to the Plan, impacts related to wastewater could be less but would remain significant.

Solid Waste

The more compact growth pattern of the Plan would likely generate less solid waste than the more dispersed pattern of the Trend Alternative due to greater efficiencies of compact development. However, as the growth strategies included in the Plan would not occur to the same extent with the Trend Alternative, longer distances could occur between development and landfill facilities and/or garbage collection would require that collection trucks travel greater distances to collect waste from the more distributed land use pattern.

The Trend Alternative would accommodate the same increase in total population, households, and jobs as the Plan. However, the Plan focuses growth in urban areas to a greater extent than the Trend Alternative, which would help reduce the impact to solid waste facilities. Therefore, impacts to landfills could be greater under the Trend Alternative; impacts would be significant as for the Plan.

Water Supply and Hydrology

Under the Trend Alternative, more areas would be impacted by excavation and construction activities related to transportation projects and development as compared to the Plan. The Trend Alternative would not focus growth in urban areas to the same extent as the Plan. Therefore, the Trend Alternative would result in development patterns consuming a greater amount of land. Specifically, development under the Trend Alternative would result in 10,525 acres of undeveloped land consumption, as compared

to 8,884 under the Plan thereby increasing the amount of impervious surfaces and increasing impacts to water quality and groundwater.

Due to a more dispersed growth pattern, the Trend Alternative's impacts to flood risk would be greater than those associated with the Plan. Flooding impacts would generally be site specific although with greater consumption of vacant land, the Trend Alternative has a greater risk of locating development in flood prone areas.

Regarding groundwater recharge, the Trend Alternative would include fewer new lane miles, which could result in more permeable surface area available, compared to the Plan. However, the Trend alternative would result in greater land consumption 10,525 acres compared to 8,884 acres under the Plan. As a result, there would be fewer opportunities for groundwater recharge and impacts would be significant and greater than the Plan.

As compact development is generally more water efficient the Trend Alternative would be less efficient and result in more water use overall. Therefore, the Trend Alternative impacts to water resources would be greater than the impacts from the Plan and would remain significant as under the Plan.

Overall the Plan would result in fewer impacts to water resources as a result of a compact growth pattern that would result in less impervious surfaces and less demand for water. Thus, impacts to water resources under the Trend Alternative would be greater than the Plan (and would remain significant).

5.2.8 Analysis of Alternative 3 – Old Plan

Aesthetics

Scenic Vistas and Resources

The Old Plan alternative includes a slightly modified transportation network without the same level of transportation improvements as the Plan. Therefore, under the Old Plan Alternative, the construction of roadways would result in opportunities for impacts to eligible State Scenic Highways and vistas similar to the Plan. Impacts would be significant and similar to the Plan.

Visual Character

Since the Old Plan Alternative includes fewer transportation projects than the proposed RTP/SCS, it would have less of an impact in terms of adding contrasting visual elements to existing natural, rural, and open space areas. The Plan includes strategies to focus growth in TPAs, which would help reduce the consumption and disturbance of natural lands and reduce impacts to visual character. Under the Old

Plan Alternative, these land use strategies may not occur to the same extent as the Plan, although individual jurisdictions may still seek to reduce the urban footprint through their general plans. The land use planning strategies included in the proposed 2018 RTP/SCS would reduce consumption of vacant, open space/recreation and agricultural lands compared to the Old Project Alternative. The Old Project Alternative visual character impacts would be greater than the Plan impacts because of the increased consumption of open space, vacant land, and interspersed transportation infrastructure. Impacts would be significant.

Light and Glare

The Old Plan Alternative would not include urban form strategies to the same extent as the Plan. Nighttime lighting impacts would be greater, as more vacant land would be consumed under the Old Plan Alternative (9,110 acres compared to 8,884 acres under the Plan) since lighting impacts are most pronounced in rural areas. Therefore, the Old Plan Alternative would result in greater impacts to light and glare than the Plan and impacts would be significant (as they would be for the Plan).

A*gricultural Resources*

Farmland

The Old Plan would include generally the same land use and transportation network as the Plan. The Old Plan Alternative would encourage a compact development pattern and would consume a total of 1,403 acres of farmland (compared to 1,518 acres under the Plan). Therefore, impacts associated with the Old Plan would be slightly reduced compared to the Plan, as fewer acres of farmland would be consumed. Impacts would still be significant.

Williamson Act

The Old Plan Alternative would have similar potential for creating conflicts with General Plans and other land use regulations. Further, the Old Plan Alternative would include a similar land use scenario as the Plan and the 2014 SCS strategies that focus growth in urban areas. The impact from conversion of agricultural land and conflicts with Williamson Act contracts would be similar to the Plan under this alternative. However, as the Old Plan would result in fewer acres of farmland consumed, this impact is considered less than the Plan but still significant.

Forest and Timberland

It is unlikely that land currently defined and zoned as forest land or timberland would be converted to residential as County polices and policies of other jurisdictions focus development in already developed

areas. However, the potential remains for development to occur in forest or timberland areas. The Old Plan would result in a slight increase in the number of vacant acres consumed (9,110 compared to 8,884 with the Plan). As a result, impacts would be significant and would be slightly greater with the Old Plan.

Changes in Environment Convert Farmland

The Old Plan alternative would consume fewer acres of farmland than the Plan (1,403 acres compared to 1,518 acres) but a greater number of acres of vacant land (9,110 acres compared to 8,884). On balance, impacts would generally be similar to the Plan and would remain significant. .

Air Quality

Criteria Air Pollutants

Short-Term Emissions

Short-term construction emissions of criteria pollutants would occur with implementation of the Old Plan Alternative. Short-term emissions would be similar to the 2018 RTP/SCS but might be slightly reduced due to the minor reduction in construction projects compared to the 2018 RTP/SCS.

Long-Term Emissions

Emissions of long-term criteria pollutants from mobile sources would be affected by implementation of the Old Plan Alternative. In order to analyze the net impact of implementation, existing year (2017) emissions were compared to horizon year (2042) emissions.

Results of modeling are presented in **Table 5.0-14, Criteria Pollutant Emissions from Mobile Sources**. As shown, both the 2018 RTP/SCS and the Old Plan Alternative would result in reductions of reactive organic gases (ROG), sulfur oxides (SOx), oxides of nitrogen (NOx) and carbon monoxide (CO), and reductions of emissions of fine particulate matter (PM2.5) as compared to existing conditions. These would be considered beneficial impacts. Emissions of respirable particulate matter (PM10) from mobile sources show a slight increase over existing conditions. However, as shown in **Table 5.0-14**, the 2018 RTP/SCS would result in greater reductions (i.e., fewer total emissions) for ROG, NOx, CO, PM2.5, and SOx. PM10 would increase under both Alternatives. Therefore, impacts related to criteria pollutants would be greater under the Trend Alternative.

Table 5.0-14
Criteria Pollutant Emissions from Mobile Sources – Old Plan Alternative (2042) vs. 2018 RTP/SCS (2042)

	Tons/Day					
Alternative	**ROG**	**NOx**	**CO**	**PM10**	**PM2.5**	**Sox**
Existing 2017	3.37	10.42	24.56	0.74	0.35	0.06
2018 RTP/SCS 2042	0.99	2.89	6.54	0.75	0.30	0.04
2018 RTP/SCS Net	**-2.38**	**-7.53**	**-18.02**	**0.01**	**-0.05**	**-0.02**
Old Plan 2042	1.00	2.93	6.63	0.75	0.31	0.05
Old Plan Net	**-2.37**	**-7.49**	**-17.93**	**0.01**	**-0.05**	**-0.01**

Source: TCAG 2018.

A conformity analysis was prepared for the 2018 RTP/SCS that analyzes emissions of ozone precursors (ROG and NOx), CO, PM10 and PM2.5 compared to the approved emissions budgets for mobile sources in Tulare County. The analysis found that emissions of all pollutants under the Plan passed the applicable conformity tests and would be in conformity with the State Implementation Plans (SIPs). However, both the Plan and Old Plan Alternatives would generate greater PM10 emissions by 2042. Consequently, the impact from PM10 emissions would be a significant impact. However, the *2007 PM-10 Maintenance Plan* allows for trading of NOx and PM10 emissions at a 1.5 to 1 ratio. Since the PM10 increase associated with the Plan and Old Plan alternative are relatively small, this would allow PM10 emissions to pass the

conformity test under this alternative. Consequently, the increase would not be considered substantial, and the impact related to criteria pollutant emissions would remain less than significant.

Toxic Air Contaminants

Short-Term Emissions

A construction health risk analysis would be speculative given the lack of a construction location and construction activities. However, it is reasonable to assume that some level of construction activity would occur adjacent to sensitive receptors (e.g., residences and schools). The significant construction emissions identified above could result in adverse health effects to sensitive receptors. As such, it is likely that intense construction activities (e.g., from development projects that involve a high volume of haul trucks) would exceed the health risk significance thresholds due to equipment and truck exhaust emissions. However, short-term construction emissions would be incrementally reduced under the Old Plan Alternative due to a minor reduction of construction activity as compared to the 2018 RTP/SCS.

Long-Term Emissions

As shown in **Table 5.0-14**, above, emissions of PM2.5 for all mobile sources will be reduced under the Old Plan Alternative. However, in order to more closely approximate DPM emissions, PM2.5 emissions specifically from heavy-duty diesel vehicles were estimated. The emissions generated under existing conditions as compared to the Old Plan Alternative are shown in **Table 5.0-15, PM2.5 Emissions from Heavy Duty Diesel Vehicles.**

Table 5.0-15
PM2.5 Emissions from Heavy Duty Diesel Vehicles (tons/day) – Trend (2042) vs. 2018 RTP/SCS (2042)

Existing 2017	2042 RTP Plan	2042 Old Plan
0.066	0.066	0.066

Source: TCAG 2018, EMFAC14

As shown in **Table 5.0-15**, the Old Plan Alternative would generate similar PM2.5 emissions compared to the 2018 RTP/SCS but would be less than under existing conditions. CARB has several programs and regulations in place to reduce DPM emissions state-wide. These programs and regulations would reduce DPM emissions over the period of the 2018 RTP/SCS. Consequently, it can be assumed that the reductions in PM2.5 emissions include reductions in DPM emissions region-wide.

However, on a case-by-case basis RTP improvements may also bring sources of DPM closer to sensitive receptors through construction of new facilities or widened roadways, which could increase exposure of sensitive receptors. There are more highways identified as having a higher AQI rank under the Old Plan Alternative versus existing conditions in 2017. The total receptors affected by higher AQI highways for the Old Plan Alternative would also be greater than the 2018 RTP/SCS with an additional 128 households, although the Old Plan would result in two fewer schools with a "high" AQI ranking. Therefore, this qualitative measure indicates that an increased heath risk impact could result from implementation of the Old Plan as a greater number of sensitive receptors would be located relatively close to increased truck traffic as compared to the Trend Alternative.

Although PM2.5 emissions would be reduced in Tulare County under the Old Plan Alternative, a greater number of sensitive receptors (households) would be located next to highways in 2042 than under existing conditions. The projected higher volume of truck traffic would potentially result in increased health risk to certain populations in Tulare County. Consequently, this impact would be considered significant. Overall impacts from the Old Plan alternative would be greater than those under the 2018 RTP/SCS as the 2018 RTP/SCS would result in greater emissions reductions and fewer household in high AQI areas, however, impacts would remain significant.

Biological Resources

Species Identified as a Candidate, Sensitive, or Special-Status Species

Under the Old Plan Alternative, a similar number of projects would be constructed compared to the 2018 RTP/SCS. Further, the Old Plan Alternative would include a similar land use scenario as the Plan as the 2014 SCS strategies that focus growth in urban areas would continue under this alternative. The Old Plan would result in the same number of acres of critical habitat being consumed (144 acres under both), but a slight increase in the number of acres of vacant land (9,110 acres compared to 8,884 acresunder the Plan). Similar to the proposed project, implementation of the Old Plan Alternative would have significant impacts to special status species.

Sensitive Natural Communities and Federally-Protected Wetlands

Because the Old Plan Alternative includes a similar amount of critical habitat consumed and a similar dispersed land use pattern, it is likely that a similar number acres of wetlands and sensitive natural communities would be affected with the Old Project Alternative as compared to the Plan. As a result, impacts would be significant and similar to the Plan.

Wildlife Movement

Direct impacts to wildlife movement include increased noise and human presence during construction, as well as increased trash, which may attract predators to the project site and discourage wildlife use of surrounding natural habitat. Increased roadway traffic, due to the division of habitat and corridors, may affect surrounding wildlife and lead to increased wildlife mortality. The Old Plan Alternative includes a similar number of projects as the 2018 RTP/SCS and therefore would also result in direct impacts to wildlife movement and impacts to wildlife movement by habitat modification. Therefore, impacts under the Old Plan Alternative would be significant and similar to the 2018 RTP/SCS.

Preservation Plans

The Old Plan Alternative would result in similar impacts to vacant land and critical habitat consumption that would increase biological resources impacts and the potential to conflict with ordinances and plans regarding biological resources. Therefore, there would be similar impacts as under the 2018 RTP/SCS.

Cultural Resources

Historical Resources

Under the Old Plan Alternative, the transportation and land use scenarios would be generally the same as the 2018 RTP/SCS with some minor adjustments. Therefore, impacts under the Old Plan would result in similar impacts as the Plan. In urban areas, there would still be opportunities for impacts to build historical resources to occur resulting in a significant impact; however due to the greater emphasis on urban development in the Plan, impacts would be less for the Old Plan Alternative but still significant.

Archeological and Paleontological Resources, Human Remains, and Tribal Cultural Resources

Under the Old Plan there would be a slight increase in the number of acres of vacant land that would be consumed which would increase the chance to uncover previously undisturbed resources such as archeological, paleontological and tribal cultural resources as development would occur in previously undeveloped areas. As such, the Old Plan Alternative would also result in significant impacts related to human remains and impacts could be greater because of the greater area of undeveloped land impacted.

Greenhouse Gas Emissions

GHG Emissions Estimates

Similar to the 2018 RTP/SCS, the 2014 RTP/SCS includes strategies aimed at increasing the density of land use in Tulare County, thereby reducing per capita VMT and GHG emissions. In all analysis years, emissions would be higher under the Old Plan Alternative. The first significance threshold for GHG emissions is whether the project would result in emissions that could have a significant impact on the environment. In 2042 mobile source emissions would be 1,669,134 $MTCO_2e$/yr under the Old Project Alternative, compared to 1,664,730 $MTCO_2e$/yr under the 2018 RTP/SCS, which is a 0.3 percent increase compared to the 2018 RTP/SCS. Mobile source emissions under 2017 existing conditions are approximately 2,229,808 $MTCO_2e$/yr.[8] Both the Old Plan and the Plan scenarios would result in greater GHG mobile source emissions than under existing conditions.

The 2018 RTP per capita GHG emissions from cars and light duty trucks would be reduced by 12.8 percent in 2020 and 16.6 percent in 2035 compared to the SB 375 2005 base year. This compares with reductions of 12.1 percent, and 16.1 percent respectively for the Old Project Alternative. Consequently, TCAG would meet its targets for GHG reductions under SB 375 with and without the 2018 RTP/SCS. Therefore, impacts would be less than significant for consistency with SB 375 and AB 32 for both the Plan and Old Project Alternative.

The second significance threshold for GHG emissions is whether the project would result in greater emissions than under existing conditions (i.e., would emissions in 2042 be greater than in 2017). As shown in **Table 5.0-4**, in 2042 daily GHG emissions would be 4,636 metric tons of CO_2 equivalents ($MTCO_2e$) under the Old Plan Alternative, compared to 4,561 $MTCO_2e$ under the 2018 RTP/SCS. The Old Plan Alternative would generate less emissions than under existing conditions, but generate more emissions compared to the 2018 RTP/SCS.

Consistency With Plans

The third threshold asks whether the project would hinder progress toward the goals of applicable GHG reductions plans such as AB 32, SB 375, and SB 32 (i.e., would emissions in 2020 be the same as emissions in 1990).

[8] TCAG, 2018 and *EMFAC14*

SB 375

For Tulare County, CARB determined that the 2020 target is a 5 percent reduction from 2005 emissions levels, and the 2035 target is a 10 percent reduction. Although implementation of the Old Plan Alternative would provide less reduction of GHG compared to the 2018 RTP/SCS, this alternative would exceed these GHG reduction targets, providing reductions of 13 percent reduction in 2020 and 14 percent in 2035 (**Table 5.0-16**).

Table 5.0-16
Old Plan Alternative SB 375 Greenhouse Gas Emissions and Vehicle Trips Reductions

Indicators & Measures	2005 Baseline	2020 Old Plan	2035 Old Plan
Total Population	404,148	488,293	568,186
Vehicle Miles Traveled (VMT)			
VMT per Weekday	8,705,754	9,313,321	10,678,457
Per Capita VMT SB 375	21.54	19.07	18.79
Difference between 2005 Base Per Capita VMT (21.54 miles)	0.0%	-11.46%	-12.75%
SB 375 CO_2 Emissions			
Total SB 375 CO_2 Emissions (tons/day)	3,404	3,600	4,094
Per Capita SB 375 CO_2e Emissions (lbs/day)	18.57	16.25	15.89
Difference between 2005 Base Per Capita CO_2 (18.57 lbs)	0.0%	-12.5%	-14.4%
SB 375 Targets Through September 30, 2018 (3/22/2018)	0.0%	-5.0%	-10.0%
SB 375 Targets Through October 1, 2018 (3/22/2018)	0.0%	-13.0%	-16%

Source: TCAG, 2018.

AB 32

GHG emissions per household would be approximately the same under the 2018 RTP/SCS than under the Old Plan Alternative (13.8 $MTCO_2e$/Year per household compared to 13.8 $MTCO_2e$/Year per household). However, data regarding energy use and therefore GHG emissions from commercial, industrial, agricultural and other sources is not available. While energy use per household would decrease as a result of the more compact land use growth pattern, total energy use as a result of all land use activities would increase substantially between now and 2042.

As shown in **Table 5.0-6,** per capita GHG emissions for the Old Plan Alternative would be 33 percent below 1990 levels by 2020, total mobile source GHG emissions are projected to increase by approximately four percent. This is approximately the same level of emissions reduction as compared to the 2018 RTP/SCS.

SB 32

SB 32 sets the statewide GHG emissions reduction target for the year 2030; similar to AB 32 setting statewide GHG emissions reduction target for the year 2020. SB 32 requires a reduction in GHG emissions of 40 percent below 1990 levels. As shown in **Table 5.0-6**, emissions from transportation sources in Tulare County would not meet these targets, providing an increase in emissions in 2020 of five percent, and a decrease in emissions in 2035 of 17 percent. Neither the 2020 nor 2035 projections reduce emissions by 40 percent as compared to 1990 levels. These emission reductions are less than the reductions provided by the 2018 RTP/SCS. Both the 2018 RTP/SCS and the Old Project Alternative would have significant impacts with respect conflicting with the state's ability to achieve SB 32 and EO S-3-05 GHG reduction targets. However, in all years emissions under the Plan would be less than under the Old Project Alternative. Therefore, impacts associated with SB 32 and EO S-3-05 conflicts would also be less with the 2018 RTP/SCS than the Old Plan Alternative for all thresholds and all years analyzed.

Land Use

Conflict with Plan, Policy or Regulation

The Old Plan Alternative would result in similar land use pattern as compared to the Plan. The Old Plan Alternative would consume an estimated 9,110 acres of undeveloped land, while the Plan would consume 8,884 acres of vacant land. Thus, impacts related to consistency with plans and polices, under the Old Alternative would be significant (as under the Project).

Disrupt a Community

New roadways and/or the addition of new lanes to existing freeways and roadways have the potential to divide communities. Due to the slightly more dispersed pattern of the Old Plan Alternative, the Old Plan Alternative would have fewer impacts on existing uses than the Plan and would be less likely to divide an established community. This would, in part, occur as there are fewer transportation projects in the Old Plan Alternative, reducing the potential for either short-term construction impacts or long-term land use impacts. The impacts of fewer roadway projects under the Old Plan would result in fewer impacts as compared to the Plan Alternative. Development impacts are less clear, since under the Plan development would be concentrated in urban areas. In contrast, in the Old Plan Alternative land uses would change to greater extent in undeveloped areas; as under the Plan impacts would be significant.

Noise

Exposure to Excess Noise Levels, Substantial Permanent or Temporary Increases in Noise

The Old Plan Alternative would result in a slightly more distributed growth pattern, which would increase noise levels across the County not just in concentrated urban areas. Noise levels would be less concentrated (including urban areas) as there would be less construction and less activity. However, impacts from construction and increased vehicle trips due to population growth would still be significant.

Vibration

The transportation improvements under the 2018 RTP/SCS and the Old Plan would help to move traffic more efficiently which could reduce vibration in urban areas but not to the point of off-setting increased vehicle trips. Similarly, with vibration in general, vibration impacts can be reduced to a level of less than significance, but as for the 2018 RTP/SCS, there remains the potential for individual projects in the region to result in significant vibration impacts. Thus, impacts related to noise and groundborne vibration under the Old Plan Alternative would be similar to under the 2018 RTP/SCS and would be significant.

Airport Noise

Similar to the Plan, some land use projects under the Old Project Alternative could be located within an area covered by an airport land use plan or in the vicinity of a private airstrip. However, the 2014 RTP/SCS and existing plans and regulations, including the Tulare County Comprehensive Airport Land Use Plan (ALUP) and Federal Aviation Administration regulation of airports and airstrips, would minimize noise emissions levels for people residing or working in the project area. Therefore, impacts would be similar to the Plan and less than significant.

Population, Housing and Employment

Induce Population

The Old Plan Alternative has the same population, household, and employment growth as the Plan. Given that the population, household, and employment growth would be the same at the regional level, the Old Plan Alternative would have similar although potentially greater impacts with respect to inducing unplanned growth because the Old Plan would not have strategies to focus growth in TPAs.

Displacement

The Old Plan Alternative's growth strategies would also focus future population in urban areas to a similar extent as the Plan. Plan growth strategies would result in a slightly more compact development around transit due to refinements in the land use strategies and the addition of some new transportation projects. Both alternatives are likely to result in displacing businesses or homes as development would be focused in urbanized areas. In many of these urbanized areas vacant land is scarce, resulting in a greater potential for projects to displace existing uses. Therefore, impacts under the Old Plan would be similar in urbanized areas. Overall impacts would be similar to the Plan and would remain significant.

Public Services

Police and Fire

The Old Plan Alternative would result in similar transportation-related public service impacts as compared to the Plan. The Old Plan Alternative and the Plan alternatives include the same number of population, housing, and jobs that would require police, fire, and emergency facilities. A slightly more dispersed pattern of development, as would occur under the Old Plan, could result in people located further from existing police and fire facilities, necessitating the construction of new facilities to maintain appropriate response times. The determination of the need for and/or location of new construction for such facilities under either the Plan or Old Plan Alternative would be speculative at this time. In addition, construction of such facilities generally has minor impacts. The Old Project impacts would be similar to those under the Plan for police and fire services and new facilities.

Schools

The Old Plan Alternative would result in similar demand for school facilities as under the Plan. The Old Plan may not result in the same level of urbanization as the Plan; however, the same number of students would be generated under both scenarios. Any impacts from construction of new schools would occur at the local level. Therefore, impacts associated with the Old Plan and the Plan would be similar and would be less than significant.

Recreation

The Old Plan Alternative would accommodate the same increase in total population, households, and jobs as the Plan, but with development occurring in a slightly more dispersed pattern. Therefore, demand for recreational opportunities would also be more dispersed throughout the region. Under the Old Plan Alternative, the land use strategies focusing growth in urban areas may not occur to the same extent as

under the Plan, although individual jurisdictions may still seek to reduce the urban footprint through their general plans.

Both the Plan and the Old Plan Alternative would increase demand for recreation facilities in urban areas, this demand may be harder to meet as land prices and development may preclude sufficient development of recreation facilities. Similar to the impact of Plan implementation, implementation of the Old Project Alternative would be less than significant.

Transportation

Substantial Increases in VMT

Under the Old Plan Alternative, there would be less transportation infrastructure investment, while growth would continue to occur at forecasted rates. In 2042, the Old Plan Alternative would result in 12,897,144 VMT as compared to 12,699,425 VMT with the Plan. Additional or worsened impacts would result from this alternative compared to those impacts identified for the Plan.

Conflict with CMP

Under the Plan, compared to existing conditions, traffic volumes would increase throughout the region and congestion would increase regionwide, especially in urban areas. Under the Old Plan Alternative, increased vehicular congestion would result in more roadway segments with unacceptable LOS D. Therefore, traffic volumes would similarly increase and congestion would increase. Therefore, a similar significant impact would occur under this alternative.

Change in Air Traffic

Similar to the conclusions of Plan implementation, the Old Plan Alternative would also not by itself result in changes in air traffic patterns. However, the similar increased population that would occur by 2042 would likely result in increased air traffic. As with the proposed project, iimplementation of the Tulare County Comprehensive Airport Land Use Plan (ALUP) would avoid safety risks associated with air traffic to the extent feasible. The impact to a change in air traffic patterns would similarly be less than significant.

Increase Hazards

Similar to the Plan, the Old Plan Alternative would not result in increased hazards due to design feature (e.g., sharp curves or dangerous intersections) or increase conflicts between incompatible uses (e.g., farm equipment and other vehicular traffic). Design of new transportation facilities, including new pedestrian

and bicycle facilities, takes into account potential hazards and avoids risks to the extent feasible. Impacts would be less than significant.

Inadequate Emergency Access

Under the Old Plan Alternative congestion would increase which could result in travel delay. The fire departments throughout the County are responsible for maintaining adequate response times, and future projects, both transportation and development, would undergo further environmental analysis that would include evaluation and mitigation of impacts to emergency access. Impacts would be less than significant and similar to the Plan.

Conflict with Alternative Transportation Plans

Under the Old Plan Alternative, there would be less transportation infrastructure investment, while growth would continue to occur at forecasted rates. In 2042, the Old Plan Alternative would result in more VMT as compared to the Plan. The Old Plan Alternative would also result in less transit use and use of active mode shares compared to the Plan. Additional and/or worsened significant impacts would result from this alternative compared to those impacts identified for the Project. The increased vehicular congestion and the lack of investment in pedestrian and bicycle facilities would result in decreases in the performance of Tulare's pedestrian and bicycle facilities. Impacts would be greater than the Plan.

Utilities

Energy

Wasteful Inefficient Use of Energy

The Old Plan Alternative would accommodate the same increase in total population, households, and jobs as the 2018 RTP/SCS. However, as shown in **Table 5.0-17**, petroleum fuel for personal vehicles would be greater under the Old Plan.

Table 5.0-17
Gasoline and Diesel Consumption – Old Plan (2042) vs. 2018 RTP/SCS (2042)

Alternative	Vehicle Miles Travelled	Daily Gasoline Consumption (thousand gallons)	Daily Diesel Consumption (thousand gallons)
Old Plan (2042)	12,897,144	277.34	183.71
2018 RTP/SCS (2042)	12,699,425	272.67	180.89

Source: TCAG 2018, EMFAC 2014

The Old Plan Alternative would accommodate the same increase in total population, households, and jobs as the 2018 RTP/SCS. However, as shown in **Table 5.0-18**, the total energy consumption under the Old Plan Alternative would be slightly less than under the 2018 RTP/SCS.

Table 5.0-18
Household Energy Use –Old Plan (2042) vs. Plan (2042)

Alternative	Energy Use per Household (Million BTU Per Year)
Old Plan (2042)	148.1
2018 RTP/SCS (2042)	148.3

Source: TCAG, 2018.

Impacts to energy under the Old Plan Alternative would be significant as under the 2018 RTP/SCS.

Electricity and Natural Gas Use

The Old Plan Alternative would accommodate the same increase in total population, households, and jobs as the Plan, but with development occurring in a slightly more dispersed pattern. Therefore, demand for electricity and natural gas under this alternative would be slightly more dispersed and less focused in urban areas. Under the Old Plan Alternative, the TPA land use strategies may not occur, although individual jurisdictions may still seek to reduce the urban footprint through their general plans. As the land use pattern would be generally the same as the Plan (although less compact), the need for new or expanded facilities would be similar to the Plan. Similar to the proposed project, the Old Plan Alternative would result in an overall increase in electricity and natural gas demand due to increased population and economic growth.

Wastewater

Similar to the Plan, the Old Plan Alternative would not exceed treatment requirements by the applicable RWQCB due to compliance with NPDES regulations.

Expansion of existing facilities or construction of new facilities would be necessary under the Plan to accommodate increases in population in urban areas and concentrated growth patterns. Under the Old Plan Alternative, land use strategies to focus more growth in existing urban areas may not occur to the same extent as the Plan, although individual jurisdictions may still seek to reduce the urban footprint through their general plans. As with the Project, construction of new wastewater treatment facilities would also be necessary under the Old Plan Alternative to service the more dispersed growth pattern. Therefore, impacts would be similar with the Old Plan Alternative compared to the Plan. Compared to the Plan, impacts related to wastewater would be similar and would remain significant.

Solid Waste

The similar growth patterns under the Plan and Old Plan would generate similar amounts of waste. The Old Plan Alternative would accommodate the same increase in total population, households, and jobs as the Plan. However, the Plan focuses growth in urban areas to a greater extent than the Old Plan, which would help reduce the impact to solid waste facilities. Therefore, impacts to landfills could be greater under the Old Plan Alternative; impacts would be significant as for the Plan.

Water Supply and Hydrology

Under the Old Plan Alternative, more areas would be impacted by excavation and construction activities related to transportation projects and development as compared to the Plan. The Old Plan Alternative would not focus growth in urban areas to the same extent as the Plan. Therefore, the Old Plan Alternative would result in development patterns consuming a greater amount of land. Specifically, development under the Old Plan Alternative would result in 9,110 acres of undeveloped land consumption, as compared to 8,884 under the Plan thereby increasing the amount of impervious surfaces and increasing impacts to water quality and groundwater.

Due to a slightly more dispersed growth pattern, the Old Plan Alternative's impacts to flood risk would be greater than those associated with the Plan. Flooding impacts would generally be site specific although with greater consumption of vacant land, the Old Plan Alternative has a greater risk of locating development in flood prone areas.

With regard to groundwater recharge, the Old Plan would include a similar number of lane miles and a slightly less compact growth pattern. Comparatively there would be an increase in total acres consumed (9,110 acres under the Old Plan) compared to the Plan (8,884 acres). Overall, the Plan would result in similar impacts to water resources as a result of a similar land use patterns and similar demands for water. Thus, impacts to water resources under the Old Plan Alternative would be the same as the Plan and would remain significant.

5.2.9 Analysis of Alternative 4 – Blueprint Plus

Aesthetics

Scenic Vistas and Resources

Under the Blueprint Plus Alternative more aggressive growth strategies would be applied to the region. Impacts related to eligible State Scenic Highways and vistas would generally be the same as the Plan since Blue print Plus would include similar transportation networks, however the Blueprint Plus would accelerate implementation of transit, bike and pedestrian facilities.

Visual Character

Since the Blueprint Plus Alternative includes a greater number of transportation projects than the proposed RTP/SCS, it would have more of an impact in terms of adding contrasting visual elements to existing natural, rural, and open space areas. The Plan includes strategies to focus growth in TPAs, which would help reduce the consumption and disturbance of natural lands and reduce impacts to visual character. Under the Blueprint Plus Alternative, these land use strategies would be intensified to increase density and transit in urban areas. The Plan includes transportation improvements that facilitate access to undeveloped lands, making those lands more attractive for development. The Blueprint alternative would have a greater number of these transportation projects and therefore would have more development in open space. However, similar to the Plan, the Blueprint Alternative includes policies to dissuade such encroachment on open space and vacant lands. Similar to the 2018 RTP/SCS, the Blueprint Plus Alternative would include land use planning strategies to reduce consumption of vacant, open space/recreation and agricultural lands. The Blueprint Plus Alternative visual character impacts would be slightly greater than the Plan impacts.

Light and Glare

Under this alternative more aggressive growth strategies would be applied to the region, which would potentially result in greater impacts related to light and glare and visual character of neighborhoods as

more intense development occurs within urban areas; however such impacts generally occur in urban areas. Taller buildings could be incongruous with existing surroundings and could overwhelm historic buildings and/or existing neighborhoods. However, as more development is focused in urban areas, fewer aesthetic and nighttime lighting impacts would occur in undeveloped areas. Therefore, impacts to light and glare under the Blueprint Plus would be similar to the Plan and significant.

Agricultural Resources

Farmland

Under the Blueprint Plus Alternative more development would be targeted in urban areas as compared to the Plan resulting in fewer acres of farmland consumed. The Blueprint Plus Alternative would consume a total of 1,353 acres of farmland, as compared to 1,518 under the Plan. The Blueprint Plus Alternative would include more urban form strategies that would further focus growth within urban areas and as a result, would result in the consumption of fewer acres of farmland compared to the Plan.

Williamson Act

Under the Blueprint Plus Alternative more development would be targeted in urban areas as compared to the Plan. Thus, the Blueprint Plus Alternative could ultimately result in a less dispersed land use pattern across the region, which could have lesser impacts related to conversion of agricultural land and create conflicts with Williamson Act contracts. The Blueprint Plus Alternative includes greater transportation projects than the Plan, but there would also be more focused development in existing urban areas to avoid Williamson Act lands. Impacts under the Blueprint Plus Alternative would be less than the proposed 2018 RTP/SCS for impacts to Williamson Act lands.

Forest and Timberland

Impacts to forest lands would also be less than significant (similar to the Plan) because of the increased focus on developing in urban areas. The more compact land use pattern of the Blueprint Plus would further reduce the potential for development in areas that currently contain forestland. Therefore, the Blueprint Plus would result in less impact to agricultural and forestry resources as compared to the Plan; however, impacts would remain significant for agriculture and less than significant for forestry.

Changes in Environment Convert Farmland

The 2018 RTP/SCS would direct more growth to already urbanized areas, thereby reducing the amount of agricultural lands that would be converted to non-agricultural uses. Under the Blueprint Plus Alternative, growth would be concentrated in urban areas. Therefore, fewer agricultural lands would be

converted to non-agricultural uses (1,353 acres compared to 1,518 acres with the Plan). The Blueprint Plus Alternative would increase mobility choices and capacity within urban areas. Therefore, the pressure under this alternative to convert agricultural lands located near the periphery of these built-out areas to urban land uses could increase as transportation improvements are made. The impact from changes in environment which would result in conversion of farmland would be less but still significant under this alternative.

Air Quality

Criteria Air Pollutants

Short-Term Emissions

Short-term construction emissions of criteria pollutants would occur with implementation of the Blueprint Plus Alternative. Countywide, it is likely that more than one project would be under construction at any one time, resulting in greater emissions. Short-term emissions would be similar as compared to the 2018 RTP/SCS due to the similar amount of construction projects related to implementation of the Blueprint Plus Alternative.

Long-Term Emissions

Emissions of long-term criteria pollutants from mobile sources would be affected by implementation of the Blueprint Plus Alternative. In order to analyze the net impact of implementation, existing year (2017) emissions were compared to horizon year (2042) emissions.

Results of modeling are presented in **Table 5.0-19, Criteria Pollutant Emissions from Mobile Sources**. As shown, both the 2018 RTP/SCS and the Blueprint Plus Alternative would result in reductions of reactive organic gases (ROG), sulfur oxides (SOx), oxides of nitrogen (NOx) and carbon monoxide (CO), and reductions of emissions of fine particulate matter (PM2.5). These would be considered beneficial impacts. Emissions of respirable particulate matter (PM10) from mobile sources show a slight increase over existing conditions. However, as shown in **Table 5.0-19**, the 2018 RTP/SCS would result in greater reductions (i.e., fewer total emissions) for ROG, NOx, CO, PM2.5, and SOx. PM10 would increase under both scenarios. Therefore, impacts related to criteria pollutants would be greater under the Blueprint Plus Alternative.

Table 5.0-19
Criteria Pollutant Emissions from Mobile Sources – Blueprint Plus Alternative (2042) vs. Plan (2042)

	Tons/Day					
Scenario	**ROG**	**NOx**	**CO**	**PM10**	**PM2.5**	**SOx**
Existing 2017	3.37	10.42	24.6	0.74	0.35	0.06
2018 RTP/SCS 2042	0.99	2.89	6.54	0.75	0.30	0.04
2018 RTP/SCS Net	**-2.38**	**-8.02**	**-7.53**	**0.01**	**-0.05**	**-0.02**
Blueprint Plus	0.98	2.88	6.51	0.74	0.30	0.04
Blueprint Plus Net	**-2.39**	**--7.54**	**-18.05**	**0.00**	**-0.05**	**-0.02**

Source: TCAG 2018; EMFAC14

A conformity analysis was prepared for the 2018 RTP/SCS that analyzes emissions of ozone precursors (ROG and NOx), CO, PM10 and PM2.5 compared to the approved emissions budgets for mobile sources in Tulare County. The analysis found that emissions of all pollutants under the Plan passed the applicable conformity tests and would be in conformity with the State Implementation Plans (SIPs). However, both the Plan and Blueprint Plus Alternatives would generate greater PM10 emissions by 2042. Consequently, the impact from PM10 emissions would be a significant impact. However, the *2007 PM-10 Maintenance Plan* allows for trading of NOx and PM10 emissions at a 1.5 to 1 ratio. Since the PM10 increase associated with the Plan and Blueprint Plus Alternative are relatively small, this would allow PM10 emissions to pass the conformity test under this alternative. Consequently, the increase would not be considered substantial, and the impact related to criteria pollutant emissions would remain less than significant.

Toxic Air Contaminants

Short-Term Emissions

A construction health risk analysis would be speculative given the lack of a construction location and construction activities. However, it is reasonable to assume that some level of construction activity would occur adjacent to sensitive receptors (e.g., residences and schools). The significant construction emissions identified above could result in adverse health effects to sensitive receptors. As such, it is likely that intense construction activities (e.g., from development projects that involve a high volume of haul trucks) would exceed the health risk significance thresholds due to equipment and truck exhaust emissions. However, short-term construction emissions would be similar under the Blueprint Plus Alternative due to a similar amount of construction activity within Tulare County as compared to the 2018 RTP/SCS.

Long-Term Emissions

PM2.5 emissions will be used as a proxy for DPM emissions in this analysis as further described in **Section, 4.3 Air Quality**. As shown in **Table 5.0-19**, above, emissions of PM2.5 for all mobile sources will be reduced under the Blueprint Plus Alternative. However, in order to more closely approximate DPM emissions, PM2.5 emissions specifically from heavy-duty diesel vehicles were estimated. The emissions generated under existing conditions as compared to the Blueprint Plus Alternative are shown in **Table 5.0-20, PM2.5 Emissions from Heavy Duty Diesel Vehicles.**

Table 5.0-20
PM2.5 Emissions from Heavy Duty Diesel Vehicles (tons/day) – Blueprint Plus (2042) vs. 2018 RTP/SCS (2042)

Existing 2017	2042 RTP/SCS	2042 Blueprint Plus
0.066	0.066	0.066

Source: Tulare COG 2014; EMFAC14

As shown in **Table 5.0-20**, the Blueprint Plus Alternative would generate similar PM2.5 emissions compared to the 2018 RTP/SCS but would be less than under existing conditions. CARB has several programs and regulations in place to reduce DPM emissions state-wide. These programs and regulations would reduce DPM emissions over the period of the 2018 RTP/SCS. Consequently, it can be assumed that the reductions in PM2.5 emissions include reductions in DPM emissions region-wide.

However, on a case-by-case basis RTP improvements may also bring sources of DPM closer to sensitive receptors through construction of new facilities or widened roadways, which could increase exposure of sensitive receptors. There are more highways identified as having a higher AQI rank under the Blueprint Plus Alternative versus the existing conditions in 2017. The total receptors affected by higher AQI highways for the Blueprint Plus Alternative would be less than the 2018 RTP/SCS. The 2018 RTP/SCS would locate more schools and hospitals near higher traffic highways, but would locate less housing near high AQI highways. Under the Blueprint Plus Alternative, there would be less hospitals located near medium AQI highways. Therefore, this qualitative measure indicates that a similar heath risk impact could result from implementation of the Blueprint Plus Alternative as more sensitive receptors would be located relatively close to increased truck traffic.

Although PM2.5 emissions would be reduced in Tulare County under the Blueprint Plus Alternative, more sensitive receptors located next to highways in 2042 than under existing conditions. The projected higher volume of truck traffic would potentially be increased health risk to certain populations in Tulare

County. In addition, given the lack of data regarding industrial and other stationary sources of TACs, it is unknown whether these sources would result in increased emissions of TACs in 2042 compared to existing conditions, and therefore it is unknown what their impact on health risks in Tulare County would be. Consequently, this impact would be considered y significant. Overall impacts from the Blueprint Plus alternative would be less than those under the 2018 RTP/SCS, but would remain significant.

Biological Resources

Species Identified as a Candidate, Sensitive, or Special-Status Species

Under the Blueprint Plus Alternative, fewer areas would be impacted by excavation and construction activities as compared to the Plan. The Blueprint Plus Alternative would include a greater amount of infill development compared to the Plan. Therefore, the Blueprint Plus Alternative would result in transportation projects and development taking place over a smaller area of land. Specifically, new transportation projects and development included in the Blueprint Plus Alternative would result in 8,487 acres of vacant land consumption, as compared to 8,884 acres under the Plan. However, both would result in the same number of acres of critical habitat consumed (144). Vacant land could also include land used by species for habitat. Therefore, the Blueprint Plus Alternative impacts to special-status species would be reduced compared to the Plan as fewer acres of vacant land would be consumed. Impacts would still be significant.

Sensitive Natural Communities and Federally-Protected Wetlands

Because the Blueprint Plus Alternative includes the same amount of critical habitat consumed and a more compact land use pattern, it is likely that fewer wetlands and sensitive natural communities would be affected with the Blueprint Plus Alternative than under the Plan. Impacts would remain significant but would be less than the Plan.

Wildlife Movement

Direct impacts to wildlife movement include increased noise and human presence during construction, as well as increased trash, which may attract predators to the project site and discourage wildlife use of surrounding natural habitat. Increased roadway traffic, due to the division of habitat and corridors, may affect surrounding wildlife and lead to increased wildlife mortality. The Blueprint Plus Alternative includes more transportation projects than the 2018 RTP/SCS and therefore would be more likely to result in direct impacts to wildlife movement; however, the less dispersed growth pattern of this alternative

could result in less impacts to wildlife movement by habitat modification. Therefore, on balance, impacts under the Blueprint Plus would be significant and similar to the 2018 RTP/SCS.

Preservation Plans

The Blueprint Plus Alternative would result in less vacant land and, but a similar amount of critical habitat consumption, as a result, there would be fewer opportunities to conflict with ordinances and plans regarding biological resources. Impacts would be less than the Plan but still significant.

Cultural Resources

Historical Resources

With more development in urban areas there would be more opportunity for impacts to existing built historical resources. Impacts to historical resources under the Blueprint Plus Alternative would be greater than those under the Plan and significant.

Archeological and Paleontological Resources, Human Remains, and Tribal Cultural Resources

Under the Blueprint Plus Alternative, fewer undeveloped areas would be impacted by excavation and construction activities related to transportation projects as compared to the Plan. The Blueprint Plus Alternative focuses more development in infill areas with further expansion of non-motorized transportation. Under the Blueprint Plus Alternative, development would result in 8,487 acres of new land consumption as compared to 8,884 acres under the Plan, thereby exposing fewer previously undisturbed cultural resources. Further, as development would be focused in urban areas, impacts related to accidental discovery of archeological resources, paleontological resources and tribal cultural resources would generally be reduced. Similarly, this alternative would also result in significant impacts related to human remains. Impacts would be less due to increased density of this alternative.

Greenhouse Gas Emissions

GHG Emissions Estimates

The Blueprint Plus Alternative would include strategies aimed at an even greater increase in the density of land use in Tulare County compared to the 2018 RTP/SCS, thereby reducing per capita VMT and GHG emissions. The Blueprint Plus alternative would result in lower emission than the Plan due to a comparative increase in infill development. The first significance threshold for GHG emissions is whether the project would result in emissions that could have a significant impact on the environment. In 2042 mobile source emissions would be 1,663,620 $MTCO_2e$/yr under the Blueprint Plus Alternative, compared

to 1,664,730 $MTCO_2e$/yr under the 2018 RTP/SCS, which is a 0.6 percent decrease compared to the 2018 RTP/SCS. Mobile source emissions under 2017 existing conditions are approximately 2,229,808 $MTCO_2e$/yr.[9] However, both the Blueprint Plus Alternative and the Plan would result in greater GHG mobile source emissions than under existing conditions. This impact would be significant.

The second significance threshold for GHG emissions is whether the project would result in greater emissions than under existing conditions (i.e., would emissions in 2042 be greater than in 2017). As shown in **Table 5.0-4**, in 2042 daily GHG emissions would be 4,546 $MTCO_2e$ under the Blueprint Plus Alternative, compared to 4,561 $MTCO_2e$ under the 2018 RTP/SCS. The Blueprint Plus Alternative would generate less emissions than under existing conditions, as well as generate less emissions compared to the 2018 RTP/SCS.

Consistency with Plans

The third threshold asks whether the project would hinder progress toward the goals of applicable GHG reductions plans such as AB 32, SB 375, and SB 32 (i.e., would emissions in 2020 be the same as emissions in 1990).

SB 375

For Tulare County, CARB determined that the 2020 target is a 5 percent reduction from 2005 emissions levels, and the 2035 target is a 10 percent reduction. Implementation of the Blueprint Plus Alternative would provide greater reduction of GHG compared to the 2018 RTP/SCS, and this alternative would exceed these GHG reduction targets, providing reductions of 13 percent reduction in 2020 and 17 percent in 2035 (**Table 5.0-21**).

[9] TCAG, 2018 and *EMFAC14*

Table 5.0-21
Blueprint Plus Alternative SB 375 Greenhouse Gas Emissions and Vehicle Trips Reductions

Indicators & Measures	2005 Baseline	2020 Blueprint Plus	2035 Blueprint Plus
Total Population	404,148	488,293	568,186
Vehicle Miles Traveled (VMT)			
VMT per Weekday	8,705,754	9,260,388	10,408,276
Per Capita VMT SB 375	21.54	18.96	18.32
Difference between 2005 Base Per Capita VMT (21.54 miles)	0.0%	-11.96%	-14.96%
SB 375 CO_2 Emissions			
Total SB 375 CO_2 Emissions (tons/day)	3,404	3,580	3,980
Per Capita SB 375 CO_2e Emissions (lbs/day)	18.57	16.16	15.44
Difference between 2005 Base Per Capita CO_2 (18.57 lbs)	0.0%	-13.0%	-16.8%
SB 375 Targets Through September 30, 2018 (3/22/2018)	0.0%	-5.0%	-10.0%
SB 375 Targets Through October 1, 2018 (3/22/2018)	0.0%	-13.0%	-16%

Source: TCAG, 2018.

AB 32

GHG emissions per household would be greater under the 2018 RTP/SCS than under the Blueprint Plus Alternative (13.8 $MTCO_2e$/Year per household compared to 13.5 $MTCO_2e$/Year per household). However, data regarding energy use and therefore GHG emissions from commercial, industrial, agricultural and other sources is not available. While energy use per household would decrease as a result of the more compact land use growth pattern, it total energy use as a result of all land use activities would increase substantially between now and 2042.

As shown in **Table 5.0-6,** per capita GHG emissions for the Blueprint Plus Alternative would be 34 percent below 1990 levels by 2020, total mobile source GHG emissions are projected to increase by approximately four percent. This is less than the level of emissions reduction as compared to the 2018 RTP/SCS.

SB 32

SB 32 sets the statewide GHG emissions reduction target for the year 2030; similar to AB 32 setting statewide GHG emissions reduction target for the year 2020. SB 32 requires a reduction in GHG emissions of 40 percent below 1990 levels. As shown in **Table 5.0-6**, emissions from transportation sources in Tulare County would not meet these targets, providing an increase in emissions in 2020 of four percent, and a

decrease in emissions in 2035 of 18 percent. Neither the 2020 nor 2035 projections reduce emissions by 40 percent as compared to 1990 levels. These emission reductions are greater than the reductions provided by the 2018 RTP/SCS. Both the 2018 RTP/SCS and the Blueprint Plus Alternative would have significant impacts with respect conflicting with the state's ability to achieve SB 32 and EO S-3-05 GHG reduction targets. However, in all years emissions under the Plan would be less than under the Blueprint Plan Alternative. Therefore, impacts associated with SB 32 and EO S-3-05 conflicts would also be less with the 2018 RTP/SCS than the Blueprint Plan Alternative for all thresholds and all years analyzed, and would be less than significant.

Land Use

Conflict with Plan, Policy or Regulation

Current land use practices may have to change to address the Blueprint Plus Alternative because the Blueprint Plus focuses more growth into the existing urban area around transit corridors and existing activity centers, possibly beyond what communities have planned for. To achieve the densities of the Blueprint Plus, there would be a greater chance of conflicting with, local general plans, market forces and community desired growth patterns.

Disrupt a Community

As a result of greater concentrations of density in specified areas and increasing redevelopment pressures, the Blueprint Plus Alternative could result in increased division of existing communities. The Blueprint Plus Alternative would also increase the potential for land use incompatibilities in urban areas. However, the Blueprint Plus Alternative would result in less consumption of vacant land. Impacts of the Blueprint Plus Alternative on land use would be less than the Plan on non-urban areas, but greater in urban areas, and as under the Plan, impacts would be significant.

Noise

Exposure to Excess Noise Levels, Substantial Permanent or Temporary Increases in Noise

Implementation of the 2018 RTP/SCS would result in the same total regional population and households as the Blueprint Plus Alternative. Population for both the Blueprint Plus Alternative and the Plan 2018 RTP/SCS is projected to be approximately 604,969 in 2042. However, under the Blueprint Plus Alternative, a greater number of regional transportation investments would be made. Under the Blueprint Plus Alternative, the population distribution would be more concentrated in urban areas and

more influenced by additional transportation investments and growth policies contained within the Blueprint Plus Alternative.

Both the Blueprint Plus Alternative and 2018 RTP/SCS would expose people to significant increases in noise and vibration. Under the Blueprint Plus Alternative, development would be more concentrated, potentially exposing more people and sensitive uses to noise and vibration in urban areas (including both construction and operational noise). However, the 2018 RTP/SCS includes greater improvements in urban areas that would facilitate traffic movement, and increase use of transit and alternate modes that could reduce individual vehicle noise (as more people take alternative modes of transportation). On balance, the Blueprint Plus Alternative would result in more roadways with substantial increases in noise but would have more traffic congestion improvements than the Plan.

The greater amount of transportation projects in the Blueprint Plus Alternative would increase the amount of transportation-related construction activity, which would increase short-term noise and vibration levels. The less dispersed growth pattern, and emphasis on transit or alternative modes of transportation, roadways would decrease congestion and associated noise. However, with a more concentrated growth pattern, more people would be exposed to substantial increases in noise as compared to the Plan. This alternative would result in overall greater construction noise impacts compared to the 2018 RTP/SCS.

Vibration

The Blueprint Plus Alternative would concentrate development in urban areas, increase vibration. However, a greater number of transportation improvements under the Blueprint Plus Alternative would help to move traffic more efficiently which could reduce vibration in urban areas. but not to the point of off-setting increased vehicle trips. Similarly, with vibration in general, as for the 2018 RTP/SCS, there remains the potential for individual projects in the region to result in significant vibration impacts. Thus, impacts related to groundborne vibration under the Blueprint Plus Alternative would be greater than under the 2018 RTP/SCS and remain significant.

Airport Noise

Similar to the Plan, some land use projects under the Blueprint Plus Alternative could be located within an area covered by an airport land use plan or in the vicinity of a private airstrip. However, the Blueprint Plus Alternative along with existing plans and regulations, including the Tulare County Comprehensive Airport Land Use Plan (ALUP) and Federal Aviation Administration regulation of airports and airstrips, would minimize noise emissions levels for people residing or working in the project area. Therefore, impacts would be similar to the Plan and less than significant.

Population, Housing and Employment

Induce Population

The Blueprint Plus Alternative would have the same number of households, employment, and population as the Plan. The Blueprint Plus Alternative includes land use strategies that would target growth in developed urban areas to a greater extent than the Plan. This more compact land use pattern would result in a decrease in the amount of land consumed compared to the Plan (8,487 acres of vacant land, 1,353 acres of farmland, and 144 acres of critical habitat under the Blueprint Plus compared to 8,884 acres of vacant land, 1,518 acres of farmland and 144 acres of critical habitat under the Plan). [10] As fewer acres of land would be consumed, more population would be in urban areas and away from undeveloped areas. As a result, impacts under the Blueprint Plus Alternative would be less than the Plan. Impacts would be significant and less than the Plan.

Displacement

Compared to the Plan, the Blueprint Plus Alternative would place more focus on development in urban areas and existing communities and would have a greater emphasis on infill development. As a result, the Blueprint Plus Alternative could result in an increase in the number of homes or businesses that are displaced as a result of redevelopment and impacts would remain significant. Impacts would be similar to the Plan.

Public Services

Fire

The Blueprint Plus Alternative would include the same increases in population, housing, and jobs that would require increases in police, fire, and emergency personnel; however more of these people would be located in urban areas. In general urban areas are well served by fire and emergency services and as personnel would travel shorter distances to calls response times would not be substantially affected. As the Blueprint Plus Alternative would increase density and concentration of developments in urban areas, ewer emergency service personnel would be needed to serve non-urban areas of the County than with the Plan. The increase in population in urban areas could result in the need for new or expanded facilities to serve increase demand in those areas. Therefore, the Blueprint Plus Alternative would have greater impacts to fire services and the need for new facilities.

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10 TCAG Envision Tomorrow Tool.

Police

Similar to the greater need for fire services, the Blueprint Plus Alternative would also increase the need for police and police facilities. Additionally, the more dense populations in urban areas could result in increased crime. Therefore, the Blueprint Plus Alternative would have greater impacts to police services and the need for new facilities compared to the Plan.

Schools

The Blueprint Plus Alternative would have greater impacts to schools as the Plan. The 2042 population would be similar under the Blueprint Plus as under the Plan; however, the Blueprint Plus includes more population in urban areas than under the Plan and would result in the need for additional school facilities in the areas targeted for increased population densities and fewer facilities in outlying areas.. As with the Plan, impacts would be less than significant and would be generally similar.

Recreation

The Blueprint Plus Alternative would result in fewer impacts on recreational facilities in non-urban areas as compared to the Plan because it would consume less land. The Blueprint Plus focuses on further increased densities in urban areas. Although this alternative would have less impacts to non-urban areas that require new recreational facilities, existing urban parks would be more severely impacted under the Blueprint Plus Alternative because of intensified growth in urban areas, and such impacts would be significant as under the Plan.

Transportation

Substantial Increases in VMT

The Blueprint Plus Alternative builds on the land use strategies contained in the Plan, with intensified land uses in urban areas. The Blueprint Plus Alternative assumes an increase in demand for multi-family housing in urban areas. The Blueprint Plus Alternative would result in a reduction in VMT of compared to the Plan (10,408,276 for the Blueprint Plus compared to 10,441,330 in the Plan).

Under the Blueprint Plus Alternative, the population of the TCAG region would still grow by approximately 133,127 people by 2042, however additional transportation policies to reduce emissions, and limit single-family development would be implemented. The Blueprint Plus Alternative would accommodate the same increase in total population, households, and jobs as the Plan but with a more compact growth pattern resulting in more traffic in urban areas. Impacts related to VMT under the Blueprint Plus would be less than the Plan, but would still be significant.

Conflict with CMP

Under the Blueprint Plus Alternative, traffic volumes would similarly increase however congestion would have a greater increase in urban areas. Therefore, a greater significant impact would occur under this alternative.

Change in Air Traffic

Similar to the conclusions of Plan implementation, the Blueprint Plus Alternative would also not by itself result in changes in air traffic patterns. However, the similar increased population that would occur by 2042 would likely result in increased air traffic. As with the proposed project, iimplementation of the Tulare County Comprehensive Airport Land Use Plan (ALUP) would avoid safety risks associated with air traffic to the extent feasible. The impact to a change in air traffic patterns would similarly be less than significant.

Increase Hazards

Similar to the Plan, the Blueprint Plus Alternative would not result in increased hazards due to design feature (e.g., sharp curves or dangerous intersections) or increase conflicts between incompatible uses (e.g., farm equipment and other vehicular traffic). Design of new transportation facilities, including new pedestrian and bicycle facilities, takes into account potential hazards and avoids risks to the extent feasible. Impacts would be less than significant.

Inadequate Emergency Access

Under the Blueprint Plus Alternative congestion would increase which could result in travel delay. The fire departments throughout the County are responsible for maintaining adequate response times, and future projects, both transportation and development, would undergo further environmental analysis that would include evaluation and mitigation of impacts to emergency access. Impacts would be less than significant and similar to the Plan.

Conflict with Alternative Transportation Plans

Under the Blueprint Plus Alternative, there would be more transportation infrastructure investment, while growth would continue to occur at forecasted rates. In 2042, the Blueprint Plus Alternative would result in less VMT as compared to the Plan. The Blueprint Plus Alternative would also result in more transit use and use of active mode shares compared to the Plan. Impacts would be slightly reduced compared to the Plan as vehicle congestion would be reduced compared to the Plan. The increased

investment in pedestrian and bicycle facilities would result in increase in the performance of Tulare's pedestrian and bicycle facilities. Impacts would be less than the Plan.

Utilities

Energy

Wasteful Inefficient Use of Energy

Since the Blueprint Plus Alternative includes greater transportation and development projects than the 2018 RTP/SCS, it would have less of an impact related to the need for expanded or newly constructed energy facilities to serve the population growth in the region due to greater emphasis on TPAs. In addition, since more public transit options would be available than under the 2018 RTP/SCS and congestion would decrease, use of petroleum fuel for personal vehicles would be less, as indicated in **Table 5.0-22**.

Table 5.0-22
Gasoline and Diesel Consumption – Blueprint Plus (2042) vs. 2018 RTP/SCS (2042)

Scenario	Vehicle Miles Travelled	Daily Gasoline Consumption (thousand gallons)	Daily Diesel Consumption (thousand gallons)
Blueprint Plus (2042)	12,657,231	271.78	180.29
2018 RTP/SCS (2042)	12,699,425	272.67	180.89

Source: TCAG 2018, EMFAC 2014

The Blueprint Plus Alternative would accommodate the same increase in total population, households, and jobs as the 2018 RTP/SCS. However, as shown in **Table 5.0-23**, the total energy consumption under the Blueprint Plus Alternative would be less than under the 2018 RTP/SCS.

Table 5.0-23
Residential and Commercial Energy Consumption from New Growth – Blueprint Plus (2042) vs. Plan (2042)

Scenario	Energy Use per Household (Million BTU Per Year)
Blueprint Plus (2042)	145.1
2018 RTP/SCS (2042)	148.3

Source: TCAG, 2018.

Both the Blueprint Plus Alternative and the 2018 RTP/SCS include strategies to focus growth in TPAs, which would help reduce the number of new energy facilities or expansion of existing facilities that need to be constructed. This is because the Blueprint Plus Alternative would accommodate the same population as the 2018 RTP/SCS by constructing higher density development with infill and mixed use projects. Infill and mixed-use developments are generally higher efficiency dwellings accounting for the reduction in total energy consumption seen in **Table 5.0-23**. Higher density development throughout Tulare County under the Blueprint Plus Alternative would help accommodate the same population growth with less dispersed development. Under the Blueprint Plus Alternative, the 2018 RTP/SCS similar land use strategies compared to the 2018 RTP/SCS would occur. It is also possible that increased density in urban areas could put additional pressure on energy providers to increase capacity to these areas resulting in additional impacts. However, as in general, energy use would be more efficient (on a per capita basis), with the 2018 RTP/SCS, impacts would be less with the Blueprint Plus Alternative. Impacts to energy under the Blueprint Plus Alternative would be significant as under the 2018 RTP/SCS.

Electricity and Natural Gas Use

The Blueprint Plus Alternative would accommodate the same increase in total population, households, and jobs as the Plan, but with development occurring in a more concentrated pattern in urban areas and more transportation projects. This would result in less consumption of open space areas. Therefore, demand for electricity and natural gas would be less dispersed and more focused in urban areas, this could slightly reduce the number of new facilities necessary as the need would be more compact. The Blueprint Plus Alternative would result in an overall decrease in electricity and natural gas demand due to increased population and economic growth. Impacts would be significant, but as the land use pattern would be more efficient, impacts would be less than the Plan.

Wastewater

The Blueprint Plus Alternative includes strategies to focus growth in urban areas at higher densities than under the Plan. The higher density development pattern of the Blueprint Plus would tend to use less water which would generate less wastewater (multi-family homes are generally more efficientt than single-family homes).

As under the Plan, expansion of existing facilities and/or construction of new facilities would be necessary under the Blueprint Plus Alternative to accommodate increases in population in urban areas and concentrated growth patterns. As a result of further intensification of development in urban areas impacts from the Blueprint Plus Alternative would be greater than the Plan in urban areas but less in non-urban areas. Impacts to wastewater would remain significant as under the Plan.

Solid Waste

Similar to the Plan, the more compact growth pattern of the Blueprint Plus Alternative would generate less solid waste; however, impacts would remain significant.

Water Resources

Under the Blueprint Plus Alternative, fewer undeveloped areas would be impacted by excavation and construction activities related to transportation projects as compared to the Plan. The Blueprint Plus Alternative focuses on infill development and further expansion of non-motorized transportation. Under the Blueprint Plus Alternative, development would result in 8,487 acres of undeveloped land consumption as compared to 8,884 under the Plan, thereby reducing the amount of impervious surfaces and decreasing impacts to water resources as compared to the Plan.

The direct effects of the Blueprint Plus Alternative from transportation projects on water resources would be similar when compared with the Plan, but direct effects from land use development would be less because of the more compact growth pattern, but impacts would remain significant. Similarly, impacts to groundwater infiltration caused by the increased impervious surfaces of roadway projects, and to increased flooding hazards, would remain significant.

With regard to groundwater recharge, the Blueprint Plus alternative would consume fewer acres of land providing more opportunities for groundwater recharge. As such, impacts would be less than the Plan. While the Plan and the Blueprint Plus would result in the same total population, the more compact growth pattern under the Blueprint Plus would result in more efficient use of water resulting in lower demand. As the Blueprint Plus's more compact growth pattern would be more water efficient, the

Blueprint Plus's water supply impacts would be less than the Plan, however the impacts would remain significant.

Overall, the Blueprint Plus would result in fewer impacts to water resources because of a compact growth pattern that would result in less impervious surfaces and less demand for water; however, impacts would remain significant.

5.3 ENVIRONMENTALLY SUPERIOR ALTERNATIVE

Section 15126.6 of the *State CEQA Guidelines* requires that an "environmentally superior" alternative be identified. In general, the environmentally superior alternative is the alternative that would generate the fewest adverse impacts. If the No Project Alternative is identified as environmentally superior, then another environmentally superior alternative must be identified among the other alternatives.

Table 5.0-24, Quantitative Impact Comparison -- Plan and Alternatives, summarizes how each of the alternatives performs based on several quantifiable impact measures.

Table 5.0-24
Quantitative Impact Comparison -- Plan and Alternatives

Impact Measure[1]	Plan	No Project	Trend	Old Plan	Blueprint Plus
Population, Housing and Employment					
Population	604,969	604,969	604,969	604,969	604,969
Households					
Single Family	136,688	141,868	141,868	136,688	134,850
Multi Family	49,645	44,464	44,464	49,645	49,645
Employment	501,710	501,710	501,710	501,710	501,710
Land Use and Biological Resources					
Vacant land consumed (acres)	8,884	10,525	10,525	9,110	8,487
Critical habitat consumed	144	176	176	144	144
Urban Gross Residential Density	6.1	4.9	4.9	6.1	6.4
Agricultural Resources					
Farmland Consumed (acres)	1,518	2,310	2,310	1,403	1,353
Transportation and Traffic					
Total Annual VMT (million)	12.69	12.76	12.85	12.90	12.66
Air Quality/Health					
Total SB 375 CO2 (tons per workday)	4,219	4,229	4,275	4,304	4,203
Per capita SB 375 GHG	15.37	15.41	15.58	15.69	15.32

Impact Measure[1]	Plan	No Project	Trend	Old Plan	Blueprint Plus
(lbs/day)					
2042 vs 2005	-17.2	-17.0	-16.1	15.5	-17.5
SB 375 CO_2 % reduced					
Households within 500 feet of freeways	4,178	3,898	3,898	3,838	4,186
Households w/in 0.25 mile freeways with high AQI	9,982	9,504	9,504	10,110	10,324
Energy Use					
Gasoline 2042 million gallons	272.67	272.99	275.76	277.33	271.78
Diesel 2042 million gallons	180.89	181.71	183.01	183.71	180.89
2042 Energy Use Per Household (millions of BTU annual)	148.3	158.9	158.9	148.1	145.1
Water Use					
2042 Household water gallons /day	264.0	293.0	293.0	263.6	255.4

Source: TCAG and Impact Sciences, 2018

[1] *This table compares select quantifiable impacts among alternatives. It is not a comprehensive listing of all impacts as some impacts are not easily quantified and/or not easily compared in a simple table such as the one presented above. But this table does present some of the measures used in assessing impacts.*

As shown in **Table 5.0-24**, the Blueprint Plus Alternative would incrementally reduce several environmental factors including water consumption, land consumption, energy use, VMT air pollutant emissions, and GHG emissions. This would occur as a result of emphasizing development within existing urban areas. Identification of an environmentally superior alternative is not clear-cut. The less dense alternatives generally result in fewer impacts to people, but greater impacts to open space and biological resources, whereas more-dense alternatives increase urban impacts resulting in greater impacts to people. The Blueprint Plus Alternative is identified as the environmentally superior alternative because it would result in the least consumption of land and incrementally reduce several environmental factors, but still would result in the same number of significant impacts as the Plan. It would not reduce any of the Plan's significant impacts to less than significant levels.

As discussed throughout this PEIR, TCAG has no land use authority; rather it sets regional land use policy. Thus, TCAG has no authority to implement the Blueprint Plus Alternative's land use scenario. Nonetheless, local jurisdictions, in exercising their land use authority, could choose to implement the regional land use policies identified in the Blueprint Plus Alternative. On the other hand, the proposed land use changes required to implement the Blueprint Plus Alternative may not be acceptable to local jurisdictions because they are inconsistent with local land use goals and objectives.

6.0 OTHER CEQA CONSIDERATIONS

Section 15126 of the *State CEQA Guidelines* requires an EIR must also identify (1) growth inducing impacts, (2) significant unavoidable environmental effects of the proposed project, and (3) significant irreversible environmental changes that would result from implementation of the proposed project. This section addresses these impact categories. In addition, this section describes effects listed in *State CEQA Guidelines* Appendix G that are not addressed in Chapter 4, and explains why they are either less than significant or there would be no impact.

6.1 GROWTH INDUCEMENT

Section 15125.2(d) of the *State CEQA Guidelines* requires that growth-inducing impacts of a proposed project be considered. Growth-inducing impacts are characteristics of a project that could directly or indirectly foster economic or population growth or the construction of additional housing, either directly or indirectly, in the surrounding environment. According to the *CEQA Guidelines*, such projects include those that would remove obstacles to population growth (e.g., a major expansion of a wastewater treatment plant) and projects that encourage and facilitate other activities that are beyond those proposed as part of the project and could affect the environment are growth inducing. In addition, as set forth in the *CEQA Guidelines*, increases in the population may tax existing community service facilities, requiring construction of new facilities that could cause significant environmental effects. The *CEQA Guidelines* also state that it must not be assumed that growth in an area is necessarily beneficial, detrimental or of little significance to the environment.

As discussed in **Section 4.3, Population, Housing, and Employment** (impact POP-1), the transportation investments and urban form strategies in the proposed RTP/SCS would foster economic and household growth and would remove some obstacles to growth in some parts of the region. As communities develop, pressure could be placed on the urban and suburban fringes. Growth strategies within the 2018 RTP/SCS would strategically target growth in areas proximate to jobs and transit. However, the improved accessibility from the proposed 2018 RTP/SCS transportation projects could also help facilitate population and economic growth in areas of the region that are currently not developed, despite RTP/SCS policies designed to limit such development. Further, the RTP/SCS forecasts growth beyond the time horizons of current General Plans, which may result in future developments in areas that are currently unplanned.

The 2018 RTP/SCS housing and employment growth pattern continues the emphasis developed in the 2014 RTP/SCS of focusing on areas of existing development. Although forecasted growth is typically

planned for in the General Plans of the County and the Cities, the timeline of the 2018 RTP/SCS goes well beyond General Plans and could therefore result in unplanned growth in urban areas as well.

Based on the above analysis, implementation of the 2018 RTP/SCS would be growth-inducing.

6.2 SIGNIFICANT ENVIRONMENTAL EFFECTS THAT CANNOT BE AVOIDED IF THE PROPOSED PROJECT IS IMPLEMENTED

Table 1, Summary of Impacts and Mitigation Measures, in the **Executive Summary** section of this PEIR, and **Section 4.0** of this PEIR provide a comprehensive identification of the 2018 RTP/SCS environmental effects, including the level of significance both before and after mitigation. For many projects, many of the impacts that are determined to be significant and unavoidable in this regional programmatic analysis could be mitigated to less than significant at the project level.. Because this PEIR evaluates impacts at the programmatic level, all project circumstances are not foreseeable and proposed mitigation measures may not be feasible or effective for some projects Therefore, this PEIR conservatively identifies a number of impacts to be significant and unavoidable.

Section 15126.2(b) of the *CEQA Guidelines* requires that an EIR describe any significant impacts that cannot be avoided, even with the implementation of feasible mitigation measures. Implementation of the proposed project would result in the following unavoidable significant or cumulatively considerable impacts:

6.2.1 Aesthetics

Impact AES-1 **Have a substantial adverse effect on a scenic vista for example by impairing views of scenic resources (i.e., mountains, ocean, rivers, or significant man-made structures) as seen from existing transportation facilities and other key public vantage points in Tulare County.**

Impact AES-2 **Substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within a state scenic or eligible highway for example by altering the appearance of designated scenic resources along or near a state-designated or eligible scenic highway or vista point.**

Impact AES-3 **Substantially degrade the existing visual character or quality of the site and its surroundings for example by creating significant contrasts, with the scale, form, line, color, and/or overall visual character of the existing landscape setting.**

Impact AES-4 **Create a new source of substantial light or glare, which could affect day or nighttime views and/or causes a public hazard.**

The 2018 RTP/SCS's contribution to aesthetic impacts would also be cumulatively considerable.

6.2.2 Agriculture and Forestry Resources

Impact AG-1 **Convert prime farmland, unique farmland, or farmland of statewide importance (farmland), as shown on the maps prepared pursuant to the farmland mapping and monitoring program of the California Resources Agency, to non-agricultural use.**

Impact AG-2 **Conflict with existing zoning or land use designation for agricultural use, or a Williamson Act contract.**

Impact AG-3 **Conflict with existing zoning or land use designation for, or cause rezoning of, forest land (as defined in Pub. Resources Code, § 12220(G)), timberland (as defined by Pub. Resources Code, § 4526), or timberland zoned Timberland Production (as defined by Gov. Code, § 51104(G)); and/or result in the loss of "Forest Land" as defined in the California Forest Legacy Act of 2007 (Pub. Resources Code, § 12220(G)) or conversion of Forest Land into non-forest use.**

Impact AG-4: **Involve other changes in the existing environment which, due to their location or nature, could result in conversion of farmland, to non-agricultural use.**

The 2018 RTP/SCS's contribution to agriculture and forestry impacts would also be cumulatively considerable.

6.2.3 Air Quality

Impact AIR-1 **Violate any air quality standard or contribute substantially to an existing or projected air quality violation. Projected short-term emissions of criteria pollutants (construction of transportation projects and projected development) are considered to be significant if they would result in substantial criteria pollutant emissions. Projected long-term emissions of criteria pollutants are considered significant if they are substantially greater than current emission levels.**

Impact AIR-2 **Expose sensitive receptors to substantial pollutant concentrations: Projected long-term emissions of toxic air contaminants (diesel particulate matter from heavy-duty diesel trucks and other emissions from industrial activities) are considered significant if they would be greater than current emission levels; and/or localized concentrations of toxic air contaminants at sensitive receptors (short-term and/or long-term) are considered significant if they would exceed existing conditions.**

The 2018 RTP/SCS's contribution to air quality impacts would also be cumulatively considerable.

6.2.4 Biological Resources

Impact BIO-1 **Have a substantial adverse effect, either directly or through habitat modification, on any species identified as a candidate, sensitive, or special-status species in local or regional plans, policies, or regulations or by CDFW or USFWS.**

Impact BIO-2 **Have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, regulations, or by CDFW or USFWS.**

Impact BIO-3 **Have a substantial adverse effect on federally protected wetlands, as defined by CWA Section 404 (including, but not limited to, marsh, and vernal pools) through direct removal, filling, hydrological interruption, or other means.**

Impact BIO-4 **Interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites.**

Impact BIO-5 **Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance;**

Impact BIO-6 **Conflict with the provisions of an adopted habitat conservation plan (HCP), natural communities conservation plan (NCCP), or other approved local, regional, or state habitat conservation plan.**

The 2018 RTP/SCS's contribution to impacts to biological resources would also be cumulatively considerable.

6.2.5 Cultural Resources

Impact CR-1 **Cause a substantial adverse change in the significance of a historic structure that is a historical resource as defined in *CEQA Guidelines* Section 15064.5.**

Impact CR-2 **Cause a substantial adverse change in the significance of an archaeological resource pursuant to *CEQA Guidelines* Section 15064.5.**

Impact CR-3 **Cause a substantial adverse change in the significance of a paleontological resource, pursuant to *CEQA Guidelines* Section 15064.5.**

Impact TCR-1 **Cause a substantial adverse change in the significance of a tribal cultural resource defined in Public Resources Cod section 21074 that is listed or eligible for listing in the California Register of Historical Resources, or in a local register of historical resources as defined in Public Resources Code section 5020.1(k).**

Impact TCR-2 **Cause a substantial adverse change in the significance of a tribal cultural resource defined in Public Resources Code section 21074 that is a resource determined by the lead agency, in its discretion and supported by substantial evidence, to be significant pursuant to criteria set forth in subdivision (c) of Public Resources Code Section 5024.1.**

The 2018 RTP/SCS's contribution to impacts on historical, archaeological, paleontological, and tribal cultural resources would also be cumulatively considerable.

6.2.6 Greenhouse Gas Emissions

Impact GHG-1 **Generate GHG emissions, either directly or indirectly, that may have a significant impact on the environment.**

Impact GHG-2 **Conflict with an applicable plan, policy or regulation adopted for the purpose of reducing the emissions of GHG.**

The 2018 RTP/SCS's contribution to GHG emission impacts would also be cumulatively considerable since GHG analyses are by nature cumulative analyses.

6.2.7 Land Use

Impact LU-1 **Conflict with any applicable land use plan, policy, or regulation of an agency with jurisdiction over the project (including, but not limited to, the general plan, specific plan, local coastal program, or zoning ordinance) adopted for the purpose of avoiding or mitigating an environmental effect.**

Impact LU-2 **Physically divide an established community.**

Impact LU-3 **Conflict with any applicable habitat conservation plan or natural community conservation plan.**

The 2018 RTP/SCS's contribution to land use impacts would also be cumulatively considerable.

6.2.8 Noise

Impact NOISE-1 **Exposure of persons or generation of noise in levels in excess of standards established in local general plans or noise ordinances, or applicable standards of other agencies.**

Impact NOISE-2 **Result in a substantial temporary or periodic increase in ambient noise levels above levels existing without the project.**

Impact NOISE-3 **Result in a substantial permanent increase in ambient noise levels above levels existing without the project.**

Impact NOISE-4 **Exposure of persons to or generation of excessive groundborne vibration or groundborne noise levels.**

The 2018 RTP/SCS's contribution to noise impacts would also be cumulatively considerable.

6.2.9 Population, Housing, and Employment

Impact POP-1 **Induce substantial unplanned population, housing, or employment growth either directly (for example, by proposing new homes and businesses) or indirectly (for example, through extension of roads or other infrastructure).**

Impact POP-2 **Displace a substantial number of existing housing, necessitating the construction of replacement housing elsewhere; or displace substantial numbers of people, necessitating the construction of replacement housing elsewhere; or displace a substantial number of jobs.**

The 2018 RTP/SCS's contribution to population, housing, and employment impacts would also be cumulatively considerable.

6.2.10 Public Services

Recreation

Impact REC-2 **Increase the use of existing neighborhood and regional parks or other recreational facilities such that substantial physical deterioration of the facility would occur or be accelerated.**

The 2018 RTP/SCS's contribution to impacts to existing neighborhood and regional parks or other recreational facilities would also be cumulatively considerable.

6.2.11 Transportation and Traffic

Impact TR-1 **Substantial increase in VMT (a key circulation system performance measure).**

Impact TR-2 **Conflict with an applicable congestion management program, including, but not limited to, level of service standards and travel demand measures, or other standards established by the County congestion management agency for designated roads or highways.**

The 2018 RTP/SCS's contribution to transportation and traffic impacts would also be cumulatively considerable.

6.2.12 Utilities

Energy

Impact ENERGY-2 **Result in an increase in demand for electricity or natural gas that exceeds available supply or distribution infrastructure capabilities that could result in the construction of new energy facilities or expansion of existing facilities, the construction of which could cause significant environmental effects.**

The 2018 RTP/SCS's contribution to impacts from wasteful, inefficient, and unnecessary consumption of energy would also be cumulatively considerable.

Wastewater

Impact WW-2 **Require or result in the construction of new wastewater treatment facilities, the construction of which could cause significant environmental effects**

Impact WW-3 **Result in a determination by the wastewater treatment provider which serves or may serve the project that is has inadequate capacity to serve the project's projected demand in addition to the provider's existing commitments.**

The 2018 RTP/SCS's contribution to wastewater impacts would also be cumulatively considerable.

Solid Waste

Impact SW-1 **Generate a substantial increase in the amount of solid waste that could exceed the permitted capacity of one or more landfills.**

The 2018 RTP/SCS's contribution to solid waste impacts would also be cumulatively considerable.

6.2.13 Water Supply and Hydrology

Impact W-1 **Violate any water quality standards or waste discharge requirements.**

Impact W-2 **Substantially deplete groundwater supplies or interfere substantially with groundwater recharge such that there would be a net deficit in aquifer volume or a lowering of the local groundwater table level.**

Impact W-3 **Substantially alter the existing drainage pattern of a site or area, including through the alteration of the course of a stream or river, in a manner which would result in substantial erosion or siltation on- or off-site or result in substantial soil erosion or loss of topsoil.**

Impact W-4 **Substantially alter the existing drainage pattern of a site or area, including through the alteration of the course of a stream or river, or substantially increase the rate or amount of surface runoff in a manner which would result in flooding on- or off-site.**

Impact W-5: **Create or contribute runoff water that would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff.**

Impact W-6 **Otherwise substantially degrade water quality.**

Impact W-8 **Place within a 100-year flood hazard area structures which would impede or redirect flood flows.**

Impact W-9 **Not have sufficient water supplies available to serve the project from existing entitlements and resources, so that new or expanded entitlements would be needed.**

The 2018 RTP/SCS's contribution to such impacts would also be cumulatively considerable.

6.3 SIGNIFICANT IRREVERSIBLE ENVIRONMENTAL EFFECTS

Section 15126.2(c) of the *CEQA Guidelines* requires a discussion of any significant irreversible environmental changes that would be caused by the proposed project. Specifically, Section 15126.2(c) states:

> *Uses of nonrenewable resources during the initial and continued phases of the project may be irreversible, since a large commitment of such resources makes removal or nonuse thereafter unlikely. Primary impacts and, particularly secondary impacts (such as highway improvement which provides access to a previously inaccessible area) generally commit future generations to similar uses. Also irreversible damage can result from environmental accidents associated with the project. Irreversible commitments of resources should be evaluated to assure that such current consumption is justified.*

Generally, a project would result in significant irreversible environmental changes if any of the following would occur:

- The primary and secondary impacts would generally commit future generations to similar uses
- The project involves uses in which irreversible damage could result from any potential environmental accidents associated with the project

6.3.1 Use of Nonrenewable Resources that Would Commit Future Generations

Growth and land use changes that would result from implementation of the 2018 RTP/SCS would likely commit future generations to those uses. Once established, land use patterns can be difficult to change or significantly influence without considerable political, social, and economic cost. The development pattern reflected in the 2018 RTP/SCS represents a commitment of these areas to urban uses for the foreseeable future. The proposed 2018 RTP/SCS represents an improved and more efficient land use pattern, with more growth concentrated on less land and closer to existing infrastructure, than under the No Project Alternative. The result is better utilization of already developed land and better utilization of new land to

be converted at the urban edge or in undeveloped areas of the region. As a secondary result, per capita use of other nonrenewable resources decreases under the 2018 RTP/SCS. These include: lower per capita use of energy and fuels; less conversion of agricultural, open space, and habitat lands; and lower per-capita emissions of air pollutants, including GHGs

However, construction activities related to the 2018 RTP/SCS would nevertheless result in the irretrievable commitment of nonrenewable energy resources, primarily in the form of fossil fuels (including fuel oil), natural gas, and gasoline for automobile and construction equipment and aggregate supply used in construction.

With respect to operation activities, compliance with all applicable building codes, as well as project mitigation measures or project requirements, would help ensure that natural resources are conserved or recycled as feasible. It is also possible that new technologies or systems will emerge, or will become more cost-effective or user-friendly, that will further reduce the region's reliance upon nonrenewable resources; however, even with implementation of conservation measures consumption of nonrenewable resources would generally increase with implementation of the Plan.

Furthermore, growth generally results in long-term increase in the demand for electricity and natural gas supplies and distribution. However, the proposed 2018 RTP/SCS and other federal and state energy efficiency standards will result in lower per-capita demand by encouraging development in urban areas; encouraging energy conservation in new construction and existing buildings; and reducing the infrastructure energy demands by encouraging alternative transportation such as bicycling, walking, and public transit. Furthermore, the proposed 2018 RTP/SCS would result in lower per-capita VMT.

The County also has multiple nonrenewable resources, including agricultural lands, open space, habitat areas, and mineral resources areas that contain aggregate. Increased levels of development outside of already developed areas could result in permanent loss or other adverse impacts to these resource areas.

While approximately 8,884 acres of undeveloped land, as well as 1,518 acres of important agricultural land and 144 acres of critical habitat would be converted to urban land uses as a result of implementation of the proposed 2018 RTP/SCS, this area of potential impact is smaller than would otherwise occur without regional efforts to encourage more compact growth (the No Project Alternative would consume 10,525 acres of undeveloped land consumed, 2,311 acres of important agricultural land and 176 acres of critical habitat). By increasing the density of development in urban areas and decreasing the footprint of growth, pressures to convert agricultural and open space lands outside areas planned for growth are decreased.

6.3.2 Irreversible Damage from Environmental Accidents

Any growth in the region includes the potential for irreversible damage from environmental accidents. For example, greater densities expose more people in the same area to unexpected environmental events such as fire, flood, and/or earthquake which could lead to irreversible damage. In addition, irreversible changes to the physical environment could occur from the accidental release of hazardous materials associated with transport on roadways as more hazardous materials are transported through the region and more people are located in closer proximity to hazardous materials threats.

However, this exposure would exist under any growth scenario. Federal and state regulations require that RTPs accommodate projected growth in a region based on market-based forecasts. The SCS reduces the footprint of that growth compared to the No Project Alternative. Implementation of the proposed 2018 RTP/SCS would not, in and of itself, result in greater potential of irreversible damage from an environmental accident.

6.4 LESS THAN SIGNIFICANT ENVIRONMENTAL EFFECTS

6.4.1 Geology

In 2015, the California Supreme Court in *California Building Industry Association v. Bay Area Air Quality Management District (CBIA v. BAAQMD (2015) 62 Cal.4th 369)*, held that CEQA generally does not require a lead agency to consider the impacts of existing environmental conditions on the future residents or users of a project. However, if a project risks exacerbating preexisting environmental hazards or conditions, the lead agency is required to analyze the impact of that exacerbated condition on the environment, which may include future residents and users within the project area. Transportation and land use projects under the 2018 RTP/SCS would not exacerbate existing environmental hazards related to geological and soil conditions. Therefore, under *CBIA v. BAAQMD*, there would be no Plan impact associated with the following Appendix G questions:

- Expose people or structures to potential substantial adverse effects, including the risk of loss, injury, or death involving:
  - Rupture of a known earthquake fault, as delineated on the most recent Alquist-Priolo Earthquake Fault Zoning Map issued by the State Geologist for the area or based on other substantial evidence of a known fault. Refer to Division of Mines and Geology Special Publication 42;
  - Strong seismic ground shaking;
  - Seismic-related ground failure, including liquefaction; and
  - Landslides.

- Be located on a geologic unit or soil that is unstable, or that would become unstable as a result of the project, and potentially result in on- or off-site landslide, lateral spreading, subsidence, liquefaction or collapse.

- Be located on expansive soil, as defined in Table 18-1-B of the Uniform Building Code (1994), creating substantial risks to life or property.

The following Appendix G question would not fit the CBIA decision, in that groundwater pollution caused by inappropriately sited septic tanks could affect offsite beneficial uses of groundwater:

- Have soils incapable of adequately supporting the use of septic tanks or alternative waste water disposal systems where sewers are not available for the disposal of waste water

However, the impact from use of septic tanks would be less than significant as County regulation would assure proper septic tank design.[1]

6.4.2 Hazards

Transportation improvement projects under the 2018 RTP/SCS could facilitate the routine transport of hazardous materials on roadways or railways in Tulare County but would not directly result in a transport-related hazard. Compliance with existing laws and regulations, such as the federal Resource Conservation and Recovery Act (RCRA), the state Hazardous Waste Control Act and California Vehicle Code, and local hazardous substances and waste regulation, would ensure that the routine transport of hazardous materials, the release of hazardous materials through reasonably foreseeable upset, and the handling of acutely hazardous substances within proximity to schools would be such that impacts from transportation and land use projects under the 2018 RTP/SCS would be less than significant.

With respect to hazardous materials sites listed under Government Code Section 65962.5, the majority of transportation improvements involve modification of existing facilities, rather than construction of new facilities, and would not be likely to occur on known hazardous materials sites. With regard to future transportation projects that would develop new facilities, and land use projects, it would be speculative to determine whether future projects would be sited on listed hazardous materials sites. However, as part of project-specific CEQA review such projects would be required to address any on-site environmental issues, including any potential hazardous materials, and mitigate such impacts accordingly such that there would be no significant hazard to the public or the environment. Impacts would be less than significant.

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1 Tulare County Environmental Health Services Division. Requirements for Submission of Engineered Sewage Disposal Systems. Available online at: https://tularecountyeh.org/eh/index.cfm/guidance-library/liquid-waste/, accessed April 20, 2018.

Some land use projects under the 2018 RTP/SCS could be located within an airport safety zone or in the vicinity of a private airstrip. However, existing plans and regulations, including the Tulare County Comprehensive Airport Land Use Plan (ALUP) and Federal Aviation Administration regulation of airports and airstrips, would prevent significant safety hazards for people residing or working in the project area. Also, under the *CBIA v BAAQMD* case mentioned above, CEQA documents need not analyze exposure of project residents and workers to preexisting airport and airstrip hazards, and land use projects under the 2018 RTP/SCS would not exacerbate these hazards.

The 2018 RTP/SCS would have no significant adverse impact on adopted emergency response plans or emergency evacuation plans. Emergency plans and programs are required to be updated periodically to plan for forecasted growth, and project-level CEQA reviews routinely assure that individual land use or transportation projects do not adversely affect emergency response or evacuation plans. Impacts would be less than significant.

Although future development upon implementation of the 2018 RTP/SCS would be focused on infill in existing urbanized areas, there would be some development in wildfire hazard areas.. Therefore, implementation of the 2018 RTP/SCS would expose people to new wildland fire hazards. However, compliance with policies found in the Tulare County General Plan Health and Safety Element Update would assure that risks to life and property would be less than significant.[2]

6.4.3. Mineral Resources

According to the Tulare County General Plan Recirculated Draft EIR,[3] economically, the most important minerals that are extracted in Tulare County are sand, gravel, crushed rock, and natural gas. Other minerals that could be mined commercially include tungsten, which has been mined to some extent, and relatively small amounts of chromite, copper, gold, lead, manganese, silver, zinc, barite, feldspar, limestone, and silica. Minerals that are present but do not exist in the quantities desired for commercial mining include antimony, asbestos, graphite, iron, molybdenum, nickel, radioactive minerals, phosphate, construction rock, and sulfur.

Aggregate resources are the most valuable mineral resource in the County because it is a major component of the Portland cement concrete (PCC) and asphaltic concrete (AC). PCC and AC are essential to constructing roads, buildings, and providing for other infrastructure needs. There are four streams that have provided the main source of high quality sand and gravel in Tulare County to make PCC and AC. They include the Kaweah River, Lewis Creek, Deer Creek and the Tule River. The highest quality

2 Tulare County. 2016. *Health and Safety Element Update.* October.

3 Tulare County General Plan Recirculated Draft EIR, 2010

deposits are located at the Kaweah and Tule Rivers. Lewis Creek deposits are considerably inferior to that of the other two rivers. This is due to the fact that the sand and gravel particles in Lewis Creek are flat. The higher quality aggregate resource areas located along the Kaweah River, near Lemon Cove, and a location on the Tule River between Porterville and Lake Success. These deposits are ideal because the streams have steep gradients, which wash away soft, weak rocks allowing concentrated amounts of the desired round and hardened material in the streambed.

The Tulare County General Plan Recirculated Draft EIR indicates there is estimated to be a total of 932 million tons of aggregate resources in Tulare County. This figure includes 219 million tons of reserves available for mining and 200 million tons that are located in the hard rock quarries southeast of Porterville. Of that total, 19 million tons was located in Northern Tulare County. Lemon Cove has been the most highly extracted area for PCC quality aggregate supplies.

According to the Tulare County Recirculated Draft General Plan EIR, past studies have shown that there is a strong correlation between the total amount of aggregate production and the population in a defined area. Using this correlation, the historical rate of consumption of aggregate resources in the entire County has been calculated to be 5.33 tons, per person, per year. This rate was calculated using the population and reported aggregate production record for both PCC and AC aggregate from 1960 to 1995. The population growth between 1960 and 1995 was 187,663. The current population projection for 2042 is 604,969 is substantially below projections (up to 1,010,000 people for the years 2040 to 2044) included in the report, *Mineral Land Classification of Concrete Aggregate Resources in the Tulare County Production – Consumption Region*.

The Tulare County General Plan Recirculated Draft EIR indicates that for a projected population of 742,970 in 2030 (considerably more than now projected in 2042), the 50-year demand for aggregate resources would be for a total of 150 million tons of aggregate (86 million tons for PCC and 54 million tons for AC) if consumption rates stay constant and the aggregate resources are accessible. Reserves were estimated to be 219 million tons.

The Tulare County General Plan includes a number of policies designed to conserve and protect existing mineral resource operations by limiting the development of potentially incompatible uses near existing identified or potential mineral deposits.[4] Mineral resource extraction is generally not located in urban areas because of land use conflicts. If any transportation or land use projects developed under the 2018 RTP/SCS were to be located in areas of significant mineral resources, they would be required to obtain a discretionary permit that adheres to the policies of the applicable jurisdictions.

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4 Tulare County. Tulare County General Plan 2030 Update (p 8-11). February, 2010.

There are no transportation or land use projects included in the 2018 RTP/SCS that would directly result in the extraction or paving-over of mineral resources of value to the state, region, or County. Therefore, implementation of the 2018 RTP/SCS would not result in the loss of availability of such mineral resources, and impacts pertaining to mineral resources would be less than significant.

6.4.5 Water Supply and Hydrology

The 2018 RTP/SCS would not exacerbate existing conditions related to flooding from levee or dam failure or inundation from seiche, tsunami or mudflow and therefore the decision from *CBIA v.* BAAQMD (discussed above under ***6.4.4 Geology***) applies to the analysis of the following Appendix G questions. There would be no impacts related to

- Expose people or structures to a significant risk of loss, injury or death involving flooding, including flooding as a result of the failure of a levee or damn.
- Inundation by seiche or tsunami.

Transportation or development projects sited in hilly or mountainous areas could exacerbate mudflow risks. However, these risks would be analyzed and mitigated in project-specific CEQA documents. Therefore, the impact from implementation of the 2018 RTP/SCS on mudflows would be less than significant.

7.0 LIST OF EIR PREPARERS

LIST OF PREPARERS

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4.0 ENVIRONMENTAL IMPACT ANALYSIS

4.1 Aesthetics

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APPENDIX 1.0

Notice of Preparation and Comments
Notice of Preparation
Comments on Notice of Preparation

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NOTICE OF PREPARATION

To: Interested agencies and individuals

Subject: Notice of Preparation of a Program Environmental Impact Report for the 2018 Regional Transportation Plan, [including a Sustainable Communities Strategy (RTP/SCS)

Date: April 6, 2017

Lead Agency: Tulare County Association of Governments
210 N. Church St., Suite B
Visalia, CA 92391

The Tulare County Association of Governments (TCAG), as Lead Agency, is publishing this Notice of Preparation (NOP) to prepare a Program Environmental Impact Report (Program EIR) in accordance with the California Environmental Quality Act (CEQA) for the 2018 Regional Transportation Plan (RTP), which will include a Sustainable Communities Strategy (SCS) (collectively referred to as "RTP/SCS"). TCAG, as the Regional Transportation Planning Agency (RTPA) and the Metropolitan Planning Organization (MPO), is preparing an RTP/SCS as required by Section 65080 et seq, of Chapter 2.5 of the California Government Code, as amended by Senate Bill 375, "The Sustainable Communities and Climate Protection Act of 2008;" federal guidelines pursuant to the federal surface transportation reauthorization, Fixing America's Surface Transportation (FAST) Act; the Transportation Conformity for the Air Quality Attainment Plan per 40 CFR Part 51 and 40 CFR Part 93; and requirements set forth in Assembly Bill 32, The Global Warming Solutions Act of 2006, and Assembly Bill 197, State Air Resources Board: greenhouse gases: regulations (2016).

TCAG is soliciting views from your agency as to the scope and content of the environmental issues to be included in the EIR. TCAG seeks input from local, state, and federal agencies, as well as other interested parties, on issues relevant to the RTP (including the SCS).The project location, description, and the expected scope of environmental analysis are described on the following pages.

A scoping meeting for this project will be held on **Tuesday April 25, 2017** at **4p.m.** and at **6 p.m.** at the TCAG office, Sequoia Room (see location above). Due to the time limits mandated by state law, your response must be sent **not later than 30 days** after the date of this notice or **May 8, 2017**.

Please send your response to Gabriel Gutierrez, Associate Regional Planner, either electronically to: ggutierrez@tularecog.org; or at the Lead Agency mailing address shown above. Please include a return address and the name of a contact person in your agency/organization.

Introduction

CEQA and its implementing regulations (*State CEQA Guidelines*) require TCAG as the Lead Agency to prepare an EIR for any discretionary government action, including programs and plans that have the potential to cause significant adverse environmental effects. The 2018 RTP is a regional planning document that provides policy guidance to local jurisdictions within Tulare County. The RTP does not provide project-level CEQA compliance planning guidance. Therefore, given the regional nature of the RTP, preparation of a Program EIR, which is a "first-tier" CEQA document designed to consider "broad policy alternatives and program-wide mitigation measures," is appropriate (*State CEQA Guidelines* Sec. 15168). The Program EIR will programmatically evaluate environmental effects, including direct and indirect effects, growth-inducing impacts, and cumulative impacts, and will include alternatives to the project as well as mitigation measures, as needed; to offset any identified significant adverse environmental effects. In addition, the Program EIR can be used as a foundation for subsequent, local/site-specific environmental reviews to be conducted by local agencies (for planning and land use projects) and implementation agencies (for transportation projects), as individual projects in the region move forward through the environmental review process (*State CEQA Guidelines* Sec. 15385).

In addition to fulfilling legal requirements, the 2018 RTP Program EIR will provide an opportunity to inform decision makers and the public about potential significant environmental effects associated with the implementation of the RTP and alternatives. This first-tier regional-scale environmental analysis will also help local agencies evaluate and reduce direct and indirect impacts, growth-inducing impacts, and cumulative environmental effects with respect to local projects.

This NOP is intended to inform responsible agencies, interested agencies, organizations, and individuals of the preparation of the 2018 RTP Program EIR. Comments regarding the scope of the Program EIR received during the 30-day NOP review period will be used to refine the scope and content of the Program EIR, as appropriate.

Project Location and Background

The Project will be located in all of Tulare County. TCAG, as both the federally-designated MPO and the State-designated RTPA for Tulare County, is required by both federal and State law to prepare a long-range (at least 20-

year) transportation planning document known as a RTP. The RTP/SCS is an action-oriented document used to achieve a coordinated and balanced regional transportation system. TCAG member agencies include the County of Tulare and eight incorporated cities within Tulare County. **Figure 1** illustrates the TCAG region.

Project Description

The Project consists of Preparation of the 2018 RTP/SCS. The 2018 RTP/SCS is an update to the 2014 RTP/SCS. The RTP will be used to allocate federal and state funding for regional transportation projects. The SCS component of the project identifies policies and strategies to balance land use and transportation systems to reduce emissions from cars and light trucks.

TCAG does not implement individual projects in the RTP/SCS; these projects are implemented by local jurisdictions and other implementation agencies. Additional descriptions of the purpose and components of the RTP and SCS are included below.

A. 2018 Regional Transportation Plan

TCAG is required by federal law to develop an RTP that identifies a transportation system in line with mobility needs (while at the same attaining air quality mandates) and prioritizes proposed transportation projects. Pursuant to FAST authorization, TCAG must prepare and update a transportation plan for its metropolitan planning area every four years to ensure that the plan adequately addresses future travel needs and is consistent with the federal Clean Air Act.

The RTP component of the 2018 RTP/SCS identifies the region's mobility needs and associated land use patterns through 2042, sets forth an action plan of projects and programs to address the needs consistent with adopted policies (including local planning documents), and documents the anticipated available financial resources to implement the plan. Regional transportation improvement projects proposed to be funded, in whole or in part, in the State Transportation Improvement Program must be included in the adopted RTP. As State and federal revenues for transportation projects have declined in recent years, the RTP must address the feasibility of funding future projects and the impacts that precarious financing may have on planned transportation infrastructure.

The 2018 RTP will include the following key components:

- Transportation Planning Policies
- Planning Assumptions and Growth Trends
- Sustainable Communities Strategy
- Strategic Investments/Action Element
- Financial Constraints

- Future Transportation Planning
- Monitoring Progress

The 2018 RTP will also update the 2014 RTP's San Joaquin Valley-wide chapter to incorporate any changes since 2014, as well as policy changes. The 2018 RTP is designed to:

- Provide policy direction for transportation plans and decisions to better maintain, operate, and expand the transportation system;
- Document the region's current mobility situation and future goals;
- Detail future transportation improvements to serve as a base for Regional Transportation Improvement Programs (RTIPs) and State Transportation Improvement Programs (STIPs);
- Outline the implementation schedule of the proposed improvements and the agencies responsible for carrying them out;
- Improve the region's mobility while complying with regional, state, and federal policies.

The RTP will integrate information from four new plans, to be included in the document as appendices. The Regional Active Transportation Plan (RATP) describes the health and socioeconomic benefits of active transportation and the projects necessary to encourage and improve active transportation, thereby reducing vehicle trips in the region. The Long Range Transit Plan (LRTP) recommends region-wide transit enhancements through 2040 and will be beneficial for decision-makers when exploring the optimal positioning of the system. The Cross Valley Corridor Plan provides information on Transit Oriented Development (TOD) as well as the High Speed Rail investment and the promotion of economic development and revitalization in surrounding areas. To maximize the efficiency of the existing and future development of the transportation system, the Intelligent Transportation System (ITS) Strategic Deployment Plan will also be included as an appendix to the 2018 RTP. This plan will outline the priority of various ITS projects, how to fund them, and finally how to manage and integrate them over the next 20 years. Together, these four plans will provide important insight on promoting the wellness and sustainable growth of Tulare County communities through a well-planned and well-managed transportation system.

B. 2018 Sustainable Communities Strategy

Under SB 375, MPOs such as TCAG are required to develop an SCS as part of the RTP. The 2018 RTP will include an SCS pursuant to SB 375. The SCS will contain land use, housing, and transportation strategies that, if implemented, would allow the Tulare County region to meet greenhouse gas (GHG) emission reduction targets for cars and light trucks for the years 2020 and 2035. The current emissions targets for TCAG, as provided by the California Air Resources Board (CARB), are a regional target of a 5 percent reduction in per capita GHG emissions for the planning year 2020 and a 10 percent reduction in per capita GHG emissions for the planning year 2035, as compared to baseline per capita emissions levels in 2005. SB 375 requires that CARB update the targets every four

to eight years and then use those targets as goals to be achieved in the RTP. MPOs across the state are undergoing the updated target-setting process required by SB 375. CARB will review the MPO target recommendations made by the MPOs and will adopt GHG reduction targets for each MPO. Targets for TCAG and the seven other MPOs covering the San Joaquin Valley are anticipated to be set by January 1, 2018, for use in the 2018 RTP/SCS. If the targets established by CARB cannot be feasibly met, TCAG will prepare an Alternative Planning Strategy (APS) to show how the targets would be achieved through alternative development patterns, infrastructure, or additional transportation measures or policies.

Importantly, SB 375 does not provide MPOs with local land use authority. Therefore, while the RTP/SCS and associated Program EIR will evaluate a land use pattern utilizing the most recent planning assumptions (as well as alternatives), local government land use policies and regulations need not be amended to be consistent with the SCS.

Public Outreach

Community engagement and outreach are fundamental to the development of the 2018 RTP/SCS. By nature, this plan represents the region's mutual vision for its future and was developed using a grassroots, bottom-up approach. In addition, as an MPO, TCAG is required to adopt a public participation plan for the development of the SCS. In 2015 TCAG developed a plan that defined agency planning goals related to public participation and outlined methods to achieve such goals in preparing an RTP and a Federal Transportation Improvement Program. In 2012, TCAG also adopted a Sustainable Communities Strategy Public Participation Plan for the Tulare County Region, which increased outreach efforts to include informational meetings, workshops, and public hearings.

TCAG has solicited and will continue to solicit community involvement and input on the 2018 RTP through several committees, as outlined in the 2015 TCAG Public Participation Plan. Two such committees are the Tulare County Transportation Authority (TCTA) and the Technical Advisory Committee (TAC). TCTA and TAC are comprised of representatives from across the County, and they evaluate transportation and transportation planning issues and make recommendations to the TCAG Board of Governors about potential Board agenda items.

Another permanent TCAG advisory committee is the Social Service Transportation Advisory Council (SSTAC), which represents disabled and senior transit users, persons of limited means, transit operators, and local youth. SSTAC solicits input regarding the needs of Tulare County residents who are often underrepresented, and is an important line of communication between County residents and TCAG.

The Rail Advisory Committee makes recommendations regarding commercial rail in the county. Other influential groups include the Measure R Citizens Oversight Committee, which provides input on the implementation of the Measure R Expenditure Plan, the Active Transportation Advisory Committee (ATAC), which advises the TCAG Board on matters regarding bicycle and pedestrian interests, the Transportation Forecasting Model Technical Advisory Committee (TFMTAC), which meets to discuss traffic and data modeling, traffic volumes and congestion,

and the Transit Forum, composed of representatives from transit operations agencies who exchange information on transit-related issues. These committees are comprised of elected and non-elected members to maximize the opportunity for the public and other organizations to participate in planning processes.

Preliminary 2018 SCS Alternatives

The SCS included in the 2018 RTP will be an update to the 2014 SCS, and will likely be based on a preferred land use and transportation scenario that is consistent with the 2009 Tulare County Regional Blueprint (The Blueprint).

The Tulare County Regional Blueprint is a standalone policy document that is consistent with the San Joaquin Valley Regional Blueprint. TCAG was an active participant in the development of the San Joaquin Valley Regional Blueprint, which is a coordinated plan for the future of transportation and land use in the San Joaquin Valley through 2050. The San Joaquin Valley Regional Blueprint creates a vision for the entire San Joaquin Valley and provides a proactive plan to help address regional issues such as land use and transportation. The issues addressed in the San Joaquin Valley Regional Blueprint are large scale; thus, TCAG and its member agencies prepared the 2009 Tulare County Regional Blueprint to clarify Tulare County's role in the Valley Regional Blueprint process and to provide a vision and goals tailored to Tulare County.

The 2018 RTP/SCS is expected to refine the land use scenarios considered in the 2014 RTP/SCS, but it may also consider other scenarios. The 2014 RTP/SCS land use scenarios are briefly defined as follows:

> **Trend**. The trend scenario land use forecast is based on the 2014 RTP/SCS, existing land use designations from local agency general plans and linear growth trends. Under this scenario, the projected pattern of development will be generally consistent with current development patterns.
>
> **No Project.** This scenario is the same as the Trend scenario, but it assumes the 2014 RTP/SCS is not updated and excludes all future transportation projects, except those already having committed funds.
>
> **Blueprint (Proposed Plan).** The Blueprint scenario is based on the continued application of the development principles adopted as part of the 2009 Tulare County Regional Blueprint. Primary among these principles is an objective of 25 percent higher overall density for new development compared to the Trend scenario, and an increased emphasis on public transit and active transportation modes.
>
> **Blueprint Plus**. The Blueprint Plus scenario will evaluate a more pronounced change in future development patterns (i.e. greater density in urban areas) than that envisioned by the Blueprint with a maximum feasible emphasis on public transit and active transportation modes.

During the coming months, TCAG will continue to revise the land use scenarios based on comments and new data gathered from local jurisdictions and from the public outreach workshops. During the public outreach workshops,

residents, local jurisdictions and other stakeholders will be given the opportunity to provide input on the scenarios. This information and input will be reflected in the scenarios, along with other applicable factors, to ensure the development of the RTP is aimed at meeting the 2020 and 2035 GHG reduction targets.

The 2018 RTP/SCS and associated Program EIR will be based on the refinement of the above scenarios and is expected to consist of an intensified land use distribution approach that concentrates the forecasted population and employment growth in urban areas. The transportation network will include highway, local street, active transportation, and transit investments to serve a more concentrated urban growth pattern. The remaining scenarios will be evaluated in the alternatives section of the Program EIR.

Scope of Environmental Analysis/Probable Environmental Effects

The impact categories listed below have been preliminarily identified for analysis in the 2018 RTP/SCS EIR.

- Aesthetics
- Agriculture & Forestry Resources
- Air Quality
- Biological Resources
- Cultural Resources
- Geology and Soils
- Greenhouse Gas Emissions
- Energy
- Hazards & Hazardous Materials
- Hydrology & Water Quality
- Land Use and Planning
- Mineral Resource
- Noise
- Population & Housing
- Public Services & Utilities
- Recreation
- Transportation
- Tribal Cultural Resources

In addition, as noted above, the Program EIR will address cumulative impacts, growth-inducing impacts, and other issues required by CEQA.

SOURCE: Google Maps, 2017

FIGURE **1**

IMPACT SCIENCES

Map of the TCAG Region

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Making Conservation a California way of life.

May 10, 2017

Gabriel Gutierrez
Tulare County Association of Governments
210 N. Church St. Suite B
Visalia, CA 93291

Dear Mr. Gutierrez:

Thank you for the opportunity to review and provide comments on the Tulare County Association of Governments (TCAG) Notice of Preparation (NOP) 2018 Regional Transportation Plan/Sustainable Communities Strategy (RTP/SCS) draft Environmental Impact Report (EIR). Caltrans commends TCAG for their timely outreach and preparation efforts to seek comments from their local partners and constituents.

Caltrans looks forward to partnering with TCAG in evaluating regional issues, population and traffic growth projections and recommend multimodal solutions to accommodate future transportation needs. Caltrans will work in partnership with TCAG and its local partners to ensure that planned projects in the RTP are equitable and sustainable, and are developed in an open and collaborative manner, which is also consistent with the Caltrans' mission, vision and values. Improving existing motor vehicle traffic, aviation, freight, mass transit, rail planning and promoting Active Transportation Programs with the implementation of complete streets features in planned projects will assist in providing a safe, sustainable, integrated transportation system. These fundamentals will help support transportation infrastructure and smart growth that lead to Green House Gas (GHG) and Vehicle Miles Traveled (VMT) reductions for Tulare County and the San Joaquin Valley.

Caltrans looks forwards to the opportunity to review TCAG's RTP/SCS draft EIR and will provide comments and recommendations at that time.

If you have any further questions, please contact me at (559) 445-5421.

Sincerely,

Lorena Mendibles

LORENA MENDIBLES
Transportation Planning – Planning North Branch

APPENDIX 4.4

Terrestrial Biota, Habitats and Special Status Species

Terrestrial Biota and Habitats

This information is supplementary to **Section 4.4, Biological Resources.** It is important to note that plant communities are not always clearly defined with strictly delineated boundaries. Plant communities are dependent on or affected by factors such as: geographical location, soil types, precipitation rates, angle and direction of slopes, elevations, microclimates, and successional considerations. Therefore, it is not uncommon to find a particular plant or grouping of plants growing outside the areas that would be considered their customary habitats if some of the above factors are advantageous to that growth.

Habitats

Tulare County contains a wide diversity of tree (hardwood and coniferous forests, oak woodlands), shrub (chaparrals) and herbaceous (grasslands) habitat types. Forty-one habitat types are mapped within Tulare County using the California Department of Fish and Wildlife's (CDFW) California Wildlife Habitat Relationships (CWHR) habitat classification system.[1] A description of each of the habitats adapted from *A Guide to Wildlife Habitats of California*[2] is presented below. Nine of the forty-one habitat types are designated aquatic types and are discussed in 4.4.1.2 below. The vegetation classifications from *A Manual of California Vegetation, Second Edition* (Sawyer et al., 2009) that most closely resemble those classified by the CWHR are also presented in each description. It should be noted that these habitats are generalized and that site-specific variation is likely present. Also note that the CWHR classification system maps habitats from a broad perspective, and in many areas, it is expected that two or more habitats may blend with one another. Habitats which occur within populated areas can also show variation because of a greater exposure to anthropogenic influences, such as the introduction of exotic plant species and manufactured growing conditions.

Tree-Dominated Habitats

Tulare County is home to a variety of hardwood, coniferous, and mixed woodlands and forests. These tree-dominated habitats can support diverse wildlife populations. Riparian habitats are generally the terrestrial areas adjacent to fresh water bodies forming a vegetated corridor from stream edge to floodplain edge. Riparian habitats occur in and along the county's four major rivers (Kings River; Kaweah River; Tule River; and White River/Deer Creek), as well as along the many creeks, streams, arroyos, and ravines in the County. Riparian areas are rich in wildlife species, providing foraging, migration, roosting, and nesting/breeding habitat. The following are descriptions of types of tree-

[1] California Department of Fish and Wildlife (CDFW). 2008. *California Wildlife Habitat Relationships.*

[2] Mayer, K.E. and Laudenslayer, W.F. Jr..1988. *A Guide to Wildlife Habitats in California.* State of California, The Resources Agency, California Department of Forestry and Fire Protection.

dominated habitats that could be impacted by development (transportation projects and land use changes) as proposed under the 2018 RTP/SCS.

Aspen Forest

Mature stands of quaking aspen (*Populus tremuloides*) typify this habitat and usually have relatively open canopies, often shared with other deciduous trees and a few conifer species, typically pine. All stands spread by root suckering, resulting in stands comprised of clones of different age classes. Aspen stands in California occur primarily at higher elevations near seeps, streams, and meadows on the eastern slopes of the Sierra Nevada and Cascade Ranges. Aspen forests typically correspond to the *Populus tremuloides* forest alliance as described by Sawyer et al.[3]

Blue Oak-Foothill Pine Woodland

This habitat is typically diverse in structure both vertically and horizontally and is composed primarily of a mix of hardwoods, conifers, and shrubs. Shrub distributions tend to be clumped, with interspersed patches of annual grassland. Woodlands of this type generally tend to only have small accumulations of dead and downed woody material, compared with other tree habitats in California. Blue oak (*Quercus douglassii*) and foothill pine (*Pinus sabiniana*) typically comprise the overstory of this habitat, with blue oak usually most abundant. In the foothills of the Sierra Nevada, other tree species typically associated with this habitat are interior live oak (*Quercus wislizeni*) and California buckeye.ZCM: v/

California Buckeye

In the Coast Range, associated tree species include coast live oak (*Quercus agrifolia*), valley oak (Q*uercus lobata*), and California buckeye (*Aesculus californica*). In rocky areas, interior live oak sometimes dominates the overstory, especially on north-facing slopes at higher elevations. At lower elevations, where blue oaks make up most of the canopy, the understory tends to be primarily annual grasses and forbs. At higher elevations, where foothill pines and even interior live oaks sometimes comprise the canopy, the understory usually includes patches of shrubs in addition to the annual grasses and forbs. Shrub species that can be associated with this habitat type include various buckbrush (*Ceanothus* spp.) species and manzanita (*Arctostaphylos* spp.). Other species found in this habitat type can include California coffee berry (*Rhamnus californicus*), poison-oak (*Toxicodendron diversilobum*), and silver lupine (*Lupinus albifrons*). This habitat is generally located in the foothills of the Central Valley, between 500 and 3000 feet (ft) in

[3] Sawyer, J. O., T. Keeler-Wolf, and J.M. Evens. 2009. *A Manual of California Vegetation, Second Edition.*

elevation. Blue oak-foothill pine typically corresponds to the *Quercus douglasii* Woodland Alliance or *Pinus sabiniana* Woodland Alliance.[4]

Blue Oak Woodland

Generally these woodlands have an over story of scattered trees, although the canopy can be nearly closed. The canopy is dominated by broad-leaved trees 16 ft to 50 ft tall, commonly forming open savanna-like stands on dry ridges and gentle slopes. Blue oak (*Quercus douglasii*) is typically the dominant tree species. Shrubs such as poison oak (*Toxicodendron diversilobum*), California coffee berry (*Frangula californica*), buckbrush (*Ceanothus cuneatus*), and redberry (*Rhamnus crocea*) are often present but rarely extensive, and often occur on rock outcrops. Typical understory is composed of an extension of Annual Grassland vegetation described below. Blue oak woodland typically corresponds to the *Quercus douglasii* Woodland Alliance.[5]

Jeffrey Pine Forest

The structure of the Jeffrey pine forest varies over its distribution. A single tree layer is characteristic of Jeffrey pine (*Pinus jeffreyi*) stands on moderately dry sites. On moist and mesic sites, a second tree layer exists which is composed of deciduous hardwood species. Jeffrey Pine habitats are dominated by Jeffrey pine. A sclerophyllous shrub layer is common to most Jeffrey pine stands except on serpentine soils and extremely xeric sites. Jeffrey pine forests occur in mountainous regions such as the Sierra Nevada and ranges in elevation from 500 to 9,500 ft. Jeffrey pine forest typically corresponds to the *Pinus jeffreyi* forest alliance.[6].

Juniper Woodland

Juniper habitats are characterized as woodlands of open to dense aggregations of junipers (*Juniperus* sp.) in the form of arborescent shrubs or small trees. Juniper woodlands generally occur at middle elevations forming a transition between habitats at higher elevations. Juniper woodlands occur on virtually all exposures and slopes, but are common on level to gently rolling topography. Junipers may be found on soils ranging from rocky to well-drained. Slope aspect has a strong influence on the elevational distribution of junipers. On northfacing slopes, junipers range from 4,000 to 6,000 ft; whereas, on

[4] Ibid.

[5] Ibid.

[6] Ibid.

southfacing slopes, junipers range from 6,000 to 8,000 ft. Juniper woodland typically corresponds to the *Juniperus californicus* Woodland Alliance or *Juniperus grandis* Woodland Alliance.[7]

Lodgepole Pine Forest

Lodgepole pine forests typically form open stands of similarly sized trees in association with few other species and with a sparse understory. Lodgepole pine (*Pinus contorta*) overwhelmingly dominates the habitat. Occasional associates include aspen and mountain hemlock (*Tsuga martensiana*). The understory may be virtually absent, consisting of scattered shrubs and herbs, or a rich herbaceous layer at meadow margins. Many lodgepole stands are associated with meadow edges and streams, where the understory consists of grasses, forbs, and sedges. Lodgepole pine forest typically corresponds to the *Pinus contorta* ssp. *murrayana* forest alliance.[8]

Montane Hardwood Forest

A typical montane hardwood habitat is composed of a pronounced hardwood tree layer, with an infrequent and poorly developed shrub stratum, and a sparse herbaceous layer. At higher elevations, scattered huckleberry oak (*Quercus vacciniifolia*) is present amongst an overstory of various conifers including ponderosa pine (*Pinus ponderosa*), Coulter pine (*Pinus coulteri*), California white fir (*Abies concolor*), and Jeffrey pine (*Pinus jeffreyi*). At mid–elevations, typical associates include Douglas-fir (*Pseudotsuga menziesii*), tanoak (*Notholithocarpus densiflorus*), Pacific madrone (*Arbutus menziesii*), California black oak (*Quercus kelloggii*), and bristlecone fir (*Abies bracteata*). At lower elevations knobcone pine (*Pinus attenuata*), foothill pine, Oregon white oak (*Quercus garryana*). Understory vegetation is mostly scattered woody shrubs and a few forbs. Elevations range from 300 feet near the Pacific Ocean up to 9000 ft. Montane hardwood typically corresponds to the *Quercus chrysolepis* forest alliance.[9]

Montane Riparian Forest

The vegetation of montane riparian forest habitats is variable and often structurally diverse. Usually, these riparian areas occur as a narrow, often dense grove of broad-leaved, winter deciduous trees with a sparse understory. At high mountain elevations, more shrubs tend to occur in the understory. In the Sierra Nevada, characteristic species can include thinleaf alder (*Alnus incana*), black cottonwood (*Populus*

[7] Ibid.

[8] Ibid.

[9] Ibid.

trichocarpa), and dogwood (*Cornus* sp.). Montane riparian forest can correspond to the *Acer macrophyllum* forest alliance, *Umbellularia californica* forest alliance or *Populus trichocarpa* forest alliance.[10]

Valley Oak Woodland

This habitat can range in structure from savanna-like to forest-like stands. The canopies tend to be partially closed and comprised mostly of winter-deciduous, broad-leaved species such as valley oak. Dense stands typically grow in valley soils along natural drainages and decrease with the transition from lowlands to uplands. Shrubs are also associated with this habitat in lowland areas, especially along drainages. Valley oak stands with little or no grazing tend to develop a partial shrub layer of bird-disseminated species, such as poison oak (*Toxicodendron diversilobum*), toyon (*Heteromeles arbutifolia*, and California coffeeberry. Ground cover consists of a well-developed carpet of annual grasses and forbs, such as species of wild oat (*Avena* sp.), bromes (*Bromus* sp.), and ryegrass (*Lolium* sp.). Valley oak woodland typically corresponds to the *Quercus lobata* Woodland Alliance.[11]

Valley Foothill Riparian

This habitat type is associated with drainages, particularly those with low-velocity flows, flood plains, and gentle topography. This habitat is generally comprised of a sub-canopy tree layer dominated by cottonwoods (*Populus* sp.), sycamore (*Platanus racemosa*), and/or valley oak, and an understory shrub layer typically consisting of willows (*Salix* spp.) and/or mulefat (*Baccharis salicifolia*). Valley foothill riparian can correspond to multiple alliances, depending upon the species composition.[12] These alliances can include, but are not limited to, *Platanus racemosa* Woodland Alliance, and the various *Populus* alliances, depending upon dominant species present.

Eucalyptus Forest

This habitat type ranges from single-species thickets with little or no shrubby understory to scattered trees over a well-developed herbaceous and shrubby understory. Eucalyptus is a non-native, invasive species that arrived in California in the mid-1800's. Its unique appearance and various uses enticed entrepreneurs to plant large forests and it has survived and spread since, in many places successfully dominating native hardwoods. In most cases, eucalyptus forms a dense stand with a closed canopy. Blue gum eucalyptus (*Eucalyptus globulus*) and red gum eucalyptus (*E. camaldulensis*) are the most common eucalyptus species found in these stands. The understory of these areas tends to have extensive patches of

[10] Ibid.

[11] Ibid.

[12] Ibid.

leaf litter, but may include species such as poison oak. Trees within this habitat type are typically planted in rows for use as a wind break.

Montane Hardwood-Coniferous Forest

These forests include both conifers and hardwoods, often as a closed forest. To be considered montane hardwood-coniferous forest, at least one-third of the trees must be conifer and at least one-third must be broad-leaved. The habitat often occurs in a mosaic-like pattern with small pure stands of conifers interspersed with small stands of broad-leaved trees. Most of the broad-leaved trees are sclerophyllous evergreen, but winter-deciduous species also occur. Relatively little understory occurs under the dense, bilayered canopy. However, considerable ground and shrub cover can occur in ecotones or following disturbance. Montane hardwood-coniferous forest can correspond to multiple alliances as described by Sawyer et al. (2009) depending upon the species composition. These alliances can include, but are not limited to, *Arbutus menziesii* forest alliance, *Pinus coulteri* forest alliance, *Lithocarpus densiflorus* forest alliance, *Quercus chrysolepis* forest alliance, and *Sequoia sempervirens* forest alliance.

Pinyon-Juniper Woodland

Pinyon-juniper woodland typically is an open woodland of low, round-crowned, bushy trees that are needle-leaved, evergreen, and depending on site suitability, range from less than 30 ft to 50 ft in height. Stand structure varies depending on site quality and elevation. On favorable sites with little disturbance, pinyon-juniper forms dense cover, whereas on drier sites, spacing between trees increases. Overstory species composition at lower- and mid-level elevations ranges from pure stands of pinyon (*Pinus monophylla*) to stands of pinyon mixed with juniper (*Juniperus*) and oaks (shrub live, California scrub, or canyon live). At higher elevations, ponderosa pine (*Pinus ponderosa*) and Jeffrey pine (*Pinus jeffreyi*) may be found in this habitat. Pinyon-juniper habitats generally are found on slopes that are steep, rocky, dry, and face east. Most pinyon-juniper habitats are found east of the Sierra Nevada from 6,000 to 9,000 ft. Pinyon-juniper woodland typically corresponds to the *Juniperus osteosperma* woodland alliance or *Pinus monophylla* Woodland Alliance.[13]

Ponderosa Pine Forest

Tree spacing in ponderosa pine forests varies from open to dense. The ponderosa pine forest includes pure stands of ponderosa pine (*Pinus ponderosa*) as well as stands of mixed species, in which at least 50 percent of the canopy area is ponderosa pine. Associated species vary depending on location in the state and site conditions. Typical tree associates include, but are not limited to white fir (*Abies concolor*),

[13] Ibid.

incense-cedar (*Calocedrus decurrens*), Coulter pine (*Pinus coulteri*), Jeffrey pine (*Pinus jeffreyi*), sugar pine (*Pinus lambertiana*), Douglas-fir (*Pseudotsuga menziesii*), Bigcone Douglas-fir (*Pseudotsuga macrocarpa*). Associated shrubs include manzanita (*Arctostaphylos* sp.), buckbrush (*Ceanothus* sp.), and Pacific dogwood (*Cornus nuttallii*). This habitat type is found on all aspects, depending on soils and location within the local elevational range. Ponderosa pine forest is found on suitable mountain and foothill sites throughout California except in the immediate area of San Francisco Bay, in the north coast area, south of Kern County in the Sierra Nevada and east of the Sierra Nevada Crest. Ponderosa pine forest typically corresponds to the *Pinus ponderosa* forest alliance. [14]

Red Fir Forest

Large expanses of nearly monotypic stands of red fir (*Abies magnifica*) are common throughout its range, with very few other plant species in any layer. Heavy shade and a thick layer of duff tend to inhibit understory vegetation, especially in dense stands. Red fir habitats are found on frigid soils over a wide range of topography, exclusive of very wet sites. Red fir is distributed in an elevational band from about 6,000 to 9,000 ft. red fir forest extends from northern Lake County northward through the North Coast Ranges and from Kern County northward through the Sierra Nevada into the Cascade Range of southwestern Oregon. Red fir forest typically corresponds to the *Abies magnifica* forest alliance.[15]

Sierran Mixed Conifer Forest

The Sierran mixed conifer forest is an assemblage of conifer and hardwood species that forms a multilayered forest. Five conifers and one hardwood typify the mixed conifer forest: white fir (*Abies concolor*), Douglas-fir (*Pseudotsuga menziesii*), ponderosa pine (*Pinus ponderosa*), sugar pine (*Pinus lambertiana*), incense-cedar (*Calocedrus decurrens*), and California black oak (*Quercus kelloggii*). Some species common to the understory of this habitat type include deerbrush (*Ceanothus integerrimus*), manzanita (*Arctostaphylos* sp.), and chinquapin (*Chrysolepis chrysophylla*). The Sierran mixed conifer forest generally forms a vegetation band ranging in elevation from 2,500 to 4,000 ft in the north and 4,000 to 10,000 ft in the southern Sierra Nevada. Sierran mixed conifer forest can correspond to multiple alliances, depending upon the species composition.[16]

[14] Ibid.

[15] Ibid.

[16] Ibid.

Subalpine Conifer Forest

Subalpine conifer forests are open forests with needle-leaved evergreen trees of low to medium stature, such as Engelmann spruce (*Picea engelmannii*), subalpine fir (*Abies lasiocarpa*), and lodgepole pine (*Pinus contorta*). Stand density and tree height are typically greater at lower limits of its elevational range. These forests typically occupy extremely harsh environments. Stands on exposed sites and windy ridges near tree line are shaped into krummholz stunted, mat-like forms. Shrubby vegetation and herbaceous ground cover are generally sparse or lacking. Soils are generally thin and of low-quality, coarse sand, gravel, volcanic debris, and rocks derived from decomposing parent material. Subalpine coniferous forest is generally distributed at high elevations in all significant mountain ranges of the State. Subalpine conifer forest can correspond to multiple alliances depending upon the species composition.[17]

White Fir Forest

The white fir forest habitat is characterized by nearly monotypic even aged white fir (*Abies concolor*). This habitat type is found throughout California on a variety of soils developed from different parent material, including volcanic and igneous rocks, granitics, various metamorphics, and sedimentary material. Soils are coarse-textured, well-drained, have poorly developed profiles, and are often rocky. This habitat type occurs at about 5,500 ft in the Southern Sierra Nevada. White fir forest typically corresponds to the *Abies concolor* forest alliance.[18]

Shrub Dominated Habitats

Shrub-dominated habitats, such as various chaparral communities, are comprised primarily of woody, evergreen shrubs, and occur predominantly along the foothills of the Sierra Nevada Range in eastern Tulare County. The following are descriptions of shrub-dominated habitats that could be impacted by development (transportation projects and land use changes) under the 2018 RTP/SCS.

Alpine Dwarf-Shrub

This habitat is comprised of primarily low graminoid and forb communities with an admixture of dwarf-shrubs including creambush oceanspray (*Holodiscus discolor*), Greene goldenweed (*Ericameria greenei*) and white mountain heather (*Cassiope martensiana*). The perennial herbs or dwarf shrubs comprising these communities are usually less than 18 inches tall. Coverage may reach 100 percent at lower elevations, but becomes increasingly open as elevation increases. On mesic sites, a continuous turf contrasts with patches

[17] Ibid.
[18] Ibid.

of bunchgrasses and cushion plants on drier sites. This habitat type is typically found above the timberline in the Sierra Nevadas.

Bitterbrush Shrubland

This habitat type comprised of Bitterbrush (*Purshia tridentata*) stands ranging from small, widely-spaced shrubs to large, closely-spaced shrubs with more than 90 percent canopy cover. Bitterbrush is only occasionally found in pure stands; however, most often bitterbrush occurs as a codominant with big sagebrush (*Artemisia tridentata*) or rubber rabbitbrush (*Ericameria nauseosa*). Bitterbrush habitats are found on flats and slopes with deep, well-drained, rapidly permeable, slightly acidic soils.

Chamise-Redshank Chaparral

This habitat type can range from nearly pure stands of chamise (*Adenostoma fasciculatum*) or redshank (*A. sparsifolium*) to a mixture of both. Mature Chamise-Redshank Chaparral is single layered, generally lacking well-developed herbaceous ground cover and over story trees. Shrub canopies frequently overlap, producing a nearly impenetrable canopy of interwoven branches. Redshank stands tend to be slightly taller and more open than chamise dominated stands. Fire occurs regularly in Chamise-Redshank Chaparral and influences habitat structure. Chamise-Redshank Chaparral typically corresponds to the *Adenostoma fasciculatum* Shrubland Alliance and *Adenostoma sparsifolium* Shrubland Alliance.[19]

Low Sage Shrubland

This habitat is generally dominated by broad-leaved, evergreen shrubs ranging in height from about 4 to 19 inches, typically averaging about 15 percent cover but sometimes with crowns touching. The habitat may be dominated by low sagebrush (*Artemisia arbuscula*) or black sagebrush (*Artemisia nova*), often in association with antelope bitterbrush (*Purshia tridentata*), or big sagebrush (*Artemisia tridentata*); black sagebrush is also commonly associated with winterfat (*Krascheninnikovia lanata*) and Mormon-tea (*Ephedra viridis*). Low sagebrush communities are generally restricted to elevated arid plains along the eastern flanks of the Sierra Nevada, from Inyo County northward through Modoc and Siskiyou Counties.

Mixed Chaparral

Mixed Chaparral is a structurally homogeneous brushland type dominated by shrubs with thick, stiff, heavily cutinized evergreen leaves. Shrub height and crown cover vary with age since last burn, precipitation, aspect, and soil type. At maturity, cismontane Mixed Chaparral typically is a dense, nearly impenetrable thicket. On poor sites, serpentine soils, or transmontane slopes, shrub cover may be

[19] Ibid.

considerably reduced and shrubs may be shorter. Leaf litter and standing dead material may accumulate in stands that have not burned for several decades. Mixed chaparral can correspond to multiple alliances, depending upon the species composition.[20] These alliances can include, but are not limited to, *Ceanothus cuneatus* Shrubland Alliance and the *Arctostaphylos glauca* Shrubland Alliance.

Montane Chaparral

The growth form of montane chaparral species can vary from treelike (up to 10 ft) to prostrate. Montane chaparral varies markedly throughout California. Species composition changes with elevational and geographical range, soil type, and aspect. Species that usually characterize montane chaparral communities include, but are not limited to, whitethorn Ceanothus (*Ceanothus cordulatus*), snowbrush Ceanothus (*Ceanothus velutinus*), and greenleaf manzanita (*Arctostaphylos patula*). Montane chaparral can be found on shallow to deep soils, on all exposures, and from gentle to relatively steep slopes. Montane chaparral is associated with mountainous terrain from mid to high elevation at 3,000 to 10,000 ft. Montane chaparral can correspond to multiple alliances, depending upon the species composition.[21] These alliances can include, but are not limited to, the *Ceanothus cordulatus* Shrubland Alliance.

Sagebrush Shrubland

Sagebrush stands are typically large, open, discontinuous stands of big sagebrush (*Artimisia tridentata*) of fairly uniform height. Often the habitat is composed of pure stands of big sagebrush, but many stands include other species of sagebrush (*Artimisia* sp.), rabbitbrush (*Ericameria nauseosa*), horsebrush (*Tetradymia canescens*), and gooseberry (*Ribes* sp.). The Sagebrush habitat is a discontinuous strip along the east and northeast borders of California south to the 37th parallel. It occupies dry slopes and flats from about 1,600 ft to 10,500 ft in elevation. Sagebrush shrubland can correspond to multiple alliances, depending upon the species composition.[22] These alliances can include, but are not limited to, the *Artimisia tridentata* Shrubland Alliance.

Herbaceous Dominated Habitats

These habitats are generally comprised of areas dominated by grasses and other non-woody species. The majority of this habitat in Tulare County is comprised of non-native grasslands. Native perennial grasslands which are dominated by perennial bunch grasses such as purple needlegrass (*Nassella pulchra*) were historically abundant within Tulare County but are now currently patchy in distribution. The

[20] Ibid.
[21] Ibid.
[22] Ibid.

following are descriptions of the herbaceous dominated habitats that could be impacted by development (transportation projects and land use changes) under the 2018 RTP/SCS.

Annual Grasslands

This habitat type is composed primarily of non-native annual herbs and forbs and typically lacks shrub or tree cover. The physiognomy and species composition of annual grasslands is highly variable and also varies considerably on a temporal scale. Grazing is a common land use within this habitat type. Common grass species include wild oats (*Avena* sp.), soft chess brome (*Bromus hordeaceous*), ripgut brome (*Bromus diandrus*), and red brome (*Bromus madritensis*). Common forb species can include species of filaree (*Erodium* sp.), and bur clover (*Medicago* sp.). California poppy can also be quite common in this habitat type. Annual grassland can correspond to multiple alliances, depending upon the species composition.[23] These alliances can include, but are not limited to, *Avena (barbata, fatua)* semi-natural stands and *Bromus (diandrus, hordeaceous) – Brachypodium distachyon* semi-natural stands.

Wet Meadow

Wet meadows at all elevations generally have a simple structure consisting of a layer of herbaceous plants. Shrub or tree layers are usually absent or very sparse; but may be found along the meadow edge. Within the herbaceous plant community a microstructure is frequently present. Species composition generally differs between sites and includes a variety of members of the following genera: *Agrostis*, *Carex*, *Danthonia*, *Juncus*, *Salix,* and *Scirpus*. Fewer species tend to occur as surface water depth increases during spring runoff. The single most important characteristic of a wet meadow is its hydrology. Seasonality and reliability of yearly water inflows and outflows largely determine the vegetational stability of wet meadows. In the Sierra Nevada and Cascade ranges, wet meadows usually occur above 3,940 feet in the north, and above 5,900 feet in the south. Because of the high amount of variation in composition, multiple alliances as described by Sawyer et al. (2009) can describe this habitat type.

Pasture

Pasture vegetation is a mix of perennial grasses and legumes, with typically complete canopy closure. Structually this habitat type resembles annual grassland habitats. Height of vegetation varies, according to season and livestock stocking levels. Old or poorly drained pastures may have patches of weeds in excess of two feet in height. The mix of grasses and legumes varies according to management practices such as seed mixture, fertilization, soil type, irrigation, weed control, and the type of livestock on the pasture.

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[23] Ibid.

Developed and Sparsely/Non-Vegetated Habitats

Developed and sparsely/non-vegetated habitats are abundant in Tulare County. Developed habitats are usually sparsely or non-vegetated, are associated with urban and agricultural areas, and are highly disturbed. Species that occur in these areas are typically adapted to anthropogenic disturbance and/or comprised of ornamental species. Sparsely vegetated habitats also tend to be associated with rock outcrops and cliffs. The following are descriptions of developed and sparsely/non-vegetated habitats that could be impacted by development (transportation projects and land use changes) under the 2018 RTP/SCS.

Cropland

This habitat type is characterized by areas in active agriculture and is an entirely man-made habitat. The structure of vegetation can vary in size, shape, and growing pattern. The dominant cropland use is row crops. Typical crops consist of grasses, brassicas, and forbs. Generally, four subcategories of cropland habitat classifications in the County: Dryland Grain Crop, Irrigated Hayfield Crop, and Irrigated Row and Field Crop.

Dryland Grain Crop. Vegetation in the dryland (nonirrigated) grain and seed crops habitat includes seed producing grasses, primarily barley, cereal rye, oats, and wheat. These seed and grain crops are annuals.

Irrigated Hayfield Crop. Vegetation in this habitat includes a variety of sizes, shapes, and growing patterns. Most irrigated grain and seed crops are grown in rows. Some may exhibit complete canopy enclosure while others may have significant bare areas between rows. All seed and grain crops are annuals. They are usually planted in spring and harvested in summer or fall. However, they may be planted in rotation with other irrigated crops and sometimes winter wheat or barley may be planted after harvest of a previous crop in the fall, dry farmed (during the wet winter and early spring months) or they may be irrigated, and then harvested in the spring.

Irrigated Row and Field Crop. Vegetation in this habitat includes a variety of sizes, shapes, and growing patterns. Cotton and asparagus can be three or four feet tall while others may be a foot or less high. Most irrigated row and field crops are grown in rows. Some may form 100 percent canopy, while others may have significant bare areas between rows. Most are annuals, while others, such as asparagus and strawberries, are perennial. The annuals are usually planted in spring and harvested in summer or fall. However, they may be planted in rotation with other irrigated crops and sometimes winter wheat or barley may be planted after harvest of a previous crop in the fall, dry farmed (during the wet winter and early spring months), and then harvested in the late spring.

Irrigated Grain Crop

Irrigated grain crops include corn, beans, barley, etc. Corn can reach ten feet tall, while dry beans are only several inches tall. Most irrigated grain and seed crops are grown in rows. Some may form 100 percent canopy, while others may have significant bare areas between rows. All seed and grain crops are annuals. Irrigated grain and seed crops are located on flat to gently rolling terrain. When flat terrain is put into crop production, it usually is leveled to facilitate irrigation. Rolling terrain is either dry farmed or irrigated by sprinklers, and the soils often dictate the crops grown.

Orchard Vineyard

This habitat type is characterized by typically open, single-species, tree-dominated habitats. Depending on the tree type and pruning methods, they are usually low, bushy trees with an open understory to facilitate harvest. Trees such as citrus, avocados, and olives are evergreen; others are deciduous. The understory is usually composed of low-growing grasses and other herbaceous plants, but may be managed to prevent understory growth totally or partially, such as along tree rows. Vineyards, comprised of grape vines, also share similar characteristics. Currently two subcategories of orchard vineyard habitat classifications that are recognized occur and could be impacted by development (transportation projects and land use changes) under the 2018 RTP/SCS: Deciduous Orchard and Evergreen Orchard

Deciduous Orchard. Deciduous orchards include trees such as, almonds, apples, apricots, cherries, figs, nectarines, peaches, pears, pecans, pistachios, plums, pomegranates, prunes, and walnuts. Trees range in height at maturity for many species from 15 to 30 ft. However, some can be 10 ft. or less (pomegranates and some dwarf varieties), or 60 ft. or more (pecans and walnuts). Crowns usually touch, and are usually in a linear pattern. Spacing between trees is uniform, depending on desired spread of mature trees. In some orchards, cover corps of resident species are present year round or are cultivated in the spring and summer. Many orchards are treated with herbicides down the tree rows. The cover crop can be composed of either natural or plated domesticated herbaceous plants.

Evergreen Orchard. Evergreen orchards include trees, such as, avocados, dates, grapefruit, lemons, limes, olives, oranges, tangerines, tangelos, and tangors. Trees range in height at maturity for many species from 15 to 30 ft., but can be 10 ft. or less in some dwarf varieties, or 60 ft. or more in date palms. Crowns often do not touch, and trees are usually planted in a linear pattern. Spacing between trees is uniform, depending on desired spread of mature trees. The understory in evergreen orchards usually consists of bare soil due to active managements such as tillage and/or herbicides.

Vineyard

Vineyards are composed of single species planted in rows, usually supported on wood and wire trellises. Vines are normally intertwined in the rows, but open between rows. Rows under the vines are usually sprayed with herbicides to prevent growth of herbaceous plants. Between rows of vines, grasses and other herbaceous plants may be planted or allowed to grow as a cover crop to control erosion. Vineyards can be found on flat alluvial soils in the valley floors, in rolling foothill areas, or on relatively steep slopes. Most vineyards are in valley or foothill areas.

Urban

This habitat type is also a completely man-made habitat, comprised of residential, commercial, and industrial developed areas. Plant species within urban habitats are typically comprised of ornamental and other non-native invasive plant species, with large developed areas lacking vegetation.

Barren

This habitat type is defined by the absence of vegetation. Any habitat with less than two percent total vegetation cover and less than 10 percent cover by tree or shrub species is defined as barren. Structure and composition of the substrate is largely determined by the region of the state as well as surrounding environment. Examples of barren habitats include areas of exposed parent rock and talus slopes.

Sensitive Vegetation Communities

Sensitive vegetation communities are natural communities and habitats that are either unique, of relatively limited distribution in the region, of particularly high wildlife value, or provide habitat to Rare or Endangered Species. These resources have been defined by federal, state, and local government conservation programs. The California Natural Diversity Database was used to identify sensitive vegetation communities located in the County.[24] Sensitive vegetation communities known to occur within the area include Stabilized Interior Dunes, Valley Sink Scrub, Valley Saltbush Scrub, Valley

[24] CDFW. 2017. *California Natural Diversity Database (CNDDB).*

Needlegrass Grassland, Valley Scaton Grassland, Wildflower Field, Alkali Seep, Valley Freshwater Marsh, Great Valley Cottonwood Riparian Forest, Great Valley Mesquite Scrub, Valley Oak Woodland, and Southern Interior Cypress Forest. The complete list of sensitive vegetation communities in the County is included in **Table 1.**

Table 1
Sensitive Communities and Critical Habitats Documented within Tulare County

Communities Considered Sensitive by the CDFW
Big Tree Forest
Central Valley Drainage Hardhead/Squawfish Stream
Great Valley Oak Riparian Forest
Northern Claypan Vernal Pool
Northern Hardpan Vernal Pool
Southern Interior Cypress Forest
Sycamore Alluvial Woodland
Valley Sacaton Grassland
Valley Saltbush Scrub
Valley Sink Scrub
USFWS-Designated Critical Habitat for Identified Species
California condor (*Gymnogyps californianus)*
California tiger salamander (*Ambystoma californiense*)
Hoover's spurge (*Chamaesyce hooveri)*
Keck's checker mallow (*Sidalcea keckii)*
Little Kern golden trout (*Oncorhynchus aguabonita whitei)*
San Joaquin orcutt grass (*Orcuttia inaequalis)*
Sierra Nevada big horn sheep (*Ovis canadensis sierrae)*
Vernal pool fairy shrimp (*Branchinecta lynchi)*
Vernal pool tadpole shrimp (*Lepidurus packardi)*

Sources: CNDDB (CDFW, 2018); USFWS, Critical Habitat Portal (2017)

Valley Sink Scrub

Valley sink scrub is characterized by low, open to dense succulent shrublands dominated by alkali-tolerant Chenopods, especially iodinebush (*Allenrolfea occidentalis*) or *Sueda* species. Valley sink scrub communities usually have no understory, though red brome (*Bromus rubens*) may occur. Other species may include recurved larkspur (*Delphinium recurvatum*), desert saltgrass (*Distichlis spicata*), rusty molly (*Kochia californica*), boraxweed (*Nitrophila occidentalis*), Parish's pickleweed (*Salicornia subterminalis*), alkali dropseed (*Sporobolus airoides*), shrubby seablite (*Sueda fructicosa*), and iodineweed (*S. torreyana*). Annual

species are most visible between January and April, while perennial species are more pronounced from March to September. Valley sink scrub occurs in heavy saline and/or alkaline clay soils of lakebeds or playas. High groundwater provides capillary water for perennial species. Soil surfaces often appear as a dark, sticky, clay soil overlain with a white salty crust.

Valley Saltbush Scrub

Valley saltbush scrub is characterized by open, gray, or blue-green chenopod shrubs (10 to 40 percent cover) with a low, herbaceous, annual understory. Cover types are dominated by alkali saltbush (*Atriplex polycarpa*) or spinescale (*A. spinifera*), with arrowscale (*A. phyllostegia*), Valley larkspur (*Delphinium recurvatum*), alkali heath (*Frankenia salina*), alkali golden bush (*Isocoma acradenia* ssp. *bracteosa*), bird's eyes (*Gilia tricolor*), common spikeweed (*Hemizonia pungens*), and cream cups (*Platystemon californicus*). Most perennials (except spinescale) flower from May through September. The annuals (and spinescale) are active from January through April. These communities are typically found on sandy to loamy soils without surface alkalinity, largely on rolling, dissected alluvial fans with low relief. Valley saltbush scrub occurs in the southern and southwestern San Joaquin Valley and the Carrizo Plains of San Luis Obispo County. This once extensive community has been nearly extirpated by agricultural conversion, flood control, and groundwater pumping.

Valley Needlegrass Grassland

Valley needlegrass grasslands are characterized by bunches of purple needlegrass (*Nassella pulchra*) with island pink yarrow (*Achillea borealis*), blow-wives (*Achyrachaena mollis*), false dandelion (*Agoseris heterophylla*), wild oats (*Avena fatua*), common goldenstar (*Bloomeria crocea*), golden brodiaea (*Triteleia ixiodes*), ripgut brome (*Bromus diandrus*), soft chess (*B. mollis*), red brome (*B. rubens*), soap plant (*Chlorogalum pomeridianum*), purple clarkia (*Clarkia purpurea*), California melic (*Melica californica*), chapparal oniongrass (*M. imperfecta*), shooting star (*Dodecatheon* spp.), valley tassels (*Castillea attenuate*), Plantain (*Plantago erecta*), one-sided bluegrass (*Poa scabrella*), and nodding needlegrass (*Nasella cernua*). Native and introduced annuals occur between the perennials and may actually exceed the bunchgrasses in cover. Soils are usually fine-textured clay that is moist or waterlogged during winter, but very dry in summer. Formerly extensive around the Sacramento, San Joaquin, and Salinas Valleys, as well as the Los Angeles Basin, valley needlegrass grasslands have since been reduced considerably.

Valley Sacaton Grassland

Valley Sacaton grassland is described as a tussock-forming grassland dominated by alkali dropseed (*Sporobolus airoides*). Other species may include desert saltgrass (*Distichlis spicata*) and dwarf barley

(*Hordeum depressum*). Valley Sacaton grassland occurs on fine-textured, poorly drained alkaline soils. Most sites have a high water table and/or are overflowed during winter flood events.

Valley Freshwater Marsh

Freshwater marshes are highly productive environments that support many species of distinctive plants and animals. Freshwater marshes are semi-dry to wet areas of standing or slow-moving water habitats less than 152 m (500 feet) above mean sea level that are usually the result of water runoff from mountainous regions. Marshes in Southern California often dry-up or become quite confined during the dry season. Therefore, plants in this community must be tolerant of dry soils for at least part of the year. Common vegetation in these habitats include water cress (*Rorippa nasturtium-aquaticum*), the water smartweeds and knotweed (*Polygonum amphibium* and *punctatum*, *Polygonum arenastrum*), pond lily (*Nuphar luteum*), common cattail (*Typha latifolia*), yerba mansa (*Anemopsis californica*), western goldenrod (*Euthamia occidentalis*), biennial sagewort (*Artemisia biennis*), mosquito fern (*Azolla filicoides*), tall flatsedge (*Cyperus eragrostis*), and species of duckweed (*Lemna* spp.), tule (*Scirpus* spp.), sedge (*Carex* spp.), rush (*Juncus* spp.) and pondweed (*Potamogeton* spp.).

Great Valley Cottonwood Riparian Forest

Great Valley cottonwood riparian forests are characterized by a dense, broad-leaved, winter-deciduous riparian trees dominated by Fremont cottonwood and Gooding's willow (*Salix gooddingii variabilis*). The understory is usually dense, consisting of sapling Fremont cottonwood and Gooding's willow. California wild grape (*Vitis californica*), buttonbush (*Cephalanthus occidentalis*), wild ryegrass (*Elymus triticoides*), sandbar willow (*Salix hindsiana*), red willow (*S. laevigata*), yellow willow (*S. lasiandra*), and red willow (*S. lasiolepis*) are also commonly present. Shade-tolerant species such as boxelder (*Acer negundo californica*) or Oregon ash (*Fraxinus latifolia*) may also occur, but frequent flooding prevents these species from reaching the canopy. Great Valley cottonwood riparian forests occur on fine-grained alluvial soils near perennial or nearly perennial streams.

Great Valley Mesquite Scrub

Great Valley mesquite scrub is characterized as an open woodland or savanna dominated by honey mesquite (*Prosopis glandulosa torreyana*) and allscale (*Atriplex polycarpa*). The understory is grassy and usually dominated by non-native annual species such as red brome (*Bromus rubens*). Great Valley mesquite scrub occurs on sandy loam soils of alluvial origin in areas with a high water table as a result of Sierran snowmelt.

Special Status Species

Special-status species are generally defined as: (1) species listed as a candidate, threatened, or endangered under the federal or state Endangered Species Act; (2) species considered rare or endangered under the California Environmental Quality Act; (3) plants considered "Rare, Threatened, or Endangered in California" by the California Native Plant Society (Lists 1B and 2); (4) animal listed as "species of special concern" by the state; and (5) animals fully protected in California by the Fish and Game Code.

The following discussion is based on a background search of special-status species that are documented in the CNDDB, the California Native Plant Society's (CNPS) Inventory of Rare and Endangered Plants, and the US Fish and Wildlife Service's (USFWS) Endangered and Threatened species list. The background search was regional in scope and focused on the documented occurrences within the boundaries of Tulare County.

The search revealed 248 special status species within the region: 175 plants and 73 wildlife.[25] [26] [27] **Table 2, Special Status Animal Species Known to Occur or with Potential to Occur within Tulare County**. In addition to these special-status species, the search revealed 10 sensitive natural communities (see **Table 3). Table 3, Special Status Plant Species Known to Occur or with Potential to Occur within Tulare Count**y.

Table 2
Special Status Animal Species Known to Occur or with Potential to Occur within Tulare County

Scientific Name Common Name	Status Fed/State ESA Global Rank/State Rank CDFW	Habitat Requirements
	Amphibians	
Ambystoma californiense California tiger salamander – Central Valley DPS	FT/ST G2G3/S2S3 SSC	Vernal and seasonal pools and associated grasslands, oak savanna, woodland, and coastal scrub. Needs underground refuges (i.e., small mammal burrows, pipes) in upland areas such as grassland and scrub habitats.
Bufo canarus Yosemite toad	FC/-- G2/S2 SSC	Occurs in the vicinity of wet meadows in central high Sierra, 6,400 to 11,300 feet in elevation. Inhabits primarily montane wet meadows; also in seasonal ponds associated with lodgepole pine and subalpine conifer forest.

[25] California Natural Diversity Database (CNDDB). 2018. *Biogeographic Information and Observation System (BIOS).*

[26] California Native Plant Society (NPS). 2018. *Inventory of Rare and Endangered Plants.*

[27] USFWS. 2018. *Endangered and Threatened Species Search*

Scientific Name Common Name	Status Fed/State ESA Global Rank/State Rank CDFW	Habitat Requirements
Batrachoseps regius Kings River slender salamander	--/-- G1/S1 --	Occurs in mixed chaparral with buckeye, laurel, canyon and blue oak, ponderosa and lowland pine. Can be found under rocks in areas of talus.
Batrachoseps robustus Kern Plateau salamander	--/-- G2/S2 --	Occurs only in the semiarid Kern Plateau and Scodie Mountains. Frequents Jeffrey pine/red fir, lodgepole pine and riparian scrub. Found under rocks, bark fragments, logs and within and under wet logs, especially in spring and seep areas.
Batrachoseps simatus Kern Canyon slender salamander	--/ST G2/S2 --	Occurs only in the lower Kern River Canyon in valley-foothill hardwood, valley-foothill hardwood-conifer, and mixed chaparral. Found under downed pine, oak and chaparral scrub logs, as well as under rocks and talus on steep, north-facing slopes.
Hydromantes platycephalus Mount Lyell salamander	--/-- G3/S3 SSC	Occurs in areas with massive rock within mixed conifer, red fir, lodgepole pine, and subalpine habitats from 4,000 to 11,600 feet in elevation. Active on the surface only when free water is available, in the form of seeps, drips, or spray.
Lithobates pipiens Northern leopard frog	--/-- G5/S2 SSC	Native range is east of Sierra Nevada-Cascade Crest. Occurs near permanent or semi-permanent water in a variety of habitats. This species is highly aquatic. Shoreline cover, submerged and emergent aquatic vegetation are important habitat characteristics.
Rana muscosa Sierra Madre yellow-legged frog	FE/CE G1/S1 SSC	Federal listing refers to populations in the San Gabriel, San Jacinto and San Bernardino Mountains only. Always encountered within a few feet of water. Tadpoles may require 2 - 4 years to complete their aquatic development.
Rana boylii Foothill yellow-legged frog	--/-- G3/S2S3 SSC	Partly-shaded, shallow streams and riffles with a rocky substrate in a variety of habitats. Need at least some cobble-sized substrate for egg-laying. Needs at least 15 weeks to attain metamorphosis.
Rana draytonii California red-legged frog	FT/-- G4T2T3/S2S3 SSC	Semi-permanent or permanent water at least 2 feet deep, bordered by emergent or riparian vegetation, and upland grassland, forest or scrub habitats for refugia and dispersal.
Spea hammondii Western spadefoot toad	--/-- G3/S3 SSC	Open areas with sandy or gravelly soils, including mixed woodlands, grasslands, coastal sage scrub, chaparral, sandy washes, lowlands, river floodplains, alluvial fans, playas, alkali flats, foothills, and mountains. Rain pools that do not support bullfrogs, fish, or crayfish are required for breeding.
	Birds	
Agelaius tricolor Tricolored blackbird	--/-- G2G3/S2 SSC	Requires open water, protected nesting substrate, and foraging area with insect prey within a few miles of the colony.
Aquila chrysaetos Golden eagle	--/-- G5/S3 FP	Rolling foothills, mountain areas, sage-juniper flats, and desert. Cliff-walled canyons provide nesting habitat in most parts of range; also, large trees in open areas.
Ardea herodias Great blue heron	--/-- G5/S4 --	Colonial nester in tall trees, cliff sides, and sequestered spots on marshes. Rookery sites in close proximity to foraging areas (marshes, lake margins, tide-flats, rivers and streams, and wet meadows).
Athene cunicularia Burrowing owl	--/-- G4/S2 SSC	Burrow sites in open dry annual or perennial grasslands, deserts and scrublands characterized by low growing vegetation. Also inhabits anthropogenic habitats such as campuses, golf courses, cemeteries, airports, and grazed pastures.

Scientific Name Common Name	Status Fed/State ESA Global Rank/State Rank CDFW	Habitat Requirements
Buteo swainsoni Swainson's hawk	--/ST G5/S2 --	Breeds in grasslands with scattered trees, juniper-sage flats, riparian areas, savannahs, & agricultural or ranch lands. Requires adjacent suitable foraging areas such as grasslands, or alfalfa or grain fields that support rodent populations.
Charadrius montanus Mountain plover	--/-- G2/S2? SSC	Short grasslands, freshly plowed fields, newly sprouting grain fields, and sometimes sod farms. Prefers grazed areas & areas with burrowing rodents.
Lanius ludovicianus Loggerhead shrike	--/-- G4/S4 SSC	Broken woodlands, savannah, pinyon-juniper, joshua tree woodlands, riparian woodlands, desert oases, scrub and washes. Prefers open country for hunting, with perches for scanning, and fairly dense shrubs and brush for nesting.
Vireo bellii pusillus Least Bell's vireo	FE/SE G5T2/S2 --	Low dense brushy riparian vegetation in vicinity of water or in dry river bottoms; below 2000 feet.
Accipiter cooperii Cooper's hawk	--/-- G5/S3 WL	Occurs in mainly open, interrupted or marginal type woodlands. Nests mainly in riparian growths of deciduous trees, such as canyon bottoms and river flood plains.
Accipiter gentilis northern goshawk	--/-- G5/S3 SSC	Occurs within, and in vicinity of, coniferous forest. Uses old nests, and maintains alternate sites. Usually nests on north slopes, near water. Typical nest trees include red fir, lodge pole pine, Jeffrey pine, and aspens are typical nest trees.
Charadrius alexandrinus nivosus western snowy plover	FT/-- G4T3/S2 SSC	Sandy beaches, salt pond levees or shores of large alkali lakes. Sandy, gravelly or friable soils required for nesting.
Cypseloides niger black swift	--/-- G4/S2 SSC	Occurs in the coastal belt of Santa Cruz and Monterey counties; central and southern Sierra Nevada; San Bernardino and San Jacinto Mountains. Breeds in small colonies on cliffs behind or adjacent to waterfalls in deep canyons and sea-bluffs above the surf.
Dendragapus fuliginosus howardi Mount Pinos sooty grouse	--/-- G5T1T2/S1S2 SSC	Inhabitant of southern Sierra Nevada Mountains, in small populations. Mainly inhabits white fir covered slopes and can also be found in other conifer types and open, brushy areas adjacent to forest.
Empidonax traillii Southwestern willow flycatcher	FE/SE G5T1T2/S1 --	Requires dense riparian habitats associated with rivers, swamps, and lakes. Wintering habitat is not well known, but is considered to be brushy savannah edges, second growth, shrubby clearings and pastures, and woodlands near water.
Gymnogyps californianus California condor	FE/SE G1/S1 FP	Forages in open foothill grasslands and oak savannahs. Roosts in large trees, dead snags, and on large cliffs. Breeds in remote mountainous areas of pine forest or chaparral with cliffs and large rock outcrops and caves.
Strix nebulosa great gray owl	--/SE G5/S1 --	Resident of mixed conifer or red fir forest habitat, in or on edge of meadows. Requires large diameter snags in a forest with high canopy closure and a cool sub-canopy microclimate.
	Fish	
Oncorhynchus mykiss aguabonita Volcano Creek golden trout	--/-- G5T1/S1 SSC	Native to Kern Plateau in wide, shallow & exposed streams with little riparian vegetation. This species has also been transplanted to other waters. Occurs in streams with bottoms of sand, gravel and some cobble. Water is clear and usually cold, but summer temps can vary from 3 to 22C.

Scientific Name Common Name	Status Fed/State ESA Global Rank/State Rank CDFW	Habitat Requirements
Oncorhynchus aguabonita whitei Little Kern golden trout	FT/-- G5T2/S2 --	Native to the Little Kern River in Tulare County. Found in clear, cold mountain streams and lakes at 5,000 to 9,000 feet. Needs well-oxygenated, gravel-bottomed shallows for spawning.
		Invertebrates
Branchinecta conservatio Conservancy fairy shrimp	FE/-- G1/S1 --	Endemic to the grasslands of the northern two-thirds of the Central Valley; found in large, turbid pools. Inhabits astatic pools located in swales formed by old, braided alluvium; filled by winter/spring rains, last until June.
Branchinecta lynchi Vernal pool fairy shrimp	FT/-- G3/S2S3 --	Endemic to the grasslands of the Central Valley, central Coast Mountains, and South Coast Mountains. Inhabits, small clear-water sandstone-depression pools and grassed swale, earth slump, or basalt-flow depression pools.
Desmocerus californicus dimorphus Valley elderberry longhorn beetle	FT/-- G3T2/S2 --	Occurs only in the Central Valley of California, in association with blue elderberry (Sambucus mexicana). Prefers to lay eggs in elderberry 2-8 inches in diameter; some preference shown for "stressed" elderberries.
Lepidurus packardi Vernal pool tadpole shrimp	FE/-- G3/S2S3 --	Inhabits vernal pools and swales in the Sacramento Valley containing clear to highly turbid water. Inhabits pools commonly found in grass bottomed swales of unplowed grasslands. Some pools are mud-bottomed and highly turbid.
Andrena macswaini An andrenid bee	--/-- G1G3/S1S3 --	This bee is oligolectic on morning-opening, yellow-flowered spp. of Camissonia. Nests in deep, sandy soil; the only species in the subgenus Diandrena with aggregated nests associated with depressions.
Bowmanasellus sequoia Sequoia cave isopod	--/-- G1/S1 --	This species is troglophilic. Often is collected in caves, and also near outlet of big springs by overturning rocks.
Calicina cloughensis Clough Cave harvestman	--/-- G1/S1 --	Known only from the type locality, Clough Cave.
Chrysis tularensis Tulare cuckoo wasp	--/-- G1G2/S1S2 --	Various open habitats. Presence of adult nectar sources and adequate populations of larval host are critical.
Cicindela tranquebarica ssp. San Joaquin tiger beetle	--/-- G5T1/S1 --	Known only from Tulare and Kings Counties.
Cryptochia denningi Denning's cryptic caddisfly	--/-- G1G2/S1S2 --	Larvae found in small, cool streams.
Helminthoglypta callistoderma Kern shoulderband	--/-- G1/S1 --	Known only from Tulare and Kern Counties, along the lower Kern River Canyon. Has been collected from dead vegetation along the water's edge.
Lytta hoppingi Hopping's blister beetle	--/-- G1G2/S1S2 --	Inhabits the foothills at the southern end of the Central Valley.
Lytta molesta molestan blister beetle	--/-- G2/S2 --	Inhabits the Central Valley of California, from Contra Costa to Kern and Tulare Counties.

Scientific Name Common Name	Status Fed/State ESA Global Rank/State Rank CDFW	Habitat Requirements
Lytta morrisoni Morrison's blister beetle	--/-- G1G2/S1S2 --	Inhabitant of the southern Central Valley of California.
Margaritifera falcate western pearlshell	--/-- G4/S2S3 --	Inhabits aquatic habitats. Prefers lower velocity waters.
Talanites moodyae Moody's gnaphosid spider	--/-- G1G2/S1S2 --	Serpentine endemic.
	Mammals	
Antrozous pallidus Pallid bat	--/-- G5/S3 SSC	Deserts, grasslands, shrublands, woodlands, and forest. Most common in open, dry, habitats with rocky area for roosting. Roost must protect bats from high temperatures. Very sensitive to disturbance of roosting sites.
Dipodomys nitratoides exilis Fresno kangaroo rat	FE/SE G3T1/S1 --	Occurs in alkali sink-open grassland habitats in western Fresno County. Inhabits bare alkaline clay-based soils subject to seasonal inundation, with more friable soil mounds around shrubs & grasses.
Dipodomys ingens Giant kangaroo rat	FE/SE G2/S2 --	Occurs in annual grasslands on the western side of the San Joaquin Valley, marginal habitat in alkali scrub. Needs level terrain & sandy loam soils for burrowing.
Eumops perotis californicus Western mastiff bat	--/-- G5T4/S3? SSC	Occurs in open semi-arid to arid habitats such as coniferous and deciduous woodlands, coastal scrub and chaparral. Roosting sites are usually crevices in cliff faces, high buildings, trees and tunnels.
Lasiurus cinereus Hoary bat	--/-- G5/S4 --	Roosts in dense foliage of large trees. Requires water. Prefers open habitats or habitat mosaics with access to trees for cover and open areas of habitat edge for feeding.
Myotis yumanensis Yuma myotis	--/-- G5/S4 --	Optimal habitats are open forests and woodlands with sources of water to forage over. Maternity colonies are located in caves, mines, buildings or crevices.
Perognathus inornatus inornatus San Joaquin pocket mouse	--/-- G4T2T3/S2S3 --	Typically found in grasslands and blue oak savannas. Needs friable soils for burrowing.
Taxidea taxus American badger	--/-- G4/S4 SSC	Most abundant in drier open stages of most shrub, forest, and herbaceous habitats with friable soils. Needs sufficient food, friable soils, and open uncultivated ground. Cannot live in frequently plowed fields. Preys on burrowing rodents.
Vulpes macrotis mutica San Joaquin kit fox	FE/ST G4T2T3/S2S3 --	Occurs in annual grasslands or open stages with scattered shrubby vegetation. Requires loose sandy textured soils for burrowing.
Ammospermophilus nelson Nelson's antelope squirrel	--/ST G2/S2 --	Inhabits the western San Joaquin Valley from 200-1,200 feet elevation. Occurs on dry, sparsely vegetated loam soils. This species dig burrows or use kangaroo rat burrows. Needs widely scattered shrubs, forbs and grasses in broken terrain with gullies and washes.

Scientific Name Common Name	Status Fed/State ESA Global Rank/State Rank CDFW	Habitat Requirements
Chaetodipus californicus femoralis Dulzura pocket mouse	--/-- G5T3/S2? SSC	Occurs in a variety of habitats including coastal scrub, chaparral and grassland. Attracted to grass-chaparral edges.
Dipodomys nitratoides nitratoides Tipton kangaroo rat	FE/SE G3T1/S1 --	Occurs in saltbush scrub and sink scrub communities in the Tulare Lake Basin of the southern San Joaquin Valley. Needs soft friable soils in which to escape seasonal flooding. Digs burrows in elevated soil mounds at bases of shrubs.
Euderma maculatum spotted bat	--/-- G4/S2S3 SSC	Occupies a wide variety of habitats from arid deserts and grasslands through mixed conifer forests. Feeds over water and along washes on almost entirely moths. Needs rock crevices in cliffs or caves for roosting.
Gulo gulo California wolverine	FC/ST G4/S1 FP	Found in the North Coast Mountains and the Sierra Nevada. Occurs in a wide variety of high elevation habitats in the vicinity of water sources. Uses caves, logs, burrows for cover and den areas. Forages in more open areas and can travel long distances.
Martes americana sierra Sierra marten	--/-- G5T3T4/S3S4 --	Occurs in mixed evergreen forests with more than 40% crown closure along Sierra Nevada and Cascade Mountains. Needs a variety of different aged stands, particularly old-growth conifers and snags which provide cavities for dens/nests.
Martes pennanti fisher - West Coast DPS	FC/-- G5/S2S3 SSC	Requires intermediate to large-tree stages of coniferous forests and deciduous-riparian areas with high percent canopy closure. Uses cavities, snags, logs and rocky areas for cover and denning. Needs large areas of mature, dense forest.
Myotis ciliolabrum western small-footed myotis	--/-- G5/S2S3 --	Occurs in a wide range of habitats mostly arid wooded and brushy uplands near water. Seeks cover in caves, buildings, mines and crevices. Prefers open stands in forests and woodlands. Requires areas with readily accessible drinking water. Feeds on a wide variety of small flying insects.
Myotis evotis long-eared myotis	--/-- G5/S4? --	Found in all brush, woodland and forest habitats from sea level to about 9,000 feet. Prefers coniferous woodlands and forests. Nursery colonies can be located in buildings, crevices, spaces under bark, and snags. Utilizes caves primarily as night roosts.
Myotis thysanodes fringed myotis	--/-- G4G5/S4 --	Occurs in a wide variety of habitats. Optimal habitats are pinyon-juniper, valley foothill hardwood and hardwood-conifer. Uses caves, mines, buildings or crevices for maternity colonies and roosts.
Myotis volans long-legged myotis	--/-- G5/S4? --	Most common in woodland and forest habitats above 4,000 feet. Trees are important day roosts while caves and mines are night roosts. Nursery colonies are usually located under bark or in hollow trees, but occasionally in crevices or buildings.
Ochotona princeps schisticeps gray-headed pika	--/-- G5T2T4/S2S4 --	Occurs in mountainous areas, generally at higher elevations, often above the treeline up to the limit of vegetation. At lower elevations occurs on talus slopes, occasionally on mine tailings. Prefers talus-meadow interfaces.
Ovis canadensis sierra Sierra Nevada bighorn sheep	FE/SE G4T1/S1 FP	Historically found along the east side and crest of the Sierra Nevada, and on the great western divide. Utilizes areas with available water and steep, open terrain free of competition from other grazing ungulates.
Vulpes vulpes necator Sierra Nevada red fox	--/ST G5T3/S1 --	Found from the Cascades down to the Sierra Nevada. Inhabits a variety of habitats from wet meadows to forested areas. Uses dense vegetation and rocky areas for cover and den sites. Prefers forests interspersed with meadows or alpine fell-fields.

Scientific Name Common Name	Status Fed/State ESA Global Rank/State Rank CDFW	Habitat Requirements
	Reptiles	
Emys marmorata Western pond turtle	--/-- G3G4/S3 SSC	Rivers, ponds, freshwater marshes; nests in upland areas (sandy banks or grassy open fields) up to 1,640 feet from water.
Gambelia sila Blunt-nosed leopard lizard	FE/SE G1/S1 FP	Inhabits sparsely vegetated alkali and desert scrub habitats in areas of low topographic relief. Can commonly be found in washes.
Masticophis flagellum ruddocki San Joaquin whipsnake	--/-- G5T2T3/S2? SSC	Occurs in open, dry habitats with little or no tree cover. Found in valley grassland & saltbush scrub in the San Joaquin Valley. Needs mammal burrows for refuge and oviposition sites.
Phrynosoma blainvillii Coast horned lizard	--/-- G4G5/S3S4 SSC	Frequents a wide variety of habitats, most common in lowlands along sandy washes with scattered low bushes. Open areas for sunning, bushes for cover, patches of loose soil for burial and abundant supply of ants and other insects.
Thamnophis gigas Giant garter snake	FT/ST G2G3/S2S3 --	This is the most aquatic of the garter snakes in California. Prefers freshwater marsh and low gradient streams. Has adapted to drainage canals & irrigation ditches.

Source: CNDDB (CDFW, 2018); USFWS ECOS (2018), CDFW Special Animals List (2018).
Notes:
**Vicinity refers to the quads where 2014 RTP-SCS transportation projects are located, as well as adjacent quads.*
FT = Federally Threatened
FC = Federal Candidate Species
FE = Federally Endangered
FS = Federally Sensitive
DL = Delisted
SE = State Endangered
ST = State Threatened
SR = State Rare
SS = State Sensitive
G-Rank/S-Rank = Global Rank and State Rank as per NatureServe and CDFW's CNDDB RareFind3.
SC = CDFW Species of Special Concern
FP = Fully Protected

Table 3
Special Status Plant Species Known to Occur or with Potential to Occur within Tulare County

Scientific Name Common Name	Status Fed/State ESA Global Rank/State Rank CRPR	Habitat Requirements
Abronia alpina	FC/--	Bloom period: July-August. Occurs in granitic gravelly margins within meadows and seeps. Elevations: 7,870-8,858feet.
	G2/S2	
Ramshaw Meadows abronia	1B.1	
Allium abramsii	--/--	Bloom period: May-July. Often occurs in granitic sands within lower and upper montane coniferous forest. Elevations: 2,903-1,006feet.
	G2G3/S2S3	
Abrams' onion	1B.2	
Angelica callii	--/--	Bloom period: June-July. Occurs in mesic areas within cismontane woodland and lower montane coniferous forest. Elevations: 3,608-6,561feet.
	G3/S3.3?	
Call's angelica	4.3	
Antennaria pulchella	--/--	Bloom period: June-September. Occurs in alpine boulder and rock field (stream margins) as well as meadows and seeps. Elevations: 1,986-12,139feet.
	G3/S3.3	
Beautiful pussy-toes	4.3	
Arabis repanda var. greenei	--/--	Bloom period: July-August. Occurs in granitic, talus, rocky or sandy soils within subalpine coniferous forest and upper montane coniferous forest. Elevations: 7,693-11,811feet.
	G5T2T3/S2S3	
Greene's rockcress	4.3	
Asplenium septentrionale	--/--	Bloom period: July-August. Occurs in rocky, granitic soils within chaparral, lower and upper montane coniferous forest as well as subalpine coniferous forest. Elevations: 5,298-10,990feet.
	G4G5/S2.3	
Northern spleenwort	2.3	
Astragalus hornii var. hornii	--/--	Bloom period: May-October. Occurs at lake margins in alkaline soils within meadows and seeps and playas. Elevations: 196-2,788feet.
	G4G5T2T3/S1	
Horn's milk-vetch	1B.1	
Astragalus lentiginosus var. kernensis	--/--	Bloom period: June-July. Occurs in sandy soils within meadows and seeps as well as subalpine coniferous forest. Elevations: 7,349-9,022feet.
	G5T2T3/S2S3	
Kern Plateau milk-vetch	1B.2	
Astragalus shevockii	--/--	Bloom period: June-July. Occurs in granitic, sandy soils within upper montane coniferous forest. Elevations: 6,200-6,446 feet.
	G2/S2.2?	
Shevock's milk-vetch	1B.2	
Astragalus subvestitus	--/--	Bloom period: June-July. Occurs in gravelly or sandy soils within Great Basin scrub, meadows and seeps as well as pinyon and juniper woodland. Elevations: 7,874-9,022feet.
	G3/S3.3	
Kern County milk-vetch	4.3	
Atriplex cordulata var. cordulata	--/--	Bloom period: April- October. Occurs in saline or alkaline soils within chenopod scrub, meadows and seeps as well as valley and foothill grassland. Elevations: 0-1,837feet.
	G3T2/S2.2?	
Heartscale	1B.2	
Atriplex cordulata var. erecticaulis	--/--	Bloom period: August-November. Occurs in valley and foothill grassland. Elevations: 131-328feet.
	G3T2/S2.2	
Earlimart orache	1B.2	

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Atriplex depressa Brittlescale	--/-- G2Q/S2.2 1B.2	Bloom period: April-October. Occurs in alkaline clay soils within chenopod scrub, meadows and seeps, playas, valley and foothill grassland, and vernal pools. Elevations: 3-1,049feet.
Atriplex joaquinana San Joaquin spearscale	--/-- G2/S2 1B.2	Bloom period: April- October. Occurs in alkaline soils within chenopod scrub, meadows and seeps, plays, and valley and foothill grassland. Elevations: 3-2,739feet.
Atriplex minuscula Lesser saltscale	--/-- G2/S2 1B.1	Bloom period: May-October. Occurs in alkaline sandy soils within chenopod scrub, playas and valley and foothill grassland. Elevations: 49-656feet.
Atriplex persistens Vernal pool smallscale	--/-- G2/S2.2 1B.2	Bloom period: June-October. Occurs in vernal pools (alkaline). Elevations: 32-377feet.
Atriplex subtilis Subtle orache	--/-- G2/S2.2 1B.2	Bloom period: June-October. Occurs in valley and foothill grassland. Elevations: 131-328feet.
Azolla microphylla Mexican mosquito fern	--/-- G5/S3.2? 4.2	Bloom period: August. Occurs in marshes and swamps (ponds, slow water). Elevations: 98-328feet.
Boechera bodiensis Bodie Hills rockcress	--/-- G2/S2 1B.3	Bloom period: June-August. Occurs in alpine builder and rock field, great basin scrub, pinyon and juniper woodland, and subalpine coniferous forest. Elevations: 6,840-11,581feet.
Boechera dispar Pinyon rockcress	--/-- G3/S2.3 2.3	Bloom period: March-June. Occurs in granitic and gravelly soils within Joshua tree woodland, Mojavean desert scrub, and pinyon and juniper woodland. Elevations: 3,937-8,333feet.
Boechera evadens Hidden rockcress	--/-- G1G2/S1S2 1B.3	Bloom period: May-August. Occurs in rocky soils within upper montane coniferous forest. Elevations: 8,398-9,350feet.
Boechera pygmaea Tulare County rockcress	--/-- G2/S2 1B.3	Bloom period: June-July. Occurs in volcanic or granitic, gravelly or sandy soils within meadows and seeps (edges) and subalpine coniferous forest. Elevations: 7,595-11,154feet.
Boechera serpenticola Serpentine rockcress	--/-- G1/S1 1B.2	Bloom period: March-June. Occurs in serpentine ridges and talus within lower montane coniferous forest and upper montane coniferous forest. Elevations: 2,591-6,889feet.
Boechera shevockii Shevock's rockcress	--/-- G1/S1 1B.1	Bloom period: June-July. Occurs in granitic, rocky outcrop ledges within upper montane coniferous forest. Elevations: 8,103-8,202feet.
Boechera tularensis Tulare rockcress	--/-- G2/S2 1B.3	Bloom period: June-July. Occurs on rocky slopes within subalpine coniferous forest and upper montane coniferous forest. Elevations: 5,987-10,990feet.
Botrychium ascendens Upswept moonwort	--/-- G2G3/S2 2.3	Bloom period: July-August. Occurs in mesic areas within lower montane coniferous forest as well as meadows and seeps. Elevations: 4,921-8,513feet.

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Botrychium crenulatum Scalloped moonwort	--/-- G3-S2.2 2.2	Bloom period: June-September. Occurs in bogs and fens, lower montane coniferous forest, meadows and sweeps, marshes and swamps (freshwater), and upper montane coniferous forest. Elevations: 4,160-10,761feet.
Botrychium lunaria Common moonwort	--/-- G5/S2? 2.3	Bloom period: August. Occurs in meadows and seeps, subalpine coniferous forest, and upper montane coniferous forest. Elevations: 6,496-11,154feet.
Botrychium minganense Mingan moonwort	--/-- G4/S2 2.2	Bloom period: July-September. Occurs in mesic areas within bogs and fens as well as lower and upper montane coniferous forest. Elevations: 4,773-6,906feet.
Brasenia schreberi Watershield	--/-- G5/S2 2.3	Bloom period: June-September. Occurs in freshwater marshes and swamps. Elevations: 98-7,217feet.
Brodiaea insignis Kaweah brodiaea	--/SE G1/S1 1B.2	Bloom period: April-June. Occurs in granitic or clay soils within cismontane woodland, meadows and seeps as well as valley and foothill grassland. Elevations: 492-4,593feet.
Bruchia bolanderi Bolander's bruchia	--/-- G3/S3? 2.2	Bloom period: None (moss). Occurs in damp soil within lower and upper montane coniferous forest as well as meadows and seeps. Elevations: 5,577-9,186feet.
California macrophylla Round-leaved filaree	--/-- G2/S2 1B.1	Bloom period: March-May. Occurs in clay soils within cismontane woodland as well as valley and foothill grassland. Elevations: 49-3,937feet.
Calochortus striatus Alkali mariposa-lily	--/-- G2/S2 1B.2	Bloom period: April-June. Occurs in alkaline and mesic areas within chaparral, chenopod scrub, Mojavean desert scrub as well as meadows and seeps. Elevations: 229-5,232feet.
Calochortus westonii Shirley Meadows star-tulip	--/-- G2/S2.2 1B.2	Bloom period: May-June. Occurs in granitic soils within broad-leafed upland forest, lower montane coniferous forest as well as meadows and seeps. Elevations: 4,921-6,906feet.
Calyptridium pygmaeum Pygmy pussypaws	--/-- G2/S2 1B.2	Bloom period: June-August. Occurs in sandy or gravelly soils within subalpine coniferous forest and upper montane coniferous forest. Elevations: 6,496-10,203feet.
Calystegia malacophylla var. berryi Berry's morning-glory	--/-- G4G5T3?Q/S3? 3.3	Bloom period: July-August. Occurs in chaparral and lower montane coniferous forest. Elevations: 2,001-8,005feet.
Carex arcta Northern clustered sedge	--/-- G5/S1S2 2.2	Bloom period: June-September. Occurs in bogs and fens as well as North Coast coniferous forest (mesic). Elevations: 196-4,724feet.
Carex buxbaumii Buxbaum's sedge	--/-- G5/S3.2 4.2	Bloom period: March-August. Occurs in bogs and fens, meadows and seeps (mesic) as well as marshes and swamps. Elevations: 9-10,826feet.
Carex congdonii Congdon's sedge	--/-- G3/S3.3 4.3	Bloom period: July-August. Occurs in alpine boulder and rock field as well as subalpine coniferous forest (rocky). Elevations: 8,530-12,795feet.

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Carex incurviformis	--/--	Bloom period: July-August. Occurs in alpine boulder and rock field. Elevations: 12,139-13,320feet.
	G3/S3.3	
Mount Dana sedge	4.3	
Carlquistia muirii	--/--	Bloom period: July-October. Occurs in granitic areas within chaparral (montane), as well as lower and upper montane coniferous forest. Elevations: 3,608-8,202feet.
	G2/S2.3	
Muir's tarplant	1B.3	
Caulanthus californicus	FE/SE	Bloom period: February-May. Occurs in sandy areas within chenopod scrub, pinyon and juniper woodland as well as valley and foothill grassland. Elevations: 200-3,280feet.
	G1/S1	
California jewel-flower	1B.1	
Ceanothus pinetorum	--/--	Bloom period: May-July. Occurs in rocky, granitic soils within lower montane coniferous forest, subalpine coniferous forest and upper montane coniferous forest. Elevations: 5,249-9,005feet.
	G3/S3.3	
Kern ceanothus	4.3	
Chaenactis douglasii var. alpine	--/--	Bloom period: July-September. Occurs in alpine boulder and rock field (granitic). Elevations: 9842-11154feet.
	G5T5/S2.3?	
Alpine dusty maidens	2.3	
Chamaesyce hooveri	FT/--	Bloom period: July-October. Occurs in vernal pools. Elevations: 82-820feet.
	G2/S2	
Hoover's spurge	1B.2	
Cinna bolanderi	--/--	Bloom period: July-September. Occurs at mesic stream sides within meadows and seeps as well as upper montane coniferous forest. Elevations: 5,479-8,005feet.
	G2/S2	
Bolander's woodreed	1B.2	
Clarkia exilis	--/--	Bloom period: April-May. Occurs in cismontane woodland. Elevations: 393-3,280feet.
	G3/S3.3	
Slender clarkia	4.3	
Clarkia springvillensis	FT/SE	Bloom period: May-July. Occurs in granitic areas within chaparral, cismontane woodland as well as valley and foothill grassland. Elevations: 803-4,002feet.
	G2/S2	
Springville clarkia	1B.2	
Clarkia xantiana ssp. parviflora	--/--	Bloom period: May-June. Often occurs in sandy, but sometimes rocky soils. Can also occur on slopes and roadsides. Inhabits chaparral, cismontane woodland, Great Basin scrub, as well as valley and foothill grassland. Elevations: 2,296-11,876feet.
	G4T3/S3	
Kern Canyon clarkia	4.2	
Claytonia palustris	--/--	Bloom period: May-October. Occurs in meadows and seeps (mesic), marshes and swamps as well as upper montane coniferous forest. Elevations: 3,280-8,202feet.
	G3/S3.3	
Marsh claytonia	4.3	
Claytonia parviflora ssp. grandiflora	--/--	Bloom period: February-May. Occurs in rocky soils within cismontane woodland. Elevations: 820-3,937feet.
	G5T3/S3.2	
Streambank spring beauty	4.2	
Cordylanthus eremicus ssp. kernensis	--/--	Bloom period: May-September. Occurs within Great Basin scrub, Joshua tree woodland, pinyon and juniper woodland, upper montane coniferous forest. Elevations: 5,495-9,842feet.
	G3?T2/S2.3	
Kern Plateau bird's-beak	1B.3	

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Cordylanthus rigidus ssp. brevibracteatus Short-bracted bird's-beak	--/-- G5T3/S3.3 4.3	Bloom period: July-October. Occurs in granitic soils in openings within chaparral, lower montane coniferous forest, pinyon and juniper woodland, and upper montane coniferous forest. Elevations: 2,001-8,497feet.
Cryptantha circumscissa var. rosulata Rosette cushion cryptantha	--/-- G5T2/S2 1B.2	Bloom period: July-August. Occurs in coarse gravelly, granitic soils within alpine boulder and rock fields as well as subalpine coniferous forest. Elevations: 9,678-12,007feet.
Cryptantha glomeriflora Clustered-flower cryptantha	--/-- G3Q/S3.3 4.3	Bloom period: June-September. Occurs in granitic or volcanic sandy soils within Great Basin scrub, meadows and seeps, subalpine coniferous forest, and upper montane coniferous forest. Elevations: 5,905-12,303feet.
Cryptantha incana Tulare cryptantha	--/-- G1/S1 1B.3	Bloom period: June-August. Occurs in lower montane coniferous forest (gravelly or rocky). Elevations: 4,691-7,053feet.
Cuscuta jepsonii Jepson's dodder	--/-- GH/SH 1B.2	Bloom period: July-September. Occurs on steam banks within North Coast coniferous forest. Elevations: 3,937-7,545feet.
Delphinium hansenii ssp. ewanianum Ewan's larkspur	--/-- G4T3/S3.2 4.2	Bloom period: March-May. Occurs in rocky soils within cismontane woodland and valley and foothill grassland. Elevations: 196-1,968feet.
Delphinium inopinum Unexpected larkspur	--/-- G3/S3.3 4.3	Bloom period: May-July. Occurs in upper montane coniferous forest (rocky, metamorphic). Elevations: 6,200-9,186feet.
Delphinium purpusii Rose-flowered larkspur	--/-- G2/S2 1B.3	Bloom period: April-May. Occurs in rocky, often carbonite soils within chaparral, cismontane woodland as well as pinyon and juniper woodland. Elevations: 984-4,396feet.
Delphinium recurvatum Recurved larkspur	--/-- G3/S3 1B.2	Bloom period: March-June. Occurs in alkaline soils within chenopod scrub, cismontane woodland, as well as valley and foothill grassland. Elevations: 9-2,591feet.
Dicentra nevadensis Tulare County bleeding heart	--/-- G3/S3.3 4.3	Bloom period: June-October. Occurs in alpine boulder and rock field within subalpine coniferous forest (gravelly or sandy, openings). Elevations: 7,217-10,006feet.
Didymodon norrisii Norris' beard moss	--/-- G3G4/S3S4 2.2	Bloom period: None (moss). Occurs in intermittently mesic rock within cismontane woodland and lower montane coniferous forest. Elevations: 1,968-6,473feet.
Draba cruciata Mineral King draba	--/-- G2/S2.3 1B.3	Bloom period: June-August. Occurs in subalpine coniferous forest (gravelly). Elevations: 8,202-10,875feet.
Draba sharsmithii Mt. Whitney draba	--/-- G2/S2 1B.3	Bloom period: July-August. Occurs in alpine boulder and rock field as well as subalpine coniferous forest. Elevations: 10,826-12,992feet.
Dudleya abramsii ssp. calcicola Limestone dudleya	--/-- G3T3/S3.3 4.3	Bloom period: April-August. Occurs in carbonate soils within chaparral and pinyon and juniper woodland. Elevations: 1,640-8,530feet.

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Dudleya cymosa ssp. costatifolia Pierpoint Springs dudleya	--/-- G2T2/S2.1 1B.2	Bloom period: May-July. Occurs in carbonate soils within chaparral and cismontane woodland. Elevations: 4,708-5,249feet.
Eremalche kernensis Kern mallow	FE/-- G3?T2Q/S2 1B.1	Bloom period: March-May. Occurs in chenopod scrub and valley and foothill grassland. Elevations: 229-4,232feet.
Eriastrum sparsiflorum Few-flowered eriastrum	--/-- G3G4/S3? 4.3	Bloom period: May-September. Occurs in granitic, sandy, usually in openings within chaparral, cismontane woodland, great basin scrub, Joshua tree, woodland, Mojavean desert scrub, as well as pinyon and juniper woodland. Elevations: 3,526-5,610feet.
Eriastrum tracyi Tracy's eriastrum	--/SR G3Q/S3 3.2	Bloom period: May-July. Occurs in chaparral and cismontane woodland. Elevations: 1,033-5,396feet.
Ericameria gilmanii Gilman's goldenbush	--/-- G1/S1 1B.3	Bloom period: August-September. Occurs in carbonate or granitic, rocky soils within subalpine coniferous forest and upper montane coniferous forest. Elevations: 6,889-11,154feet.
Erigeron aequifolius Hall's daisy	--/-- G2/S2.3 1B.3	Bloom period: June-August. Occurs in rocky, granitic soils within broad-leafed upland forest, lower and upper montane coniferous forest as well as pinyon and juniper woodland. Elevations: 4,921-8,005feet.
Erigeron inornatus var. keilii Keil's daisy	--/-- G5T1/S1 1B.3	Bloom period: June-September. Occurs in lower montane coniferous forest as well as meadows and seeps. Elevations: 5,905-7,217feet.
Erigeron multiceps Kern River daisy	--/-- G2/S2.2 1B.2	Bloom period: June to September. Occurs in meadows and seeps as well as upper montane coniferous forest (openings). Elevations: 4,921-8,202feet
Eriogonum breedlovei var. shevockii The Needles buckwheat	--/-- G3T3/S3.3 4.3	Bloom period: July-September. Occurs in granitic, rocky soils within pinyon and juniper woodland as well as upper montane coniferous forest. Elevations: 5,298-8,448feet.
Eriogonum nudum var. murinum Mouse buckwheat	--/-- G5T5/S2.2 1B.2	Bloom period: June-November. Occurs in sandy soils within chaparral, cismontane woodland as well as valley and foothill grassland. Elevations: 1,197-3,707feet.
Eriogonum spergulinum var. pretense Mountain meadow wild buckwheat	--/-- G4T3/S3 4.3	Bloom period: July-August. Occurs in sandy or gravelly soils often on edges of Alpine boulder and rock field (meadows and creeks), as well as meadows and seeps. Elevations: ,6003-11,302feet.
Eriogonum twisselmannii Twisselmann's buckwheat	--/SR G2/S2.2 1B.2	Bloom period: July-September. Occurs in upper montane coniferous forest (granitic). Elevations: 7,791-9,202feet.
Eriogonum wrightii var. olanchense Olancha Peak buckwheat	--/-- G5T2/S2 1B.3	Bloom period: July-September. Occurs in alpine boulder and rock field as well as subalpine coniferous forest (gravelly or rocky). Elevations: 10,695-11,597feet.

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Eriophyllum lanatum var. obovatum	--/-- G5T3/S3.3 4.3	Bloom period: June-July. Occurs in sandy loam within lower montane coniferous forest and upper montane coniferous forest. Elevations: 3,654-8,202feet.
Southern Sierra woolly sunflower		
Eryngium spinosepalum	--/-- G2/S2.2 1B.2	Bloom period: April-May. Occurs in valley and foothill grassland as well as in vernal pools. Elevations: 262-836feet.
Spiny-sepaled button-celery		
Erythronium pusaterii	--/-- G3/S3 1B.3	Bloom period: May-July. Occurs in granitic or metamorphic areas within meadows and seeps as well as subalpine coniferous forest. Elevations: 6,889-9,104feet.
Kaweah fawn lily		
Fritillaria brandegeei	--/-- G2/S2.3 1B.3	Bloom period: April-June. Occurs in lower montane coniferous forest (granitic). Elevations: 4,642-6,889feet.
Greenhorn fritillary		
Fritillaria pinetorum	--/-- G4/S3.3 4.3	Bloom period: May-September. Occurs in granitic or metamorphic soils within chaparral, lower montane coniferous forest, pinyon and juniper woodland, subalpine coniferous forest, and upper montane coniferous forest. Elevations: 5,692-10,826feet.
Pine fritillary		
Fritillaria striata	--/ST G2/S2 1B.1	Bloom period: February-April. Usually occurs in clay soils within cismontane woodland as well as valley and foothill grassland. Elevations: 442-4,773feet.
Striped adobe-lily		
Galium angustifolium ssp. onycense	--/-- G5T2/S2.3 1B.3	Bloom period: April-July. Occurs in granitic, rocky areas within cismontane woodland as well as pinyon and juniper woodland. Elevations: 2,821-7,545feet.
Onyx Peak bedstraw		
Gilia interior	--/-- G3/S3.3 4.3	Bloom period: March-May. Occurs in rocky soils within cismontane woodland, Joshua tree woodland and lower montane coniferous forest. Elevations: 2,296-5,577feet.
Inland gilia		
Githopsis tenella	--/-- G2/S2.3 1B.3	Bloom period: May-June. Occurs in mesic areas within chaparral and cismontane woodland. Elevations: 3,608-6,233feet.
Delicate bluecup		
Glyceria grandis	--/-- G5/S2 2.3	Bloom period: June-August. Occurs in bogs and fens, meadows and seeps, as well as marshes and swamps (stream banks and lake margins). Elevations: 49-6,496feet.
American manna grass		
Goodmania luteola	--/-- G3/S3.2 4.2	Bloom period: April-August. Occurs in alkaline or clay soils within Mojavean desert scrub, meadows and seeps, playas, as well as valley and foothill grassland. Elevations: 65-7,217feet.
Golden goodmania		
Hackelia sharsmithii	--/-- G2G3/S2S3 2.3	Bloom period: July-September. Occurs in alpine boulder and rock fields as well as subalpine coniferous forest. Elevations: 9,842-12,139feet.
Sharsmith's stickseed		
Hesperocyparis nevadensis	--/-- G2/S2.2 1B.2	Bloom period: None (cypress). Occurs in closed-cone coniferous forest, chaparral, cismontane woodland, as well as pinyon and juniper woodland. Elevations: 2,362-6,003feet.
Piute cypress		
Horkelia tularensis	--/-- G2/S2 1B.3	Bloom period: June-August. Occurs in upper montane coniferous forest (rocky). Elevations: 7,545-2,432feet.
Kern Plateau horkelia		

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Hosackia oblongifolia var. cuprea	--/-- G5T2/S2.3 1B.3	Bloom period: June-August. Occurs in mesic areas within meadows and seeps (edges) and upper montane coniferous forest. Elevations: 7,874-9,022feet.
Copper-flowered bird's-foot trefoil		
Hulsea brevifolia	--/-- G3/S3 1B.2	Bloom period: May-August. Occurs in granitic or volcanic soils that are gravelly or sandy within lower and upper montane coniferous forest. Elevations: 4,921-10,498feet.
Short-leaved hulsea		
Hulsea vestita ssp. pygmaea	--/-- G5T2/S2.3 1B.3	Bloom period: June-October. Occurs in granitic, gravelly soils within alpine boulder and rock fields as well as subalpine coniferous forest. Elevations: 9,301-12,795feet.
Pygmy hulsea		
Imperata brevifolia	--/-- G2/S2.1 2.1	Bloom period: September-May. Occurs in mesic areas within chaparral, coastal scrub, Mojavean scrub, meadows and seeps (often alkali), and riparian scrub. Elevations: 0-3,986feet.
California satintail		
Iris munzii	--/-- G2/S2.3 1B.3	Bloom period: March-April. Occurs in cismontane woodland. Elevations: 1,000-2,624feet.
Munz's iris		
Ivesia campestris	--/-- G3/S3 1B.2	Bloom period: June-August. Occurs in meadows and seeps (edges), subalpine coniferous forest, and upper montane coniferous forest. Elevations: 6,479-11,138feet.
Field ivesia		
Jamesia americana var. rosea	--/-- G5T3/S3.3 4.3	Bloom period: May-September. Occurs in granitic or carbonate, rocky soils within alpine boulder and rock field, Great Basin scrub, pinyon and juniper woodland, and subalpine coniferous forest. Elevations: 6,496-12,139feet.
Rosy-petalled cliffbush		
Jensia yosemitana	--/-- G2G3/S2S3 3.2	Bloom period: April-July. Occurs in lower montane coniferous forest as well as meadows and seeps. Elevations: 3,937-7,545feet.
Yosemite tarplant		
Juncus hemiendytus var. abjectus	--/-- G5T4/S3.3 4.3	Bloom period: May-July. Occurs in mesic areas within meadows and seeps and subalpine coniferous forest. Elevations: 4,593-11,154feet.
Center Basin rush		
Juncus nodosus	--/-- G5/S2.3 2.3	Bloom period: July-September. Occurs in meadows and seeps (mesic) as well as marshes and swamps (lake margins). Elevations: 98-6,496feet.
Knotted rush		
Lasthenia ferrisiae	--/-- G3/S3.2 4.2	Bloom period: February-May. Occurs in vernal pools (alkaline, clay). Elevations: 65-2,296feet.
Ferris' goldfields		
Lasthenia glabrata ssp. coulteri	--/-- G4T3/S2.1 1B.1	Bloom period: February-June. Occurs in marshes and swamps (coastal salt), plays, and vernal pools. Elevations: 3-4002feet.
Coulter's goldfields		
Leptosiphon oblanceolatus	--/-- G3/S3.3 4.3	Bloom period: July-August. Occurs in subalpine coniferous forest. Elevations: 9,186-12,139feet.
Sierra Nevada leptosiphon		

Scientific Name Common Name	Status Fed/State ESA Global Rank/State Rank CRPR	Habitat Requirements
Leptosiphon serrulatus Madera leptosiphon	--/-- G1?/S1? 1B.2	Bloom period: April-May. Occurs in cismontane woodland and lower montane coniferous forest. Elevations: 984-4,265feet.
Lewisia disepala Yosemite lewisia	--/-- G2/S2.2 1B.2	Bloom period: March-June. Occurs in granitic, sandy soils within lower and upper montane coniferous forest as well as pinyon and juniper woodland. Elevations: 3,395-11,482feet.
Lupinus lepidus var. culbertsonii Hockett Meadows lupine	--/-- G3?T2/S2 1B.3	Bloom period: July-August. Occurs in meadows and seeps as well as upper montane coniferous forest (mesic, rocky). Elevations: 8,005-9,842feet.
Lupinus padre-crowleyi Father Crowley's lupine	--/SR G2/S2 1B.2	Bloom period: July-August. Occurs in decomposed granitic soils within Great Basin scrub, riparian forest, riparian scrub, and upper montane coniferous forest. Elevations: 7,217-13,123feet.
Meesia triquetra Three-ranked hump moss	--/-- G5/S4 4.2	Bloom period: July. Occurs in bogs and fens, meadows and seeps, subalpine coniferous forest and upper montane coniferous forest (mesic). Elevations: 4,265-9,688feet.
Meesia uliginosa Broad-nerved hump moss	--/-- G4/S2 2.2	Bloom period: October. Occurs in damp soils within bogs and fens, meadows and seeps, subalpine forest, and upper montane coniferous forest. Elevations: 3,969-9,199feet.
Microseris sylvatica Sylvan microseris	--/-- G3/S3.2 4.2	Bloom period: March-June. Occurs in chaparral, cismontane woodland, Great Basin scrub, pinyon and juniper woodland, valley and foothill grassland (serpentinite). Elevations: 147-4,921feet.
Mielichhoferia elongate Elongate copper moss	--/-- G4?/S2 2.2	Bloom period: None (moss). Occurs in cismontane woodland (metamorphic rock that is usually vernally mesic). Elevations: 1,640-4,265feet.
Mimulus acutidens Kings River monkeyflower	--/-- G2?Q/S2? 3	Bloom period: April-July. Occurs in cismontane woodland and lower montane coniferous forest. Elevations: 1,000-4,002feet.
Mimulus grayi Gray's monkeyflower	--/-- G3/S3.3 4.3	Bloom period: May-July. Occurs in mesic areas within lower montane coniferous forest and upper montane coniferous forest. Elevations: 1,804-9,514feet.
Mimulus laciniatus Cut-leaved monkeyflower	--/-- G3/S3.3 4.3	Bloom period: April-July. Occurs in mesic, granitic soils within chaparral, lower montane coniferous forest and upper montane coniferous forest. Elevations: 1,607-8,694feet.
Mimulus norrisii Kaweah monkeyflower	--/-- G2/S2.3 1B.3	Bloom period: March-May. Occurs in carbonate, rocky soils within chaparral and cismontane woodland. Elevations: 1,197-4,265feet.
Mimulus pictus Calico monkeyflower	--/-- G2/S2.2 1B.2	Bloom period: March-May. Occurs in granitic, disturbed areas within broad leafed upland forest and cismontane woodland. Elevations: 328-4,691feet.
Minuartia stricta Bog sandwort	--/-- G5/S2 2.3	Bloom period: July-September. Occurs alpine and boulder rock fields, alpine dwarf scrub, and meadows and seeps. Elevations: 8,005-12,106feet.

Scientific Name Common Name	Status Fed/State ESA Global Rank/State Rank CRPR	Habitat Requirements
Monardella beneolens Sweet-smelling monardella	--/-- G1/S1 1B.3	Bloom period: July-September. Occurs in granitic soils within alpine boulder and rock fields, subalpine coniferous forest and upper montane coniferous forest. Elevations: 8,202-11,482feet.
Monardella candicans Sierra monardella	--/-- G3/S3.3 4.3	Bloom period: April-July. Occurs in sandy or gravelly soils within chaparral, cismontane woodland and lower montane coniferous forest. Elevations: 492-2,624feet.
Monardella linoides ssp. oblonga Tehachapi monardella	--/-- G5T2/S2.2 1B.3	Bloom period: June-August. Occurs in lower montane coniferous forest, pinyon and juniper woodland, and upper montane coniferous forest. Elevations: 2,952-8,103feet.
Monolopia congdonii San Joaquin woollythreads	FE/-- G3/S3 1B.2	Bloom period: February-May. Occurs in chenopod scrub and valley and foothill grassland (sandy). Elevations: 196-2,624feet.
Muilla coronate Crowned muilla	--/-- G3/S3.2? 4.2	Bloom period: March-May. Occurs in chenopod scrub, Joshua tree woodland, Mojavean desert scrub, pinyon and juniper woodland. Elevations: 2,509-6,430feet.
Myosurus minimus ssp. apus Little mousetail	--/-- G5T2Q/S2.2 3.1	Bloom period: March-June. Occurs in valley and foothill grassland and vernal pools (alkaline). Elevations: 65-2,099feet.
Myurella julacea Small mousetail moss	--/-- G5/S1S2 2.3	Bloom period: None (moss). Occurs in damp rock and soil within alpine boulder and rock fields and subalpine coniferous forest. Elevations: 8,858-9,842feet.
Navarretia nigelliformis ssp. nigelliformis Adobe navarretia	--/-- G4T3/S3.2 4.2	Bloom period: April-June. Occurs in clay, sometimes serpentinite soils within valley and foothill grassland (vernally mesic) and sometimes vernal pools. Elevations: 328-3,280feet.
Navarretia setiloba Piute Mountains navarretia	--/-- G2/S2 1B.1	Bloom period: April-July. Occurs in clay or gravelly loam soils within cismontane woodland, pinyon and juniper woodland as well as valley and foothill woodland. Elevations: 935-6,889feet.
Nemacladus calcaratus Chimney Creek nemacladus	--/-- G1/S1 1B.2	Bloom period: May-June. Occurs in granitic flats within pinyon juniper woodland. Elevations: 6,233-6,889feet.
Nemacladus secundiflorus var. secundiflorus Large-flowered nemacladus	--/-- G3T3?/S3? 4.3	Bloom period: April-June. Occurs in gravelly openings within chaparral and valley and foothill grassland. Elevations: 656-6,561feet.
Nemacladus twisselmannii Twisselmann's nemacladus	--/SR G1/S1 1B.2	Bloom period: July. Occurs in upper montane coniferous forest (sandy or rocky, granitic). Elevations: 7,349-8,333feet.
Nemophila parviflora var. quercifolia Oak-leaved nemophila	--/-- G5T3/S3.3 4.3	Bloom period: May-June. Occurs in cismontane woodland and lower montane coniferous forest. Elevations: 2,296-7,217feet.

Scientific Name Common Name	Status Fed/State ESA Global Rank/State Rank CRPR	Habitat Requirements
Orcuttia inaequalis	FT/SE	Bloom period: April-September. Occurs in vernal pools. Elevations: 32-2,477feet.
	G1/S1	
San Joaquin Valley Orcutt grass	1B.1	
Oreonana purpurascens	--/--	Bloom period: May-June. Usually occurs in metamorphic soils within broad-leafed upland forest, subalpine coniferous forest and upper montane coniferous forest. Elevations: 7,857-9,399feet.
	G2/S2	
Purple mountain-parsley	1B.2	
Orthotrichum spjutii	--/--	Bloom period: None (moss). Occurs in granitic, rocky soils within lower and upper montane coniferous forest, as well as pinyon and juniper woodland, and subalpine coniferous forest. Elevations: 6,889-7,874feet.
	G1/S1	
Spjut's bristle moss	1B.3	
Packera indecora	--/--	Bloom period: July-August. Occurs in meadows and seeps (mesic). Elevations: 5,249-6,561feet.
	G5/S1	
Rayless mountain ragwort	2.2	
Perideridia pringlei	--/--	Bloom period: April-July. Occurs in serpentinite, often clay soils within chaparral, cismontane woodland, coastal scrub, and pinyon and juniper woodland. Elevations: 984-5,904feet.
	G3/S3.3	
Adobe yampah	4.3	
Petradoria pumila ssp. pumila	--/--	Bloom period: July-October. Occurs in Pinyon and juniper woodland (rocky, carbonate). Elevations: 3,510-11,154feet.
	G5T4/S3.3	
rock goldenrod	4.3	
Petrophytum caespitosum ssp. acuminatum	--/--	Bloom period: August-September. Occurs in carbonate or granitic, rocky soils within lower and upper montane coniferous forests. Elevations: 3,937-7,545feet.
	G5T2/S2	
Marble rockmat	1B.3	
Phacelia exilis	--/--	Bloom period: May-August. Occurs in sandy or gravelly soils within lower montane coniferous forest, meadows and seeps, pebble (pavement) plain, and upper montane coniferous forest. Elevations: 3,608-8,858feet.
	G3Q/S3.3	
Transverse Range phacelia	4.3	
Phacelia mohavensis	--/--	Bloom period: April-August. Occurs in sandy or gravelly soils within cismontane woodland, lower montane coniferous forest, meadows and seeps, and pinyon and juniper woodland. Elevations: 4,593-8,202feet.
	G3Q/S3.3	
Mojave phacelia	4.3	
Phacelia nashiana	--/--	Bloom period: March-June. Usually occurs in granitic, sandy soils within Joshua tree woodland, Mojavean scrub, and pinyon and juniper woodland. Elevations: 1,968-7,217feet.
	G3/S3	
Charlotte's phacelia	1B.2	
Phacelia novenmillensis	--/--	Bloom period: February-June. Occurs in sandy or gravelly soils within broad-leafed upland forest, cismontane woodland, pinyon and juniper woodland, and upper montane coniferous forest. Elevations: 5,396-8,661feet.
	G3/S3	
Nine Mile Canyon phacelia	1B.2	
Phacelia orogenes	--/--	Bloom period: June-August. Occurs in mesic soils within meadows and seeps, pinyon and juniper woodland and subalpine coniferous forest. Elevations: 7,299-11,154feet.
	G3/S3.3	
Mountain phacelia	4.3	
Phlox dispersa	--/--	Bloom period: July-August. Occurs in Alpine boulder and rock field (granitic). Elevations: 11,811-13,779feet.
	G3/S3.3	
High Sierra phlox	4.3	

Scientific Name Common Name	Status Fed/State ESA Global Rank/State Rank CRPR	Habitat Requirements
Piperia colemanii	--/--	Bloom period: June-August. Occurs often in sandy soils within chaparral and lower montane coniferous forest. Elevations: 3,937-7,545feet.
	G3/S3.3	
Coleman's rein orchid	4.3	
Piperia leptopetala	--/--	Bloom period: May-July. Occurs in cismontane woodland, lower montane coniferous forest, and upper montane coniferous forest. Elevations: 1,246-7,299feet.
	G3/S3.3	
Narrow-petaled rein orchid	4.3	
Piperia michaelii	--/--	Bloom period: April-August. Occurs in coastal bluff scrub, closed-cone coniferous forest, chaparral, cismontane woodland, coastal scrub, lower montane coniferous forest. Elevations: 9-3,001feet.
	G3/S3.2	
Michael's rein orchid	4.2	
Pityopus californica	--/--	Bloom period: March-August. Occurs in mesic areas within broad-leafed upland forest, lower montane coniferous forest, north coast coniferous forest, upper montane coniferous forest. Elevations: 49-7,299feet.
	G4G5/S3.2	
California pinefoot	4.2	
Plagiobothrys torreyi var. perplexans	--/--	Bloom period: April-September. Occurs in burned areas, igneous soils within chaparral, lower montane coniferous forest, meadows and seeps, and upper montane coniferous forest. Elevations: 3,510-9,005feet.
	G4T3/S3	
Chaparral popcornflower	4.3	
Poa lettermanii	--/--	Bloom period: July-August. Occurs in alpine boulder and rock field (sandy or rocky). Elevations: 11,482-13,992feet.
	G4/S3	
Letterman's blue grass	2.3	
Pohlia tundra	--/--	Bloom period: None (moss). Occurs in alpine boulder and rock field (gravelly, damp soils). Elevations: 8,858-9,842feet.
	G2G3/S2S3	
Tundra thread moss	2.3	
Pseudobahia peirsonii	FT/SE	Bloom period: March-April. Occurs in adobe clay within cismontane woodland and valley and foothill woodland. Elevations: 295-2,624feet.
	G1/S1	
San Joaquin adobe sunburst	1B.1	
Ribes menziesii var. ixoderme	--/--	Bloom period: April. Occurs in chaparral and cismontane woodland. Elevations: 2,001-3,805feet.
	G4T2/S2.2	
Aromatic canyon gooseberry	1B.2	
Ribes tularense	--/--	Bloom period: May. Occurs in lower and upper montane coniferous forest. Elevations: 4,921-6,870feet.
	G2/S2.3	
Sequoia gooseberry	1B.3	
Schizymenium shevockii	--/--	Bloom period: None (moss). Occurs in cismontane woodland (metamorphic, rock, mesic). Elevations: 2,460-4,593feet.
	G1/S1	
Shevock's copper moss	1B.2	
Selaginella asprella	--/--	Bloom period: July. Occurs in granitic, rocky soils within cismontane woodland, lower montane coniferous forest, pinyon and juniper woodland, subalpine coniferous forest, and upper montane coniferous forest. Elevations: 5,249-8,858feet.
	G4G5/S3.3	
Bluish spike-moss	4.3	
Sidalcea keckii	FE/--	Bloom period: April-June. Occurs in serpentinite, clay within cismontane woodland as well as valley and foothill grassland. Elevations: 246-2,132feet.
	G1/S1	
Keck's checkerbloom	1B.1	

Scientific Name Common Name	Status Fed/State ESA Global Rank/State Rank CRPR	Habitat Requirements
Sidalcea multifida	--/--	Bloom period: May-September. Occurs in Great Basin scrub, lower montane coniferous forest, meadows and seeps, as well as pinyon and juniper woodland. Elevations: 5,741-9,186feet.
	G3/S2	
Cut-leaf checkerbloom	2.3	
Sidotheca caryophylloides	--/--	Bloom period: July-September. Occurs in lower montane coniferous forest (sandy). Elevations: 3,654-8,530feet.
	G3/S3.3	
Chickweed oxytheca	4.3	
Silene aperta	--/--	Bloom period: July-August. Occurs in lower montane coniferous forest, subalpine coniferous forest, and upper montane coniferous forest. Elevations: 5,905-9,826feet.
	G3/S3.3	
Tulare campion	4.3	
Sphenopholis obtusata	--/--	Bloom period: April-July. Occurs in mesic areas within cismontane woodland, as well as meadows and seeps. Elevations: 984-6,561feet.
	G5/S2.2	
Prairie wedge grass	2.2	
Streptanthus farnsworthianus	--/--	Bloom period: May-June. Occurs in cismontane woodland. Elevations: 1,312-4,593feet.
	G3/S3.3	
Farnsworth's jewel-flower	4.3	
Streptanthus gracilis	--/--	Bloom period: July-August. Occurs in granitic, rocky soils within subalpine coniferous forest and upper montane coniferous forest. Elevations: 9,186-11,482feet.
	G3/S3	
Alpine jewel-flower	1B.3	
Trichodon cylindricus	--/--	Bloom period: None (moss). Occurs on sandy, exposed soils and road banks. Inhabits broad-leafed upland forest, meadows and seeps, as well as upper montane coniferous forest. Elevations: 164-6,568feet.
	G4G5/S2	
Cylindrical trichodon	2.2	
Trichostema ovatum	--/--	Bloom period: July-October. Occurs in chenopod scrub as well as valley and foothill grassland. Elevations: 213-1,049feet.
	G3/S3.2	
San Joaquin bluecurls	4.2	
Trifolium dedeckerae	--/--	Bloom period: May-July. Occurs in granitic and rocky soils within lower montane coniferous forest, pinyon and juniper woodland, subalpine coniferous forest and upper montane coniferous forest. Elevations: 6,889-11,482feet.
	G2/S2.3	
Dedecker's clover	1B.3	
Triglochin palustris	--/--	Bloom period: July-August. Occurs in mesic areas within meadows and seeps and marshes and swamps (freshwater) and subalpine coniferous forest. Elevations: 7496-12139feet.
	G5/S2.3	
Marsh arrow-grass	2.3	
Tuctoria greenei	FE/SR	Bloom period: May-September. Occurs in vernal pools. Elevations: 98-3,510feet.
	G1/S1	
Greene's tuctoria	1B.1	
Utricularia intermedia	--/--	Bloom period: July-August. Occurs in bogs and fens, meadows and seeps (mesic), marshes and swamps (lake margins) as well as vernal pools. Elevations: 3,937-8,858feet.
	G5/S2.2	
Flat-leaved bladderwort	2.2	
Utricularia minor	--/--	Bloom period: July. Occurs in calcium-rich water within bogs and fens as well as marshes and swamps (assorted shallow freshwater). Elevations: 2,624-9,514feet.
	G5/S3.2	
Lesser bladderwort	4.2	
Viola pinetorum var. grisea	--/--	Bloom period: April-July. Occurs in meadows and seeps as well as subalpine coniferous forest and upper montane coniferous forest. Elevations: 4,921-11,154feet.
	G4G5T2T3/S2S3	
Grey-leaved violet	1B.3	

Scientific Name Common Name	Status Fed/State ESA Global Rank/State Rank CRPR	Habitat Requirements
Wyethia elata Hall's wyethia	--/-- G3/S3.3 4.3	Bloom period: May-August. Cismontane woodland and lower montane coniferous forest. Elevations: 3,280-4,593feet.

Source: CNDDB (CDFW, 2018); USFWS ECOS (2018), CDFW Special Plants List (2018), and CNPS Rare Plant Inventory (2018).

Notes:

**Vicinity refers to the quads where 2040 RTP-SCS transportation projects are located, as well as adjacent quads.*

FE = Federally Endangered FT = Federally Threatened DL = Delisted

SE = State Endangered ST = State Threatened SR = State Rare

G-Rank/S-Rank = Global Rank and State Rank as per NatureServe and CDFW's CNDDB RareFind3.

CRPR (California Rare Plant Rank):

1A=Presumed Extinct in California

1B=Rare, Threatened, or Endangered in California and elsewhere

2=Rare, Threatened, or Endangered in California, but more common elsewhere

3=Need more information (a Review List)

4=Plants of Limited Distribution (a Watch List)

CRPR Threat Code Extension:

.1=Seriously endangered in California (over 80% of occurrences threatened / high degree and immediacy of threat)

.2=Fairly endangered in California (20-80% occurrences threatened)

.3=Not very endangered in California (<20% of occurrences threatened)

APPENDIX 4.6
GHG Calculations

TCAG FINAL DRAFT 2018 RTP/SCS Base

2005	Persons/HU	Population	HU	EMP	Regional VMT	SB375 VMT	EMFAC 14 CO2	GHG/per capita lbs/day	Transit Ridership
Final VMP2 Base Year	3.15	404,148	128,388	176,896	10,153,707	8,705,754	3,404	18.57	10,205

	TDM Mode Share					
	DA	SR2	SR3+	Transit	Bike	Walk
	38.61%	26.32%	27.74%	0.75%	1.04%	5.55%

2017	Persons/HU	Population	HU	EMP	Regional VMT	SB375 VMT	EF 14 CO2	GHG/per capita lbs/day	Transit Ridership
Final VMP2 Base Year	3.17	471,842	148,898	176,289	10,547,370	9,153,694	3,586	16.75	13,515

	TDM Mode Share					
	DA	SR2	SR3+	Transit	Bike	Walk
	38.19%	26.52%	27.73%	0.83%	1.08%	5.66%

TCAG FINAL DRAFT 2018 RTP/SCS Scenario Metrics

	Persons/HU	Population	SF	MF	EMP	Regional VMT	SB375 VMT	SB 375 Data ARB SB 375 Target methodology 13% and 16% EF 14 CO2 tons/day	GHG/per capita lbs/day	% GHG/per capita Reduction	% Moving Cooler Reduction	Total % GHG/per capita Reduction	Transit Ridership
2020													
No Project Scenario	3.18	488,293	119,305	34,085	181,560	10,789,716	9,348,211	3,614	16.32	12.1%		12.1%	13,851
Old Plan Scenario Transit Grow	3.18	488,293	118,345	35,044	181,560	10,755,415	9,313,321	3,600	16.25	12.5%		12.5%	18,967
Trend Scenario Transit Maintain	3.18	488,293	119,305	34,085	181,560	10,780,895	9,339,393	3,610	16.30	12.2%	0.06%	12.3%	15,701
Blueprint Scenario Transit Grow	3.18	488,293	118,345	35,044	181,560	10,716,374	9,274,871	3,586	16.19	**12.8%**	0.33%	13.1%	19,621
Blueprint Plus Scenario Transit Grow	3.18	488,293	118,005	35,385	181,560	10,701,905	9,260,388	3,580	16.16	13.0%	0.33%	13.3%	19,654
2035													
No Project Scenario	3.23	568,186	134,689	41,162	207,912	12,159,989	10,515,830	4,017	15.59	16.1%		16.1%	15,308
Old Plan Scenario Transit Grow	3.23	568,186	130,851	44,999	207,912	12,323,325	10,678,457	4,094	15.89	14.4%		14.4%	21,223
Trend Scenario Transit Maintain	3.23	568,186	134,689	41,162	207,912	12,201,803	10,557,662	4,038	15.67	15.6%	0.41%	16.0%	20,285
Blueprint Scenario Transit Grow	3.23	568,186	130,851	44,999	207,912	12,085,473	10,441,330	3,992	15.49	**16.6%**	1.34%	17.9%	24,143
Blueprint Plus Scenario Transit Grow	3.23	568,186	129,490	46,362	207,912	12,052,420	10,408,276	3,980	15.44	16.8%	1.33%	18.2%	24,223
2042													
No Project Scenario	3.25	604,969	141,868	44,464	220,210	12,758,055	11,046,917	4,229	15.41	17.0%		17.0%	16,042
Old Plan Scenario Transit Grow	3.25	604,969	136,688	49,645	220,210	12,897,144	11,185,684	4,304	15.69	15.5%		15.5%	24,359
Trend Scenario Transit Maintain	3.25	604,969	141,868	44,464	220,210	12,848,274	11,137,389	4,275	15.58	16.1%	0.42%	16.5%	21,384
Blueprint Scenario Transit Grow	3.25	604,969	136,688	49,645	220,210	12,699,425	10,988,544	4,219	15.37	**17.2%**	1.38%	18.6%	25,345
Blueprint Plus Scenario Transit Grow	3.25	604,969	134,850	51,484	220,210	12,657,231	10,946,349	4,203	15.32	17.5%	1.38%	18.9%	25,410

	TDM Mode Share					
	DA	SR2	SR3+	Transit	Bike	Walk
	38.13%	26.56%	27.75%	0.83%	1.09%	5.65%
	38.02%	26.46%	27.63%	1.11%	1.09%	5.69%
	38.10%	26.53%	27.71%	0.93%	1.09%	5.65%
	37.78%	26.39%	27.58%	1.16%	1.10%	5.99%
	37.73%	26.39%	27.57%	1.17%	1.10%	6.05%
	38.09%	26.68%	27.78%	0.79%	1.11%	5.55%
	37.81%	26.61%	27.62%	1.17%	1.11%	5.68%
	37.89%	26.61%	27.68%	1.04%	1.11%	5.67%
	37.52%	26.51%	27.54%	1.23%	1.13%	6.06%
	37.44%	26.51%	27.51%	1.25%	1.13%	6.15%
	37.99%	26.74%	27.79%	0.79%	1.12%	5.57%
	37.69%	26.67%	27.62%	1.16%	1.13%	5.72%
	37.79%	26.67%	27.70%	1.03%	1.13%	5.68%
	37.39%	26.59%	27.54%	1.23%	1.15%	6.10%
	37.31%	26.59%	27.51%	1.24%	1.15%	6.20%

Item	Notes	Source
Persons/HU	Persons per housing unit	DOF
Population	Total scenario population	DOF
HU	Total scenario housing units	DOF
SF	Total single family housing units	DOF
MF	Total multi-family housing units	DOF
EMP	Total employment units	DOF
Regional VMT	Total daily VMT including XX trips	TCAG Model
SB 375 VMT	Total daily VMT excluding XX trips	TCAG Model
EF 14 CO2	SB375 daily CO2e metric tons (Annual) excluding XX trips	EMFAC 14
Moving Cooler Reduction	Percent CO2e per capita reductions from 2005 base	Moving Cooler Table 4.2
Total % GHG/per capita Reduction	Percent CO2e per capita reductions from 2005 base	EMFAC 14
Transit Ridership	Total daily regional transit ridership	TCAG Model
TDM Mode Share	Mode Share	TCAG Model
ROG	ROG total daily metric tons (Summer)	EMFAC 14
NOX	NOX total exhaust daily metric tons (Summer)	EMFAC 14
NOX	NOX total exhaust daily metric tons (Winter)	EMFAC 14
PM10	PM10 total daily metric tons (Winter)	EMFAC 14
PM2.5	PM2.5 total daily metric tons (Winter)	EMFAC 14
Heavy Duty PM10	PM10 total daily metric tons (Winter)	EMFAC 14
Heavy Duty PM2.5	PM2.5 total daily metric tons (Winter)	EMFAC 14
Heavy Duty PM10	PM10 total daily metric tons (Annual)	EMFAC 14
Heavy Duty PM2.5	PM2.5 total daily metric tons (Annual)	EMFAC 14
ROG	ROG total daily metric tons (Annual)	EMFAC 14
CO	CO total exhaust metric tons (Annual)	EMFAC 14
NOX	NOX total exhaust daily metric tons (Annual)	EMFAC 14
CO2	CO2e daily metric tons (Annual) including XX trips	EMFAC 14
PM10	PM10 total daily metric tons (Annual)	EMFAC 14
PM2.5	PM2.5 total daily metric tons (Annual)	EMFAC 14
SOx	SOx total exhaust metric tons (Annual)	EMFAC 14
Fuel Gas	Daily regional gasoline consumption thousands of gallons (Annual)	EMFAC 14
Fuel DSL	Daily regional diesel consumption thousands of gallons (Annual)	EMFAC 14
Urban Gross Residential Density	Gross residential density housing units per acre (Urban Areas)	Envision Tomorrow
New Developed Acres Consumed	New Developed Acres Consumed	Envision Tomorrow
Prime Ag Land Acres Consumed	Prime Ag Land Acres Consumed	Envision Tomorrow/FMMP
Critical Habitat Land Acres Consumed	Critical Habitat Land Acres Consumed	Envision Tomorrow/SJV Greenprint
CO2 Emissions per Household	CO2e metric tons per year	Envision Tomorrow
Water Consumption per Household	Water gallons per day	Envision Tomorrow
Energy Use per Household	Energy consumption in millions of BTU per year	Envision Tomorrow

2005	Criteria Pollutants EMFAC 14 Summer ROG	NOX	NOX	Winter PM10	PM2.5	Winter Heavy Duty Trucks PM10	PM2.5	Annual Heavy Duty Trucks PM10	PM2.5	Annual ROG	CO	NOX	CO2	PM10	PM2.5	Annual SOx	Fuel Gas	Fuel DSL
	10.5225	28.6373	31.3572	1.4135	1.0033	0.7900	0.6208	0.7862	0.6208	9.3602	78.4561	30.2704	6511.7246	1.4096	0.9996	0.2303	478.7437	187.7021

2017																		
	3.8978	9.9016	10.7708	0.7412	0.3546	0.1882	0.0656	0.1880	0.0656	3.3710	24.5587	10.4230	6109.0624	0.7410	0.3544	0.0603	437.3555	183.7527

2020	Criteria Pollutants EMFAC 14 Summer ROG	NOX	NOX	Winter PM10	PM2.5	Winter Heavy Duty Trucks PM10	PM2.5	Annual Heavy Duty Trucks PM10	PM2.5	Annual ROG	CO	NOX	CO2	PM10	PM2.5	Annual SOx	Fuel Gas	Fuel DSL
No Project Scenario	2.9319	7.6183	8.2453	0.7081	0.3169	0.1588	0.0317	0.1587	0.0317	2.5221	17.5664	8.0001	5802.7678	0.7080	0.3167	0.0572	400.7168	186.0886
Old Plan Scenario Transit Grow	2.9224	7.5940	8.2190	0.7058	0.3158	0.1583	0.0316	0.1582	0.0316	2.5140	17.5088	7.9746	5783.5497	0.7057	0.3157	0.0570	399.3609	185.4966
Trend Scenario Transit Maintain	2.9293	7.6120	8.2385	0.7075	0.3166	0.1587	0.0317	0.1585	0.0317	2.5199	17.5484	7.9935	5797.3411	0.7074	0.3165	0.0571	400.3161	185.9361
Blueprint Scenario Transit Grow	2.9119	7.5665	8.1893	0.7033	0.3147	0.1577	0.0315	0.1576	0.0315	2.5049	17.4424	7.9458	5763.4671	0.7032	0.3146	0.0568	398.0071	184.8239
Blueprint Plus Scenario Transit Grow	2.9079	7.5563	8.1782	0.7023	0.3143	0.1575	0.0315	0.1574	0.0315	2.5015	17.4179	7.9350	5755.4636	0.7022	0.3141	0.0567	397.4460	184.5743
2035																		
No Project Scenario	1.4015	3.0062	3.1963	0.7230	0.2965	0.1415	0.0060	0.1415	0.0060	1.1805	7.4608	3.1264	4566.9132	0.7230	0.2965	0.0447	276.2255	178.5688
Old Plan Scenario Transit Grow	1.4202	3.0466	3.2392	0.7327	0.3004	0.1434	0.0061	0.1434	0.0061	1.1963	7.5031	3.1683	4637.4492	0.7327	0.3004	0.0454	280.8883	180.9814
Trend Scenario Transit Maintain	1.4062	3.0165	3.2073	0.7255	0.2975	0.1420	0.0060	0.1420	0.0060	1.1845	7.4591	3.1371	4587.0835	0.7255	0.2975	0.0449	277.6381	179.1898
Blueprint Scenario Transit Grow	1.3928	2.9877	3.1767	0.7186	0.2946	0.1406	0.0059	0.1406	0.0059	1.1732	7.3855	3.1072	4543.1791	0.7186	0.2946	0.0445	274.9724	177.4815
Blueprint Plus Scenario Transit Grow	1.3890	2.9796	3.1680	0.7166	0.2938	0.1402	0.0059	0.1402	0.0059	1.1700	7.3646	3.0987	4531.1291	0.7166	0.2938	0.0444	274.2597	176.9965
2042																		
No Project Scenario	1.1747	2.7980	2.9630	0.7492	0.3045	0.1447	0.0060	0.1447	0.0060	0.9911	6.6040	2.9051	4572.9711	0.7492	0.3045	0.0447	272.9961	181.7517
Old Plan Scenario Transit Grow	1.1877	2.8285	2.9954	0.7573	0.3078	0.1463	0.0061	0.1462	0.0061	1.0022	6.6258	2.9368	4635.9355	0.7573	0.3078	0.0454	277.3375	183.7117
Trend Scenario Transit Maintain	1.1830	2.8177	2.9839	0.7545	0.3066	0.1457	0.0060	0.1457	0.0060	0.9982	6.6137	2.9256	4613.3388	0.7544	0.3066	0.0451	275.7609	183.0090
Blueprint Scenario Transit Grow	1.1694	2.7851	2.9494	0.7457	0.3031	0.1440	0.0060	0.1440	0.0060	0.9866	6.5352	2.8917	4560.9046	0.7457	0.3030	0.0446	272.6721	180.8901
Blueprint Plus Scenario Transit Grow	1.1655	2.7758	2.9395	0.7432	0.3020	0.1435	0.0060	0.1435	0.0060	0.9834	6.5123	2.8821	4545.8948	0.7432	0.3020	0.0445	271.7809	180.2894

2020	ENVISION TOMORROW Metrics Urban Gross Residential Density	New Developed Acres Consumed	Important Ag Land outside SOI Acres Consumed	Critical Habitat Land Acres Consumed	CO2 Emissions per Household	Water Consumption per Household	Energy Use per Household
No Project Scenario							177.4
Old Plan Scenario Transit Grow							177.4
Trend Scenario Transit Maintain							177.4
Blueprint Scenario Transit Grow							177.4
Blueprint Plus Scenario Transit Grow							176.0
2035							
No Project Scenario							166.3
Old Plan Scenario Transit Grow							157.3
Trend Scenario Transit Maintain							166.3
Blueprint Scenario Transit Grow							157.3
Blueprint Plus Scenario Transit Grow							155.4
2042							
No Project Scenario	4.9	10,525	2,310.6	176.0	14.8	293.0	158.9
Old Plan Scenario Transit Grow	6.1	9,110	1,403.3	144.0	13.8	263.6	148.1
Trend Scenario Transit Maintain	4.9	10,525	2,310.6	176.0	14.8	293.0	158.9
Blueprint Scenario Transit Grow	6.1	8,884	1,518.3	144.0	13.8	264.0	148.3
Blueprint Plus Scenario Transit Grow	6.4	8,487	1,353.3	144.0	13.5	255.4	145.1

Recirculated Draft EIR

2018 Regional Transportation Plan/Sustainable Communities Strategy

SCH # 20171010374

Prepared by:

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June 2018

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Chapter 1 Introduction

Introduction

This document contains recirculated portions of the Draft EIR for the 2018 RTP/SCS. related to greenhouse gas (GHG) calculations. In the Draft EIR, TCAG erroneously reported EMFAC 14 GHG outputs in metric tons per day. This affected the conversion to per capita pounds per day used in the 2018 RTP/SCS EIR. The correct conversion to pounds per day results in a lower per capita pounds per day for CO_2 emissions. Example for 2017 Base Year:

Population = 471,842

3,586 tons/day of CO_2

1 metric ton = 2,204.62 pounds

1 ton = 2000 pounds

~~Reported = 16.75 lbs/day per capita~~

Corrected = 15.20 lbs/day per capita

These technical corrections do not change the basic analysis of the Draft 2018 RTP/SCS EIR or the impact significance conclusions contained therein.

Recirculated Sections of Draft EIR

The following 2018 RTP/SCS Draft EIR sections were affected by the revised GHG calculations:

- Section 4.6: Greenhouse Gases Section
- Chapter 5: Alternatives Section
- EIR Appendix 4.6 GHG Calculations

This document contains only the recirculated sections of the Draft EIR. If Draft EIR revisions are limited to a few chapters or portions of the EIR, a lead agency need only recirculate the chapters or portions that have been modified (CEQA Guidelines Section 15088.5(c)). Public notice and circulation of a Recirculated Draft EIR is subject to the same notice and consultation requirements that applied to the original Draft EIR, per CEQA Guidelines Sections 15086 and 15087. Consistent with CEQA Guidelines Section 15088.5(c), since the new information is limited to a few sections of the Draft EIR, TCAG has elected to recirculate only the above-listed portions of the Draft EIR that have been modified. In accordance with the CEQA Guidelines Section 15088.5(f)(2), TCAG requests that reviewers limit the scope of their comments to the revised portions of the Recirculated Draft EIR.

Public Notice and Review

TCAG will provide public Notice of Availability of the recirculated sections of the Draft EIR consistent with CEQA Guidelines Section 15087 requirements. The recirculated Draft PEIR sections are available on

TCAG's website at www.tularecog.org/rtp2018. The review period for the recirculated Draft EIR sections begins on June 1, 2018. Written comments will be accepted until 5:00 PM. on July 16, 2018. The 45-day public review period for the non-recirculated sections of the Draft EIR, which began on May 11, 2018, remains June 26, 2018. A public hearing on both the Draft EIR and recirculated sections of the Draft EIR will be held at the Dinuba Community Center, 1390 E. Elizabeth Way, Dinuba, CA 93618 on June 18, 2018 at 1:00 PM.

Please submit comments on the recirculated Draft PEIR sections to :

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210 N. Church Street, Ste. B
Visalia, CA 93291
ggutierrez@tularecog.org

Chapter 2: Recirculated Sections of Draft EIR

Recirculated Portions of Draft EIR

As described in Chapter 1, consistent with CEQA Guidelines Sections 15088.5(c), since the required revisions are limited to a few portions of the Draft EIR, TCAG is recirculating only the portions of the Draft EIR that have been modified. The modified text is included in these sections:

- Section 4.6: Greenhouse Gases Section
- Chapter 5: Alternatives Section
- EIR Appendix 4.6 GHG Calculations

Revisions to each recirculated section are marked to help the reader identify the specific portions that have been revised. In general, revised or new information is underlined, and deleted information is indicated by strikethrough.

Chapter 3: Revised Section 4.6: Greenhouse Gases Section

4.6 GREENHOUSE GASES

This section discusses the existing state of global climate change, the contribution of greenhouse gases (GHG) to this change, and evaluates the GHG impacts from implementation of the 2018 RTP/SCS. The section provides a discussion of the applicable federal, state, regional, and local agencies that regulate, monitor, and control GHG emissions. In addition, this section provides regional-scale mitigation measures as well as mitigation measures for subsequent, site-specific environmental review documents prepared by lead agencies to reduce identified impacts.

4.6.1 ENVIRONMENTAL SETTING

Global climate change refers to any significant change in climate measurements, such as temperature, precipitation, or wind, lasting for an extended period (i.e., decades or longer).[1] Climate change may result from:

- natural factors, such as changes in the sun's intensity or slow changes in the Earth's orbit around the sun;
- natural processes within the climate system (e.g., changes in ocean circulation, reduction in sunlight from the addition of GHGs and other gases to the atmosphere from volcanic eruptions); and
- human activities that change the atmosphere's composition (e.g., through burning fossil fuels) and the land surface (e.g., deforestation, reforestation, urbanization, desertification).

According to scientists, human activities have resulted in a change in global climate. The primary manifestation of global climate change has been a rise in the average global tropospheric temperature of 0.2 degree Celsius (°C) per decade, determined from meteorological measurements worldwide between 1990 and 2005.

The natural process through which heat is retained in the troposphere[2] is called the greenhouse effect. The greenhouse effect traps heat in the troposphere through a threefold process: (1) short-wave radiation in the form of visible light emitted by the Sun is absorbed by the Earth as heat; (2) long-wave radiation is re-emitted by the Earth; and (3) GHGs in the upper atmosphere absorb or trap the long-wave radiation and re-emit it back towards the Earth and into space. This third process is the focus of current climate change policy because increased quantities of GHGs in the earth's atmosphere result in more of the long-wave radiation being trapped in the atmosphere.

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1 US Environmental Protection Agency, "Glossary of Climate Change Terms," http://www.epa.gov /climatechange/glossary.html#Climate_change. 2010

2 The troposphere is the bottom layer of the atmosphere, which varies in height from the Earth's surface from 6 to 7 miles.

While water vapor and carbon dioxide (CO_2) are the most abundant GHGs, other trace GHGs have a greater ability to absorb and re-radiate long-wave radiation. To gauge the potency of GHGs, scientists have established a Global Warming Potential (GWP) for each GHG based on its ability to absorb and re-emit long-wave radiation over a specific period. The GWP of a gas is determined using CO_2 as the reference gas, which has a GWP of 1 over 100 years.[3] For example, a gas with a GWP of 10 is 10 times more potent than CO_2 over 100 years. The use of GWP allows GHG emissions to be reported using CO_2 as a baseline. The sum of each GHG multiplied by its associated GWP is referred to as "carbon dioxide equivalents" (CO_2e). This essentially means that 1 metric ton of a GHG with a GWP of 10 has the same climate change impacts as 10 metric tons of CO_2.

The impacts of climate change have been documented by the Office of Environmental Health Hazard Assessment (OEHHA), which includes the following changes that are already occurring:[4,5]

- A recorded increase in annual average temperatures as well as increases in daily minimum and maximum temperatures;
- An increase in the occurrence of extreme events, including wildfire and heat waves;
- A reduction in spring runoff volumes, as a result of declining snowpack;
- A decrease in winter chill hours, necessary for the production of high-value fruit and nut crops; and
- Changes in the timing and location of species sightings, including migration upslope of flora and fauna, and earlier appearance of Central Valley butterflies.

In addition to this, California's recent drought incited land subsidence, pest invasions that killed over 100 million trees, and water shortages. The total statewide economic cost of the 2014 drought was estimated at $2.2 billion, with a total loss of 17,100 jobs.[6] An analysis of water usage between 1990 and 2012 showed that while California's energy policies have supported climate mitigation efforts, the performance of these policies have increased vulnerability to climate impacts.[7]

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3 All GWPs are given as 100-year GWP. Unless noted otherwise, all GWPs were obtained from the Intergovernmental Panel on Climate Change. *Climate Change 1995: The Science of Climate Change – Contribution of Working Group I to the Second Assessment Report of the IPCC*. Cambridge (UK): Cambridge University Press, 1996

4 OEHHA, *Indicators of Climate Change in California*. https://oehha.ca.gov/climate-change/document/indicators-climate-change-california

5 California Air Resources Board, *California's 2017 Climate Change Scoping Plan*. November 2017.

6 Howitt, R., Medellin-Azuara, J., MacEwan, D., Lund, J., and Summer, D. *Economic Analysis of 2014 Drought for California Agriculture*. 2014.

7 Fulton, J., and Cooley, H., *The Water Footprint of California's Energy System, 1990-2012*. 2015.

According to the U.S. Forest Service National Insect and Disease Forest Risk Assessment,[8] California is at risk of losing 12 percent of the total area of forests and woodlands in the State due to insects and disease, or over 5.7 million acres. While future climate change is not modeled within the risk assessment, and current drought conditions are not accounted for in these estimates, the projected climate changes over a 15-year period (2013-2027) are expected to significantly increase the number of acres at risk, and will increase the risk from already highly destructive pests such as the mountain pine beetle. A recent aerial survey by the U.S. Forest Service identified more than 100 million dead trees in California.[9]

The warming climate also causes sea level rise by warming the oceans which causes water to expand, and by melting land ice which transfers water to the ocean. Sea level rise is expected to magnify the adverse impact of any storm surge and high waves on the California coast. As temperatures warm and GHG concentrations increase more carbon dioxide dissolves in the ocean, making it more acidic. More acidic ocean water affects a wide variety of marine species, including species that people rely on for food.[10]

While more intense dry periods are anticipated under warmer conditions, increased extreme wet conditions are also expected to increase due to more frequent warm, wet atmospheric river events and a higher proportion of precipitation falling as rain instead of snow. In recent years, atmospheric rivers have also been recognized as the cause of the large majority of major floods in rivers all along the U.S. West Coast and as the source of 30-50 percent of all precipitation in the same region.[11] These extreme precipitation events, together with the rising snowline, often cause devastating floods in major river basins (e.g., California's Russian River). Looking ahead, the frequency and severity of atmospheric rivers on the U.S. West Coast will increase due to higher atmospheric water vapor that occurs with rising temperature, leading to more frequent flooding.[12,13]

As GHG emissions continue to accumulate and climate disruption grows, such destructive events will become more frequent. Several recent studies project increased precipitation within hurricanes over

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8 U.S. Forest Service, *2013-2027 National Insect and Disease Forest Risk Assessment.* January 2014.

9 U.S. Department of Agriculture, *New Aerial Survey Identifies More Than 100 Million Dead Trees in California.* November 2016.

10 California Air Resources Board, *California's 2017 Climate Change Scoping Plan.* November 2017.

11 American Meteorological Society, *Atmospheric Rivers as Drought Busters on the U.S. West Coast,* April 2013.

12 Hagos, S., Leung, L.R., Yoon, JH., Lu, J., and Gao, Y., *A projection of changes in landfalling atmospheric river frequency and extreme precipitation over western North America from the Large Ensemble CESM simulations.* January 2016.

13 Payne, Ashley and Magnusdottir, Gudrun, *An Evaluation of Atmospheric Rivers over the North Pacific in CMIP5 and their response to warming under RCP 8.5.* November 2015.

ocean regions.[14,15] The primary physical mechanism for this increase is higher water vapor in the warmer atmosphere, which enhances moisture convergence in a storm for a given circulation strength. Since hurricanes are responsible for many of the most extreme precipitation events, such events are likely to become more extreme. Anthropogenic warming by the end of the 21st century will likely cause tropical cyclones globally to become more intense on average. This change implies an even larger percentage increase in the destructive potential per storm, assuming no changes in storm size.[16,17] Thus, the historical record, which once set our expectations for the traditional range of weather and other natural events, is becoming an increasingly unreliable predictor of the conditions we will face in the future. Consequently, the best available science must drive effective climate policy.[18]

California is committed to further supporting new research on ways to mitigate climate change and how to understand its ongoing and projected impacts. California's Fourth Climate Change Assessment and Indicators of Change Report will further update our understanding of the many impacts from climate change in a way that directly informs State agencies' efforts to safeguard the State's people, economy, and environment.[19,20]

Together, historical data, current conditions, and future projections provide a picture of California's changing climate, with two important messages:

- Change is already being experienced and documented across California, and some of these changes have been directly linked to changing climatic conditions.
- Even with the uncertainty in future climate conditions, every scenario estimates further change in future conditions.

It is critical that California continue to take steps to reduce GHG emissions in order to avoid the worst of the projected impacts of climate change. At the same time, the State is taking steps to make the State more

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14 Easterling, D.R., Kunkel, K.E., Wehner, M.F., and Sun, L., *Detection and Attribution of Climate Extremes in the Observed Record*. March 2016.

15 National Academies of Sciences, Engineering, and Medicine, *Attribution of Extreme Weather Events in the Context of Climate Change.* 2016.

16 Sobel, A.H., Camargo, S.J., Hall, T.M., Lee, C-Y., Tippett, M.K., and Wing, A.A., *Human Influence on Tropical Cyclone Intensity.* 2016.

17 Kossin, James P., NOAA/National Centers for Environmental Information, *Past and Projected Changes in Western North Pacific Tropical Cyclone Exposure*. July 2016.

18 California Air Resources Board, *California's 2017 Climate Change Scoping Plan.* November 2017.

19 California's Fourth Climate Change Assessment. http://resources.ca.gov/climate/safeguarding/research/

20 OEHHA, *Indicators of Climate Change in California*. https://oehha.ca.gov/climate-change/document/indicators-climate-change-california

resilient to ongoing and projected climate impacts as laid out by the Safeguarding California Plan.[21] The Safeguarding California Plan is being updated in 2017 to present new policy recommendations and provide a roadmap of all the actions and next steps that state government is taking to adapt to the ongoing and inevitable effects of climate change. California's continuing efforts are vital steps toward minimizing the impact of GHG emissions and a three-pronged approach of reducing emissions, preparing for impacts, and conducting cutting-edge research can serve as a model for action.[22]

4.6.1.1 Greenhouse Gases

GHGs of most concern include the following compounds:

- Carbon Dioxide (CO_2). Anthropogenic CO_2 emissions are primarily generated by fossil fuel combustion from stationary and mobile sources. Over the past 200 years, the burning of fossil fuels such as coal and oil, deforestation, land-use changes, and other activities have caused the concentrations of heat-trapping GHGs to increase significantly in our atmosphere.[23] Carbon dioxide is also generated by natural sources such as cellular respiration, volcanic activity, decomposition of organisms, and forest fires. Carbon dioxide is the most widely emitted GHG and is the reference gas (GWP of 1) for determining the GWP of other GHGs.

- Methane (CH_4). Methane is emitted from biogenic sources (i.e., resulting from the activity of living organisms), incomplete combustion in forest fires, landfills, manure management, and leaks in natural gas pipelines. In the US, the top three sources of CH_4 are landfills, natural gas systems, and enteric fermentation.[24] Methane is the primary component of natural gas, which is used for space and water heating, steam production, and power generation. The GWP of CH_4 is 21.

- Nitrous Oxide (N_2O). Nitrous oxide is produced by natural and human-related sources. Primary human-related sources include agricultural soil management, animal manure management, sewage treatment, mobile and stationary combustion of fossil fuel, adipic acid production, and nitric acid production. The GWP of N_2O is 310.

- Hydrofluorocarbons (HFCs). HFCs typically are used as refrigerants in both stationary refrigeration and mobile air conditioning. The use of HFCs for cooling and foam blowing is growing particularly as the continued phase-out of chlorofluorocarbons (CFCs) and hydrochlorofluorocarbons (HCFCs) gains momentum. The GWP of HFCs ranges from 140 for HFC-152a to 6,300 for HFC-236fa.

- Perfluorocarbons (PFCs). Perfluorocarbons are compounds consisting of carbon and fluorine. They are primarily created as a byproduct of aluminum production and semiconductor manufacturing. Perfluorocarbons are potent GHGs with a GWP several thousand times that of carbon dioxide,

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21 California Natural Resources Agency, *Safeguarding California and Climate Change Adaption Policy*, http://resources.ca.gov/climate/safeguarding/

22 California Air Resources Board, *California's 2017 Climate Change Scoping Plan.* November 2017.

23 US Environmental Protection Agency, *Inventory of U.S. Greenhouse Gas Emissions and Sinks 1990-2016. 2018.*

24 US EPA, *Understanding the Inventory of U.S. Greenhouse Gas Emissions and Sinks and the Greenhouse Gas Reporting Program for Landfills: Methodologies, Uncertainties, Improvements and Deferrals.*

depending on the specific PFC. Another area of concern regarding PFCs is their long atmospheric lifetime of up to 50,000 years.[25] The global warming potentials (GWPs) of PFCs range from 5,700 to 11,900.

- Sulfur Hexafluoride (SF_6). Sulfur hexafluoride is a colorless, odorless, nontoxic, nonflammable gas. It is most commonly used as an electrical insulator in high voltage equipment that transmits and distributes electricity. Sulfur hexafluoride is the most potent GHG that has been evaluated by the Intergovernmental Panel on Climate Change with a GWP of 23,900.

4.6.1.2 Global Ambient CO2 Concentrations

To determine the global atmospheric variation of CO_2, CH_4, and N_2O from before the start of industrialization, air trapped by ice has been extracted from core samples taken from polar ice sheets. For the period from around 1750 to the present, global CO_2 concentrations increased from a pre-industrialization period concentration to 391 ppm in 2011, which represents an exceedance of 1750 levels by approximately 40 percent.[26] Global CH_4 and N_2O concentrations show similar increases for the same period (see **Table 4.6-1, Comparison of Global Pre-Industrial and Current GHG Concentrations**).

Table 4.6-1
Comparison of Global Pre-Industrial and Current GHG Concentrations

Greenhouse Gas	Early Industrial Period Concentrations[1]	Natural Range for Last 650,000 Years[1]	2011 Concentrations[2]
Carbon Dioxide (CO_2)	280 ppm	180 to 300 ppm	391 ppm
Methane (CH_4)	715 ppb	320 to 790 ppb	1,803 ppb
Nitrous Oxide (N_2O)	270 ppb	NA	324 ppb

Source: [1] Intergovernmental Panel on Climate Change (IPCC), Climate Change 2007: The Physical Science Basis, Summary for Policymakers 2007. 2 IPCC, Climate Change 2013 The Physical Science Basis. *2013.*
ppm=parts per million; ppb=parts per billion.

4.6.1.3 Contributions to Greenhouse Gas Emissions

Global

Worldwide anthropogenic GHG emissions for industrialized nations (referred to as Annex I) and developing nations (referred to as Non-Annex I) are tracked through the year 2014. The sum of the top five GHG producing nations (plus the European Union) totaled approximately 29,600 million metric tons

25 US Department of Energy, Energy Information Administration, "Other Gases: Hydrofluorocarbons, Perfluorocarbons, and Sulfur Hexafluoride," http://www.eia.doe.gov/oiaf/1605/gg00rpt/other_gases.html. n.d.

26 IPCC, *Climate Change 2013 The Physical Science Basis.* 2013.

of CO_2 equivalents ($MMTCO_2e$).[27,28] It should be noted that global emissions inventory data are not all from the same year and may vary depending on the source of the emissions inventory data.[29] The top five countries and the European Union accounted for approximately 55 percent of the total global GHG emissions according to the most recently available data (see **Table 4.6-2, Top Five GHG Producer Countries and the European Union [Annual]**). The GHG emissions in more recent years may differ from the inventories presented in **Table 4.6-2**; however, the data is representative of currently available global inventory data.

United States

As noted in **Table 4.6-2**, the US was the number two producer of global GHG emissions in 2010. The primary GHG emitted by human activities in the US was CO_2, representing approximately 82 percent of total GHG emissions. Carbon dioxide from fossil fuel combustion, the largest source of GHG emissions, accounted for approximately 76 percent of US GHG emissions.[30,31]

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27 World Resources Institute, "Climate Analysis Indicators Tool (CAIT)," https://www.climatewatchdata.org/ghg-emissions?breakBy=location&source=31&version=1

28 The CO_2 equivalent emissions commonly are expressed as "million metric tons of carbon dioxide equivalent ($MMTCO_2E$)." The carbon dioxide equivalent for a gas is derived by multiplying the tons of the gas by the associated GWP, such that $MMTCO_2E$ = (million metric tons of a GHG) x (GWP of the GHG). For example, the GWP for methane is 21. This means that the emission of one million metric tons of methane is equivalent to the emission of 21 million metric tons of CO_2.

29 The global emissions are the sum of Annex I and non-Annex I countries, without counting Land-Use, Land-Use Change and Forestry (LULUCF). For countries without 2005 data, the United Nations Framework Convention on Climate Change (UNFCCC) data for the most recent year were used. United Nations Framework Convention on Climate Change, "Annex I Parties – GHG total without LULUCF," http://unfccc.int/ghg_emissions_data/ghg_data_from_unfccc/time_series_annex_i/ items/3841.php and "Flexible GHG Data Queries" with selections for total GHG emissions excluding LULUCF/LUCF, all years, and non-Annex I countries, http://unfccc.int/di/FlexibleQueries/Event.do?event= showProjection. n.d.

30 US Environmental Protection Agency, *Inventory of U.S. Greenhouse Gas Emissions and Sinks,* April, 2016. https://www.epa.gov/sites/production/files/2018-01/documents/2018_complete_report.pdf

31 The troposphere is the bottom layer of the atmosphere, which varies in height from the Earth's surface from 6 to 7 miles.

Table 4.6-2
Top Five GHG Producer Countries and the European Union (Annual)

Emitting Countries	2014 GHG Emissions ($MMTCO_2e$)
China	12,000
United States	6,300
European Union (EU), 27 Member States	3,600
India	3,200
Indonesia	2,500
Russia	2,000

Source: World Resources Institute, "Climate Analysis Indicators Tool (CAIT)," https://www.climatewatchdata.org/ghg-emissions?breakBy=location&source=31&version=1. 2018

State of California

The California Air Resources Board (CARB) compiles GHG inventories for the State of California. Based on the 2017 GHG inventory data (i.e., the latest year for which data are available), California emitted 440 $MMTCO_2e$ including emissions resulting from imported electrical power in 2015.[32] Based on the GHG inventories compiled by the World Resources Institute,[33] California's total statewide GHG emissions rank second in the US (Texas is number one with 874 $MMTCO_2e$) with emissions of 455 $MMTCO_2e$ in 2017.[34]

The primary contributors to GHG emissions in California are transportation, electric power production from both in-state and out-of-state sources, industry, agriculture and forestry, and other sources, which include commercial and residential activities. **Table 4.6-3, GHG Emissions in California (2000 and 2015)**, provides a summary of GHG emissions reported in California in 2000 and 2015 by categories defined by the United Nations Intergovernmental Panel on Climate Change (IPCC).

32 California Air Resources Board, "California Greenhouse Gas 2000-2015 Inventory by IPCC Category - Summary," 2017. https://www.arb.ca.gov/cc/inventory/data/tables/ghg_inventory_ipcc_sum_2000-15.pdf.

33 World Resources Institute, *U.S. State Emissions Explorer Tool*, 2017. http://cait.wri.org/

34 Ibid.

Table 4.6-3
GHG Emissions in California (2000 and 2015)

Source Category	2000 ($MMTCO_2e$)	Percent of Total	2015 ($MMTCO_2e$)	Percent of Total
ENERGY	**408.9**	**87.52%**	**367.6**	**83.48%**
Energy Industries	401.83	86.01%	132.93	30.19%
Manufacturing Industries & Construction	22.75	4.87%	19.98	4.54%
Transport	175.29	37.52%	163.64	37.16%
Other Sectors (Residential/Commercial/Institutional)	44.67	9.56%	40.33	9.16%
Solid Fuels	0.04	0.01%	0.01	0.00%
Fugitive Emissions from Oil & Natural Gas	5.78	1.24%	7.51	1.71%
Fugitive Emissions from Geothermal Energy Production	1.13	0.24%	1.15	0.26%
Pollution Control Devices	0.11	0.02%	0.00	0.00%
INDUSTRIAL PROCESSES & PRODUCT USE	**19.6**	**4.20%**	**32.5**	**7.38%**
Mineral Industry	5.60	1.20%	5.23	1.19%
Chemical Industry	0.06	0.01%	0.03	0.01%
Non-Energy Products from Fuels & Solvent Use	2.46	0.53%	1.90	0.43%
Electronics Industry	0.52	0.11%	0.26	0.06%
Substitutes for Ozone Depleting Substances	6.10	1.31%	18.37	4.17%
Other Product Manufacture and Use	1.52	0.33%	1.39	0.32%
Other	3.31	0.71%	5.26	1.19%
AGRICULTURE, FORESTRY, & OTHER LAND USE	**29.4**	**6.29%**	**31.7**	**7.20%**
Livestock	19.62	4.20%	23.25	5.28%
Aggregate Sources & Non-CO_2 Sources on Land	9.76	2.09%	8.42	1.91%
WASTE	**9.3**	**1.99%**	**10.6**	**2.41%**
Solid Waste Disposal and Biological Treatment	7.22	1.55%	8.40	1.91%
Biological Treatment of Solid Waste	0.13	0.03%	0.33	0.07%
Wastewater Treatment & Discharge	1.93	0.41%	1.90	0.43%
EMISSIONS SUMMARY				
Gross California Emissions	467.19		440.36	

Source:
[1] *California Air Resources Board, "California Greenhouse Gas 2000-2015 Inventory by IPCC Category - Summary," https://www.arb.ca.gov/cc/inventory/data/tables/ghg_inventory_ipcc_sum_2000-15.pdf. 2017.*

California's GHG emissions have followed a declining trend since 2007. In 2015, emissions from routine emitting activities statewide were 1.5 million metric tons of CO_2e ($MMTCO_2e$) lower than 2014 levels, representing an overall decrease of 10 percent since peak levels in 2004.[35]

35 California Air Resources Board, "California Greenhouse Gas 2000-2015 Inventory by IPCC Category - Summary," 2017. https://www.arb.ca.gov/cc/inventory/data/tables/ghg_inventory_ipcc_sum_2000-15.pdf.

Tulare County

GHG emissions produced within unincorporated Tulare County in 2007 (the latest date for which data were available) were estimated to be 5.2 MMTCO2e.[36] The Tulare County General Plan EIR indicates that projected emissions for 2030 in unincorporated Tulare County are 6.1 million tonnes of MMTCO2e. In both 2007 and 2030, dairies/feedlots accounted for the largest portion of total emissions, making up 63 percent and 59 percent of total emissions, respectively. Mobile sources (on and off- road) accounted for the second largest portion of emissions, contributing 16 percent in 2007 and are projected to account for 20 percent in 2030. When normalized by population, total annual emissions equate to 36 tonnes of MMTCO2e per resident in 2007, and 27 tonnes of MMTCO2e per resident in 2030.

4.6.2 REGULATORY FRAMEWORK

4.6.2.1 International

Intergovernmental Panel on Climate Change

The World Meteorological Organization (WMO) and United Nations Environmental Program (UNEP) established the IPCC in 1988. The goal of the IPCC is to evaluate the risk of climate change caused by human activities. Rather than performing research or monitoring climate, the IPCC relies on peer-reviewed and published scientific literature to make its assessment. While not a regulatory body, the IPCC assesses information (i.e., scientific literature) regarding human-induced climate change and the impacts of human-induced climate change, and recommends options to policy makers for the adaptation and mitigation of climate change. The IPCC reports its evaluations in special reports called assessment reports. The latest assessment report (i.e., Fifth Assessment Report, consisting of three working group reports and a synthesis report based on the first three reports) was published in 2013. In its 2013 report, the IPCC stated that global temperature increases since 1951 were extremely likely attributable to man-made activities (greater than 95 percent certainty).[37]

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36 Tulare County General Plan 2030, Recirculated EIR, Appendix E, February 2010

37 IPCC, *Climate Change 2013 The Physical Science Basis.* 2013.

Paris Accord

The most recent international climate change agreement was adopted at the United Nations Framework Convention on Climate Change in Paris in December 2015 (the "Paris Accord").[38] In the Paris Accord, the United States set its intended nationally determined contribution to reduce its GHG emissions by 26 to 28 percent below its 2005 level in 2025 and to make best efforts to reduce its emissions by 28 percent. These targets were set with the goal of limiting global temperature rise to below 2 degrees Celsius and getting to the 80 percent emission reduction by 2050.

However, in June 2017, the U.S. announced its intent to withdraw from the Accord.[39] The earliest effective date of a withdrawal by the U.S. is November 2020.

4.6.2.2 Federal

Supreme Court Ruling

In *Massachusetts v. Environmental Protection Agency* (2007) 59 USC 497, the United States Supreme Court held in April of 2007 that US EPA has statutory authority under Section 202 of the Clean Air Act (CAA) to regulate GHGs. The Court did not hold that US EPA was required to regulate GHG emissions; however, it indicated that the agency must decide whether GHGs cause or contribute to air pollution that is reasonably anticipated to endanger public health or welfare.

US EPA Endangerment Finding

On December 7, 2009, the US EPA Administrator signed two distinct findings regarding GHGs under section 202(a) of the Clean Air Act (42 USC Section 7521):

- Endangerment Finding: The Administrator finds that the current and projected concentrations of the six key well-mixed GHGs (carbon dioxide, methane, nitrous oxide, hydrofluorocarbons, perfluorocarbons, and sulfur hexafluoride) in the atmosphere threaten the public health and welfare of current and future generations.

- Cause or Contribute Finding: The Administrator finds that the combined emissions of these well-mixed GHGs from new motor vehicles and new motor vehicle engines contribute to the GHG pollution that threatens public health and welfare.

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38 United Nations, Paris Agreement, 2015. Available: http://unfccc.int/files/essential_background/convention/application/pdf/english_paris_agreement.pdf, accessed April 17, 2018.

39 The White House, Statement by President Trump on the Paris Climate Accord, 2017. Available: https://www.whitehouse.gov/briefings-statements/statement-president-trump-paris-climate-accord/, accessed April 17, 2018.

Energy Independence and Security Act

The Energy Independence and Security Act of 2007 (42 USC Section 17381) includes several key provisions that increase energy efficiency and the availability of renewable energy, which reduce GHG emissions as a result. First, the Act sets a Renewable Fuel Standard that requires fuel producers to use at least 36 billion gallons of biofuel by 2022. Second, it increased Corporate Average Fuel Economy (CAFE) Standards to require a minimum average fuel economy of 35 miles per gallon for the combined fleet of cars and light trucks by 2020. Third, it includes a variety of new standards for lighting and for residential and commercial appliance equipment. The equipment includes residential refrigerators, freezers, refrigerator-freezers, metal halide lamps, and commercial walk-in coolers and freezers.

EPA Reporting Rule

The US Environmental Protection Agency (US EPA) adopted a mandatory GHG reporting rule in September 2009 (40 CFR Part 98). The rule w requires suppliers of fossil fuels or entities that emit industrial GHGs, manufacturers of vehicles and engines, and facilities that emit 25,000 metric tons or more per year of GHG emissions to submit annual reports to the US EPA beginning in 2011 (covering the 2010 calendar year emission). Vehicle and engine manufacturers were required to begin reporting GHG emissions for model year 2011.

Fuel Economy Standards

On September 15, 2009, the US EPA and the Department of Transportation's (DOT) National Highway Traffic Safety Administration (NHTSA) issued a joint proposal to establish a national program consisting of new standards for model year 2012 through 2016 light-duty vehicles that will reduce GHG emissions and improve fuel economy. The proposed standards would be phased in and would require passenger cars and light-duty trucks to comply with a declining emissions standard. In 2012, passenger cars and light-duty trucks would have to meet an average emissions standard of 295 grams of CO_2 per mile and 30.1 miles per gallon. By 2016, the vehicles would have to meet an average standard of 250 grams of CO_2 per mile and 35.5 miles per gallon.[40] The final standards were adopted by the US EPA and DOT on April 1, 2010.[41]

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40 US EPA, "EPA and NHTSA Propose Historic Nation Program," 2009.

41 U.S. Environmental Protection Agency, Regulatory Announcement, EPA and NHTSA Finalize Historic National Program to Reduce Greenhouse Gases and Improve Fuel Economy for Cars and Trucks, April 2010.

Medium- and Heavy-Duty Vehicle Program

In October 2010, the US EPA and NHTSA announced a program to reduce GHG emissions and to improve fuel efficiency for medium- and heavy-duty-vehicles (model years 2014 through 2018). These standards were signed into law on August 9, 2011.[42] In October 2016, US EPA and NHTSA adopted Phase 2 GHG and fuel efficiency standards for medium- and heavy-duty engines and vehicles.[43]

Clean Power Plan

In 2015, US EPA published the Clean Power Plan (80 Fed. Reg. 64661, October 23, 2015). The Clean Power Plan sets achievable standards to reduce CO_2 emissions by 32 percent from 2005 levels by 2030. This Plan establishes final emissions guidelines for states to follow in developing plans to reduce GHG emissions from existing fossil fuel-fired electric generating units (EGUs). Specifically, US EPA is establishing: (1) CO_2 emission performance rates representing the best system of emission reduction (BSER) for two subcategories of existing fossil-fuel-fired EGUs, fossil-fuel-fired electric utility steam generating units and stationary combustion turbines; (2) state-specific CO_2 goals reflecting the CO_2 emission performance rates; and (3) guidelines for the development, submittal and implementation of state plans that establish emission standards or other measures to implement the CO_2 emission performance rates, which may be accomplished by meeting the state goals. This final rule would continue progress already under way in the United States to reduce CO_2 emissions from the utility power sector. On February 9, 2016, the Supreme Court (Order No. 15A773) stayed implementation of the Clean Power Plan pending judicial review. In addition, US EPA is currently proposing to repeal the Clean Power Plan after completing a thorough review as directed by the Executive Order on Energy Independence (as discussed below). In sum, the Clean Power Plan continues to face multiple legal challenges and its future is uncertain.

Executive Order on Energy Independence

On March 28, 2017, President Donald Trump signed Executive Order 13783, "Promoting Energy Independence and Economic Growth," which calls for:

- Review of the Clean Power Plan;

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42 U.S. Environmental Protection Agency, Regulatory Announcement, EPA and NHTSA Adopt First-Ever Program to Reduce Greenhouse Gas Emissions and Improve Fuel Efficiency of Medium- and Heavy-Duty Vehicles, August 2011.

43 U.S. Environmental Protection Agency, Final Rule for Greenhouse Gas Emissions and Fuel Efficiency Standards for Medium- and Heavy-Duty Engines and Vehicles - Phase 2. Available: https://www.epa.gov/regulations-emissions-vehicles-and-engines/final-rule-greenhouse-gas-emissions-and-fuel-efficiency#rule-history, accessed March 1, 2018.

- Review of the 2016 Oil and Gas New Source Performance Standards for New, Reconstructed, and Modified Sources;

- Review of the Standards of Performance for GHG Emissions from New, Modified, and Reconstructed Stationary Sources: Electric Generating Units; and

- Withdrawal of Proposed Rules: (1) Federal Plan Requirements for GHG Emissions From Electric Utility Generating Units Constructed on or before January 8, 2014; (2) Model Trading Rules; Amendments to Framework Regulations; and (3) Clean Energy Incentive Program Design Details.

4.6.2.3 State

In response to growing scientific and political concern with global climate change, California adopted a series of laws to reduce emissions of GHGs into the atmosphere.

Assembly Bill 1493 (AB 1493) (Pavley Regulations) - Vehicular Emissions Greenhouse Gas Emission Standards

In September 2002, AB 1493 (Chapter 200, Statutes of 2002) (referred to as Pavley I) was enacted, requiring the development and adoption of regulations to achieve "the maximum feasible reduction of greenhouse gases" emitted by noncommercial passenger vehicles, light-duty trucks, and other vehicles used primarily for personal transportation in the state by January 1, 2005. Pavley I took effect for model years starting in 2009 to 2016 and Pavley II, which is now referred to as "LEV (Low Emission Vehicle) III GHG" will cover 2017 to 2025 (13 Cal. Code Regs. Section 1900 *et seq.*). Fleet average emission standards were to reach a 22 percent reduction by 2012 and 30 percent by 2016.

Executive Order (EO) S-3-05

On June 1, 2005, EO S-3-05 set the following GHG emission reduction goals: reduce GHG emissions to 2000 levels by 2010; reduce GHG emissions to 1990 levels by 2020; and reduce GHG emissions to 80 percent below 1990 levels by 2050.[44] EO S-3-05 also calls for the Secretary of California Environmental Protection Agency (Cal/EPA) to be responsible for coordination of state agencies and progress reporting.

In response to the Executive Order, the Secretary of the Cal/EPA created the Climate Action Team (CAT). California's CAT originated as a coordinating council organized by the Secretary for Environmental

44 While EO S-3-05 sets a goal that Statewide GHG emissions be reduced to 80 percent below 1990 levels by 2050, the EO does not constitute a "plan" for GHG reduction, and no State plan has been adopted to achieve the 2050 goal.

Protection. It included the Secretaries of the Natural Resources Agency, and the Department of Food and Agriculture, and the Chairs of the Air Resources Board, Energy Commission, and Public Utilities Commission. The original council was an informal collaboration between the agencies to develop potential mechanisms for reductions in GHG emissions in the state. The council was given formal recognition in Executive Order S-3-05 and became the CAT.

The original mandate for the CAT was to develop proposed measures to meet the emission reduction targets set forth in the executive order. The CAT has since expanded and currently has members from 18 state agencies and departments.

The CAT is responsible for preparing reports that summarize the state's progress in reducing GHG emissions. The most recent CAT Report was published in December 2010. The CAT Report discusses mitigation and adaptation strategies, state research programs, policy development, and future efforts.

Assembly Bill 32 (AB 32) and CARB Scoping Plan

The State of California has implemented numerous laws targeting GHG emissions. Chief among these is the California Global Warming Solutions Act of 2006 (Assembly Bill [AB] 32) (Health & Safety Code Section 38500 et seq.). AB 32 represents the first enforceable statewide program to limit GHG emissions from all major sectors with penalties for noncompliance. Like EO S-3-05, AB 32 requires the State of California to reduce its emissions to 1990 levels by 2020. The Act establishes key deadlines for certain actions the state must take in order to achieve the reduction target. The first action under AB 32 resulted in California Air Resources Board's (CARB) adoption of a report listing three specific early action GHG reduction measures on June 21, 2007. On October 25, 2007, CARB approved an additional six early action GHG reduction measures under AB 32.[45]

As required under AB 32, on December 6, 2007, CARB approved the 1990 GHG emissions inventory, thereby establishing the emissions limit for 2020. The 2020 emissions limit was set at 427 $MMTCO_2e$, since updated to 431 $MMTCO_2e$.[46] The inventory indicated that in 1990, transportation, with 35 percent of the state's total emissions, was the largest single sector generating carbon dioxide; followed by industrial emissions, 24 percent; imported electricity, 14 percent; in-state electricity generation, 11 percent; residential use, 7 percent; agriculture, 5 percent; and commercial uses, 3 percent (figures are based on the 1990 inventory). AB 32 does not require individual sectors to meet their individual 1990 GHG emissions inventory; the total statewide emissions are required to meet the 1990 target by 2020.

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45 https://www.arb.ca.gov/cc/ccea/ccea.htm, accessed April 17, 2018.

46 https://www.arb.ca.gov/cc/inventory/1990level/1990level.htm, accessed April 18, 2017.

In addition to the 1990 emissions inventory, CARB also adopted regulations requiring the mandatory reporting of GHG emissions for large facilities on December 6, 2007 (17 Cal. Code Regs. Section 95100 *et seq.*). The mandatory reporting regulations require annual reporting from the largest facilities in the state, which account for approximately 94 percent of GHG emissions from industrial and commercial stationary sources in California. About 800 separate sources fall under the new reporting rules and include electricity generating facilities, electricity retail providers and power marketers, oil refineries, hydrogen plants, cement plants, cogeneration facilities, and industrial sources that emit over 25,000 tons of CO_2 each year from on-site stationary combustion sources. Affected facilities began tracking their emissions in 2008, and reported them beginning in 2009, with a phase-in process to allowed facilities to develop reporting systems and train personnel in data collection. Emissions for 2008 could be based on best available emission data. Beginning in 2010, however, emissions reporting requirements became more rigorous and are subject to third-party verification. Verification will take place annually or every three years, depending on the type of facility.

In December 2008, CARB adopted a *Climate Change Scoping Plan*[47] indicating how emission reductions will be achieved from significant sources of GHGs via regulations, market mechanism, and other actions. The *Climate Change Scoping Plan* identifies 18 recommended strategies the state should implement to achieve AB 32.

CARB's initial Scoping Plan contains the main strategies California would implement to reduce the projected 2020 Business-as-Usual (BAU) emissions to 1990 levels, as required by AB 32. These strategies are intended to reduce CO_2e[48] emissions by 174 million metric tons (MT), or approximately 30 percent, from the State's projected 2020 emissions level of 596 million MTCO2e (MMTCO2e) under a BAU[49] scenario. This reduction of 42 million MTCO2e, or almost 10 percent from 2002 to 2004 average emissions, would be required despite the population and economic growth forecast through 2020.

CARB's initial Scoping Plan calculates 2020 BAU emissions as those expected to occur in the absence of any GHG reduction measures. The 2020 BAU emissions estimate was derived by projecting emissions from a past baseline year using growth factors specific to each of the different economic sectors (e.g., transportation, electrical power, commercial and residential, industrial). CARB used 3-year average

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47 https://www.arb.ca.gov/cc/scopingplan/document/scopingplandocument.htm, accessed April 17, 2018.

48 Carbon dioxide equivalent (CO_2e) – A metric measure used to compare the emissions from various greenhouse gases based upon their global warming potential.

49 "Business-as-Usual" refers to emissions expected to occur in the absence of any GHG reduction measure (California Environmental Protection Agency Air Resources Board Website, http://www.arb.ca.gov/cc/inventory/data/bau.htm, Accessed June 1, 2016). Note that there is significant controversy as to what BAU means. In determining the GHG 2020 limit, CARB used the above as the "definition."

emissions, by sector, for 2009 to 2011 to forecast emissions to 2020. The measures described in CARB's Scoping Plan are intended to reduce the projected 2020 BAU to 1990 levels, as required by AB 32.

The First Update to California's Climate Change Scoping Plan (2014 Scoping Plan Update[50]) was developed by the CARB in collaboration with the CAT and reflects the input and expertise of a range of state and local government agencies. The 2014 Scoping Plan Update lays the foundation for establishing a broad framework for continued emission reductions beyond 2020, on the path to 80 percent below 1990 levels by 2050.

On December 14, 2017, CARB approved the final version of *California's 2017 Climate Change Scoping Plan* (2017 Scoping Plan Update), which outlines the proposed framework of action for achieving the SB 32 2030 GHG target of 40 percent reduction in GHG emissions relative to 1990 levels (CARB 2017a). See further discussion below.

California Cap-and-Trade Program

Authorized by the California Global Warming Solutions Act of 2006 (AB 32), the Cap-and-Trade Program is a core strategy that California is using to meet its statewide GHG reduction targets for 2020 and 2030, and ultimately achieve an 80 percent reduction from 1990 levels by 2050. Pursuant to its authority under AB 32, CARB has designed and adopted a California Cap-and-Trade Program to reduce GHG emissions from major sources (deemed "covered entities") by setting a firm cap on statewide GHG emissions and employing market mechanisms to achieve AB 32's emission-reduction mandate of returning to 1990 levels of emissions by 2020 (17 CCR Sections 95800 to 96023).

In September 2012, CARB adopted a California Cap on Greenhouse Gas Emissions and Market-Based Compliance Mechanisms, which established the cap-and-trade program to manage GHG emissions, for California. The cap-and-trade program is a market-based approach wherein the government determines an overall emission target, or "cap," for a particular set of facilities. The cap is the total amount of emissions that all of the facilities can produce. Tradable emissions allowances totaling the overall emissions cap are distributed by auction or given out amongst the particular set of facilities. The emissions allowances can be traded amongst the facilities.

Under the Cap-and-Trade Program, an overall limit is established for GHG emissions from capped sectors (e.g., electricity generation, petroleum refining, cement production, and large industrial facilities that emit more than 25,000 metric tons CO_2e per year) and declines over time, and facilities subject to the cap-and-trade permits to emit GHGs. The statewide cap for GHG emissions from the capped sectors

50 https://www.arb.ca.gov/cc/scopingplan/document/updatedscopingplan2013.htm, accessed April 17, 2018.

commenced in 2013 and declines over time, achieving GHG emission reductions throughout the program's duration (see generally 17 CCR Sections 95811, 95812). On July 17, 2017, the California Legislature passed Assembly Bill 398, extending the Cap-and-Trade Program through 2030.

The cap-and-trade regulation provides a firm cap, helping to ensure that the 2020 and 2030 statewide emission limits will not be exceeded. An inherent feature of the Cap-and-Trade Program is that it does not direct GHG emissions reductions in any discrete location or by any particular source. Rather, GHG emissions reductions are ensured on a state-wide basis.

Executive Order B-16-12

In March 23, 2012, Governor Brown issued Executive Order B-16-2012 to encourage zero-emission vehicles (ZEVs) and related infrastructure. It orders CARB, CEC, CPUC, and other relevant agencies to work with the Plug-in Electric Vehicle Collaborative and the California Fuel Cell Partnership to establish benchmarks concerning ZEVs. By 2020, the state's ZEV infrastructure should support up to one million vehicles. By 2025, Executive Order B-16-2012 aims to put over 1.5 million ZEVs on California roads and displace at least 1.5 billion gallons of petroleum. The Executive Order also directs state government to begin purchasing ZEVs. In 2015, 10 percent of state departments' light-duty fleet purchases must be ZEVs, climbing to 25 percent of light-duty fleet purchases by 2020. Executive Order B-16-2012 sets a target for 2050 to reduce GHG emissions in the transportation sector by 80 percent below 1990 levels.

Senate Bill 32 (SB 32) and AB 197

On September 8, 2016, California signed into law Senate Bill 32 (SB 32), which adds Section 38566 to the Health and Safety Code and requires a commitment to reducing statewide GHG emissions by 2020 to 1990 levels and by 2030 to 40 percent less than 1990 levels. SB 32 was passed with companion legislation AB 197 Chapter 250, Statutes of 2016), which provides greater legislative oversight of CARB's GHG regulatory programs, requires CARB to account for the social costs of GHG emissions, and establishes a legislative preference for direct reductions of GHG emissions.

In November 2017, CARB adopted California's 2017 Climate Change Scoping Plan (2017 Update), which outlines the proposed framework of action for achieving California's SB 32 2030 GHG target: a 40 percent reduction in GHG emissions by 2030 relative to 1990 levels.[51] The 2030 target is intended to ensure that California remains on track to achieve the goal set forth by E.O. B-30-15 to reduce statewide GHG emissions by 2050 to 80 percent below 1990 levels.

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51 CARB, *California's 2017 Climate Change Scoping Plan*, November 2017.

The 2017 Update identifies key sectors of the implementation strategy, which includes improvements in low carbon energy, industry, transportation sustainability, natural and working lands, waste management, and water. Through a combination of data synthesis and modeling, CARB determined that the target statewide 2030 emissions limit is 260 MMTCO2e, and that further commitments will need to be made to achieve an additional reduction of 50 MMTCO2e beyond current policies and programs. Key elements of the 2017 Update include a proposed 20 percent reduction in GHG emissions from refineries and an expansion of the Cap-and-Trade program to meet the aggressive 2030 GHG emissions goal and ensure achievement of the 2050 limit set forth by E.O. B-30-15. For the transportations sector, the 2017 Update indicates that while most of the GHG reductions will come from technologies and low carbon fuels, a reduction in the growth of vehicle miles traveled (VMT) is also needed. The 2017 Update indicates that stronger SB 375 GHG reduction targets will enable the State to make significant progress toward this goal, but alone will not provide all of the VMT growth reductions that will be needed. It notes that here is a gap between what SB 375 can provide and what is needed to meet the State's 2030 and 2050 goals. The 2017 Update recommends that local governments consider policies to reduce VMT, including: "land use and community design that reduces VMT; transit oriented development; street design policies that prioritize transit, biking, and walking; and increasing low carbon mobility choices, including improved access to viable and affordable public transportation and active transportation opportunities."

California Environmental Quality Act Guidelines Amendments

California Senate Bill (SB) 97 (Chapter 185, Statutes of 2007) required the Governor's Office of Planning and Research (OPR) to develop *California Environmental Quality Act (CEQA) Guidelines* "for the mitigation of greenhouse gas emissions or the effects of greenhouse gas emissions." The *State CEQA Guidelines* amendments provide guidance to public agencies regarding the analysis and mitigation of the effects of GHG emissions in CEQA documents. The significance of GHG emissions is specifically addressed in *State CEQA Guidelines* Section 15064.4. Section 15064.4 calls for a lead agency to make a "good-faith effort" to "describe, calculate or estimate" GHG emissions in CEQA environmental documents. Section 15064.4 further states that the analysis of GHG impacts should include consideration of (1) the extent to which the project may increase or reduce GHG emissions; (2) whether the project emissions would exceed a locally applicable threshold of significance; and (3) the extent to which the project would comply with "regulations or requirements adopted to implement a statewide, regional, or local plan for the reduction or mitigation of GHG emissions." The guidelines also state that a project's incremental contribution to a cumulative effect is not cumulatively considerable if the project will comply with the requirements in a previously approved plan or mitigation program (including plans or regulations for the reduction of GHG emissions) that provides specific requirements that will avoid or substantially lessen the cumulative

problem within the geographic area in which the project is located (*State CEQA Guidelines* Section 15064(h)(3)).

Senate Bill 375 (SB 375)

SB 375, adopted in 2008, builds on AB 32, SB 375 (Chapter 728, Statutes of 2008) seeks to coordinate land use planning, housing planning, regional transportation planning, and GHG reductions. By coordinating these efforts, it is envisioned that vehicle congestion and travel can be reduced resulting in a corresponding reduction in emissions. SB 375 directed CARB to set regional targets to reduce emissions; regional transportation plans are required to identify how they will meet these targets.

SB 375 has three major components:

- Using the regional transportation planning process to achieve reductions in emissions consistent with AB 32's goals.
- Offering California Environmental Quality Act (CEQA) incentives to encourage projects that are consistent with a regional plan that achieves emissions reductions.
- Coordinating the Regional Housing Needs Allocation (RHNA) process with the regional transportation process while maintaining local authority over land use decisions.

A sustainable communities strategy (SCS) is a required component of the RTP. The SCS is a land use pattern for the region which, in combination with transportation policies and programs, strives to reduce emissions and helps meet CARB's targets for the region. An alternative planning strategy (APS) must be prepared if the SCS is unable to reduce emissions and achieve the emissions reduction targets established by CARB.

Certain transportation planning and programming activities must be consistent with the SCS; however, SB 375 expressly provides that the SCS does not regulate the use of land, and further provides that local land use plans and policies (e.g., general plans) are not required to be consistent with either the RTP or SCS. For the 2018 RTP/SCS cycle, CARB set reduction targets for Tulare County at 5 percent for 2020 and 10 percent for 2035.

Senate Bill 1078, Senate Bill 107, Executive Order S-14-08, and Executive Order S-21-09 (Renewables Portfolio Standard)

On September 12, 2002, Governor Gray Davis signed SB 1078 (Chapter 516, Statutes of 2002) requiring California to generate 20 percent of its electricity from renewable energy by 2017. SB 107 (Chapter 464, Statutes of 2006), signed by the Governor on September 26, 2006 changed the due date for this goal from 2017 to 2010. On November 17, 2008, Governor Arnold Schwarzenegger signed Executive Order S-14-08, which established a Renewables Portfolio Standard goal for California requiring that all retail sellers of

electricity serve 33 percent of their load with renewable energy by 2020. Increased use of renewable energy sources will decrease California's reliance on fossil fuels, reducing emissions of GHGs from the energy sector. In April 2011, SB X1-2 required that all electricity retailers adopt the new RPS goals providing 20 percent renewable sources by the end of 2013, 25 percent by the end of 2016, and 33 percent by the end of 2020. Senate Bill SB 350 of 2015 (Chapter 547, Statutes of 2015) increased the renewable portfolio standard to 50 percent by the year 2030.

Executive Order (EO) S-1-07, the Low Carbon Fuel Standard

On January 18, 2007, EO S-1-07 was issued establishing a statewide goal to reduce at least 10 percent in the carbon intensity of California's transportation fuels by 2020. Regulatory proceedings and implementation of the Low Carbon Fuel Standard have been directed to the California Air Resources Board (ARB). The Low Carbon Fuel Standard has been identified by ARB as a discrete early action item in the *Climate Change Scoping Plan*.[52] CARB expects the Low Carbon Fuel Standard to achieve the minimum 10 percent reduction goal; however, many of the early action items outlined in the *Climate Change Scoping Plan* work in tandem with one another. To avoid the potential for double-counting emission reductions associated with AB 1493 (see previous discussion), the *Climate Change Scoping Plan* has modified the aggregate reduction expected from the Low Carbon Fuel Standard to 9.1 percent.

Executive Order S-13-08

Executive Order S-13-08, signed on November 14, 2008, directs California to develop methods for adapting to climate change impacts through preparation of a statewide plan. In response to this order, the California Natural Resources Agency coordinated with 10 state agencies, multiple scientists, a consulting team, and stakeholders to develop the first statewide, multi-sector adaptation strategy in the country. The resulting report, *2009 California Climate Adaptation Strategy*,[53,54] summarizes the best-known science to assess the vulnerability of the state to climate change impacts, and outlines possible solutions that can be implemented within and across state agencies to promote resiliency. This strategy is the first step in an evolving process to reduce California's vulnerability to climate change impacts.

Adaptation refers to efforts that prepare the state to respond to the impacts of climate change – adjustments in natural or human systems to actual or expected climate changes to minimize harm or take advantage of beneficial opportunities. California's ability to manage its climate risks through adaptation

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52 CARB, *Climate Change Scoping Plan: a framework for change.* December 2008.

53 California Natural Resources Agency, *2009 California Climate Adaption Strategy.* 2009.

54 This report has been updated twice, once in 2014, and once in 2018 to reflect current adaption strategies and incorporate a "Climate Justice" chapter highlighting how equity is woven throughout the entire plan.

depends on a number of critical factors. These include its baseline and projected economic resources, technology, infrastructure, institutional support and effective governance, public awareness, access to the best available scientific information, sustainably managed natural resources, and equity in access to these resources.

California's Energy Efficiency Standards for Residential and Nonresidential Buildings

California established statewide building energy standards following legislative action. The legislation required the standards to:

- be cost effective;
- be based on the building life cycle; and
- include both prescriptive and performance-based approaches.

The standards have been periodically updated as technology and design have evolved. Generally, the standards are updated every three years. As a result of AB 970, passed in the fall of 2000 in response to the state's electricity crisis, an emergency update of the Standards went into effect in June 2001. The Commission then initiated an immediate follow-on proceeding to consider and adopt updated Standards that could not be completed during the emergency proceeding. The 2005 Building Energy Efficiency Standards were adopted in November 2003, took effect October 1, 2005. The latest amendments were made in June 2015 and went into effect on January 1, 2017.

Title 24 of the California Code of Regulations comprises the state Building Standards Code. Part 6 of Title 24 is the California Energy Code, which includes the building energy efficiency standards. The standards include provisions applicable to all buildings, residential and non-residential, which describe requirements for documentation and certificates that the building meets the standards. These provisions include mandatory requirements for efficiency and design of the following types of systems, equipment, and appliances:

- Air conditioning systems
- Heat pumps
- Water chillers
- Gas- and oil-fired boilers
- Cooling equipment
- Water heaters and equipment

- Pool and spa heaters and equipment
- Gas-fired equipment including furnaces and stoves/ovens
- Windows and exterior doors
- Joints and other building structure openings (envelope)
- Insulation and cool roofs
- Lighting control devices

The standards include additional mandatory requirements for space conditioning (cooling and heating), water heating and indoor and outdoor lighting systems and equipment in non-residential, high-rise residential, and hotel or motel buildings.

California Green Building Code & Energy Code

The California Green Building Standards Code (California Code of Regulations, Title 24, Part 11), commonly referred to as the CALGreen Code, is a statewide mandatory construction code that was developed and adopted by the California Building Standards Commission and the California Department of Housing and Community Development in 2008. The purpose of this code is to improve public health, safety and general welfare by enhancing the design and construction of buildings through the use of building concepts having a reduced negative impact or positive environmental impact and encouraging sustainable construction practices including recycling of construction (diversion of 50 percent) and other waste streams.

The California Energy Code (California Code of Regulations, Title 24, Part 6) was created as part of the California Building Standards Code (Title 24 of the California Code of Regulations) by the California Building Standards Commission in 1978 to establish statewide building energy-efficiency standards to reduce California's energy consumption. These standards include provisions applicable to all buildings, residential and nonresidential, which describe requirements for documentation and certificates that the building meets the standards. These provisions include mandatory requirements for efficiency and design of energy systems, including space conditioning (cooling and heating), water heating, indoor and outdoor lighting systems and equipment, and appliances. California's Building Energy Efficiency Standards are updated on an approximately 3-year cycle as technology and methods have evolved. The 2016 Standards, effective January 1, 2017, focus on several key areas to improve the energy efficiency of newly constructed buildings and additions and alterations to existing buildings, and include requirements that will enable both demand reductions during critical peak periods and future solar electric and thermal system installations.

Senate Bill 1 (SB 1)

SB 1 (2006) (Chapter 598, Statutes of 2006) set a goal to install 3,000 megawatts of new solar capacity by 2017, moving the state toward a cleaner energy future and helping lower the cost of solar systems for consumers. The "Million Solar Roofs" Program is a ratepayer-financed incentive program aimed at transforming the market for rooftop solar systems by driving down costs over time. It provides up to $3.3 billion in financial incentives that decline over time.

Assembly Bill 811 (AB 811)

AB 811 (2008) (Chapter 159, Statutes of 2008) authorizes California cities and counties to designate districts within which willing property owners may enter into contractual assessments to finance the installation of renewable energy generation and energy efficiency improvements that are permanently fixed to the property. These financing arrangements would allow property owners to finance renewable generation and energy efficiency improvements through low-interest loans that would be repaid as an item on the property owner's property tax bill.

Executive Order S-13-08

On April 29, 2015, Governor Brown issued Executive Order B-30-15. Therein, the governor directed the following:

- Established a new interim statewide reduction target to reduce GHG emissions to 40 percent below 1990 levels by 2030 (subsequently codified in SB 32).
- Ordered all state agencies with jurisdiction over sources of GHG emissions to implement measures to achieve reductions of GHG emissions to meet the 2030 and 2050 reduction targets.
- Directed CARB to update the Climate Change Scoping Plan to express the 2030 target in terms of million metric tons of CO_2 equivalent.

Senate Bill 350

Known as the Clean Energy and Pollution Reduction Act of 2015, SB 350 (Chapter 547, Statutes of 2015) was approved by Governor Brown on October 7, 2015. SB 350 will (1) increase the standards of the California RPS program by requiring that the amount of electricity generated and sold to retail customers per year from eligible renewable energy resources be increased to 50 percent by December 31, 2030; (2) require the State Energy Resources Conservation and Development Commission to establish annual targets for statewide energy efficiency savings and demand reduction that will achieve a cumulative doubling of statewide energy efficiency savings in electricity and natural gas final end uses of retail customers by January 1, 2030; and (3) provide for the evolution of the Independent System Operator (ISO) into a regional organization;. Among other objectives, the Legislature intends to double the energy

efficiency savings in electricity and natural gas final end uses of retail customers through energy efficiency and conservation.

SB 1383-Short Lived Climate Pollutants

Short-lived climate pollutants (SLCP) SLCPs include black carbon (soot), methane, and fluorinated gases (F-gases). SB 1383 of 2016 (Chapter 395, Statutes of 2016) sets forth legislative direction for control of SLCPs. It requires CARB, no later than January 1, 2018, to approve and begin implementing its SLCP strategy to achieve the following reductions in emissions by 2030 compared to 2013 levels: methane by 40 percent, hydrofluorocarbons by 40 percent, and black carbon (non-forest) by 50 percent. The bill also specifies targets for reducing organic waste in landfills. SB 1383 also requires CARB to adopt regulations to be implemented on or after January 1, 2024 specific to the dairy and livestock industry, requiring a 40 percent reduction in methane emissions below 2013 levels by 2030, if certain conditions are met. Lastly, the bill requires CalRecycle to adopt regulations to take effect on or after January 1, 2022 to achieve specified targets for reducing organic waste in landfills.

4.6.2.4 Regional

San Joaquin Valley Air Pollution Control District

To assist Lead Agencies, project proponents, permit applicants, and interested parties in assessing and reducing project-specific GHG impacts on global climate change, the San Joaquin Valley Air Pollution Control District (SJVAPCD) has adopted the guidance: *Guidance for Valley Land-use Agencies in Addressing GHG Emission Impacts for New Projects under CEQA*[55] and the policy: *District Policy – Addressing GHG Emission Impacts for Stationary Source Projects Under CEQA When Serving as the Lead Agency*.[56] The guidance and policy rely on the use of performance-based standards, otherwise known as Best Performance Standards (BPS) to assess significance of project specific GHG emissions on global climate change during the environmental review process, as required by CEQA.

Use of BPS is a method of streamlining the CEQA process of determining significance and is not a required emission reduction measure. Projects implementing BPS would be determined to have a less than cumulatively significant impact. Otherwise, demonstration of a 29 percent reduction in GHG emissions, from business-as-usual, is required to determine that a project would have a less than cumulatively significant impact. The guidance does not limit a lead agency's authority in establishing its

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55 SJVAPCD, *Guidance for Valley Land-use Agencies in Addressing GHG Emission Impacts for New Projects under CEQA.* December 2009.

56 SJVAPCD, *District Policy – Addressing GHG Emission Impacts for Stationary Source Projects Under CEQA When Serving as the Lead Agency.* December 2009.

own process and guidance for determining significance of project related impacts on global climate change. However, these guidance documents are tailored for new projects and stationary source projects, and the 2018 RTP/SCS would not fit under either of these categories.

Local Climate Action Plans

Three TCAG member jurisdictions have developed climate action plans (CAPs) that set goals and targets on the reduction of GHG emissions, along with policies to help achieve those goals. The cities of Tulare and Visalia, as well as Tulare County have conducted baseline emissions inventories, thereby establishing a reference point for GHG emissions reduction. Baseline and projected 2020 and 2030 GHG emissions from these jurisdictions are shown in **Table 4.6-4, Existing and Projected Emissions Reported in Tulare County Climate Action Plans,** below.

The completed climate action plans address similar issues related to emissions produced by transportation, energy usage, and other operational activities. The types and quantity of emissions produced in the TCAG region vary among jurisdictional boundaries.

For most jurisdictions, transportation and energy usage produce a majority of GHG emissions. Policies observed among climate action plans in the region establish a framework for improved circulation networks and energy conservation. Transportation policies aim to reduce VMT by offering more opportunities for alternative transportation modes, such as bicycling and transit use. In addition, many of the climate action plans frame policies to promote transit-oriented development (TOD). Future residents in these developments will have close access to local transit, in many cases eliminating their need for individual transportation such as an automobile. Jurisdictions include programs to improve energy efficiencies in both old and new buildings and decrease the use of fossil fuels by providing incentives for renewable energy sources.

Table 4.6-4
Existing and Projected Emissions Reported in Tulare County Climate Action Plans

Jurisdiction	Type	Annual Baseline Emissions (MT CO_2E)	Projected 2020 Business-as-Usual Annual Emissions (MT CO_2E)	Emission Reductions Achieved by CAP 2020 (MT CO_2E)	Projected 2030 Business-as-Usual Annual Emissions (MT CO_2E)	Emission Reductions Achieved by CAP 2030 (MT CO_2E)
City of Tulare	Climate Action Plan	2006: 820,291	1,262,252	-452,095	1,835,455	-671,497
City of Visalia	Climate Action Plan	2005: 922,783	1,241,020	-445,841	1,424,556	-821,058
Tulare County[1]	Climate Action Plan	2007: 5,208,060	5,715,297	-1,497,408	6,105,480	N/A

Source: Tulare County, Climate Action Plan, August 2012; City of Tulare, Climate Action Plan, April 2011; City of Visalia, Climate Action Plan, December 2013.
1 In 2017, Tulare County updated their CAP with the Climate Action Plan 2016/2017 Annual Progress Report. According to the report (Table 13), Tulare County is on track to meet every CAP metric. It is important to note that development (housing and commercial units) and subsequently VMT has declined over the past two years, since fiscal year 2015/2016.
N/A = Not Available

4.6.3 ENVIRONMENTAL IMPACTS

4.6.3.1 Thresholds of Significance

The following thresholds for determining the significance of impacts related to GHGs are contained in the environmental checklist form contained in Appendix G of the *State CEQA Guidelines*. Impacts related to GHGs are considered significant if the proposed project would:

- Generate GHG emissions, either directly or indirectly, that may have a significant impact on the environment; or
- Conflict with an applicable plan, policy or regulation adopted for the purpose of reducing the emissions of GHGs.

State CEQA Guidelines Section 15064.4(a) confirms that lead agencies retain the discretion to determine the significance of GHG emissions. The Guidelines advise lead agencies to consider the following factors in determining the significance of GHG emissions: whether the project increases or reduces GHG emissions compared to the existing environmental setting, whether project emissions exceed a threshold of significance identified by the lead agency as appropriate to the project, and the extent to which the project

compiles with regulations or requirements of certain adopted GHG reduction plans. (*State CEQA Guidelines* Section 15064.4(b).) However, fundamentally, the courts recognize that lead agencies are allowed to decide what threshold of significance they will apply to a project.

4.6.3.2 Methodology

The following section summarizes the methodology used to evaluate the impacts of implementation of the Plan on GHG emissions.

Determination of Significance

Analysis of the GHG impacts of the Plan was conducted based on regional-level modeling of on-road emissions[57] and household consumption of energy and associated GHG emissions.[58] In the analysis below, future year emissions are compared to 2005, 2017, and 1990 scenarios.[59]

4.6.3.3 Impacts and Mitigation Measures

Impact GHG-1 **Generate GHG emissions, either directly or indirectly, that may have a significant impact on the environment.**

The 2018 RTP/SCS identifies transportation improvements and projected growth for the TCAG region. Between 2017 and 2042 the County would experience increases in population, households and jobs (see **Section 3.0, Project Description**, and **Section 4.9, Population and Housing**). The Plan focuses development in a compact pattern, which would reduce per capita GHG emissions as compared to existing conditions because compact development generally uses less energy (e.g., multi-family housing units are insulated by each other as compared to single-family units and, therefore, require less heating and cooling) and water (e.g., multi-family units or small lot homes have less landscaping requiring irrigation as compared to large lot single-family homes).

GHG emissions result from direct and indirect sources. Direct emissions include emissions from fuel combustion in vehicles (i.e., autos, trucks, trains, buses, planes, ships, and trains) and natural gas combustion from stationary and area sources. Indirect sources include off-site emissions occurring as a result of electricity and water consumption. Regional GHG emissions are estimated for years 2017 and 2042, based on TCAG's forecasts for employment, housing, and vehicle traffic.

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57 TCAG Model 2018 and EMFAC 14

58 Envision Tomorrow. Envision Tomorrow Online. Available online at: http://envisiontomorrow.org/.

59 1990 emissions estimated by reducing 2005 emissions by 15%. These emissions are used to determine significance under SB 375.

Construction

Construction of both transportation projects and development through 2042 will result in direct and indirect GHG emissions. Construction activities, including worker vehicle trips, transport of materials to and from the construction site, and operation of construction equipment, result in GHG emissions. Construction of individual projects occurs over a relatively short period as compared to the life of a project. Therefore, emissions due to construction activities are often amortized over the life of a project (e.g., 30 years).

Typically, individual project construction characteristics are identified, such as the timing of construction phases and equipment fleet mix. However, due to the scale of construction activity associated with implementation of the Plan, construction would occur continuously throughout the life of the Plan as individual projects are constructed and, therefore, could result in significant emissions. Annual construction-related GHG emissions would vary depending on the number and type of projects being constructed in a given year (which would vary according to the economy), and the type of construction equipment being used, however, this level of data is unavailable for analysis. Nonetheless, it is expected that construction activities would result in annual GHG emissions that represent a small proportion of total annual GHGs from operational sources such as transportation and land use emissions.

Residential and Commercial Energy Use

TCAG used the Envision Tomorrow land use tool[60,61] to estimate per household GHG emissions for existing conditions and the year 2042. Under the proposed Plan, GHG emissions are estimated to be approximately 13.8 ~~MTCO$_2$e/Year~~ tons/year of CO_2 per household in 2042. Existing per household GHG emissions are estimated to be 15.3 ~~MTCO$_2$e/Year~~ tons/year of CO_2 per household. Therefore, the plan would result in a decrease in per capita household GHG emissions compared to existing conditions. Further, as demonstrated in Section 4.12.1 Energy, residential energy use (electricity and natural gas use) would be reduced from 204.8 BTU per year to 148.3 BTU per year. Similarly, total energy use (in BTU per year) would be reduced, so GHG emissions from energy use would also be reduced.

Data is not available for commercial and other potential sources such as agricultural machinery, agricultural production, solid waste collection and disposal, trains, airplanes, stationary sources, and industrial processes. This is due to a lack of information about these sources necessary to quantify

60 Envision Tomorrow. Envision Tomorrow Online. Available online at: http://envisiontomorrow.org/ CO2 Emissions per household

61 The GHG emissions comparison from Envision Tomorrow calculates emissions per household as a factor of household energy use (which varies by development type). As such, the outputs include emissions related to electricity and natural gas but not mobile sources.

emissions. For example, new agricultural sources have unique emissions inventories, and GHG emissions must be calculated using precise information regarding the specific process. No such information exists for future agricultural sources of GHG emissions. However, because of the increase in population, it can be conservatively anticipated an increase in use and emissions most sources beyond existing conditions would occur.

Transportation

Mobile sources are a major source of GHG emissions and they are the primary source of emissions the RTP/SCS is designed to address. Vehicle emissions were modeled by TCAG using the regional transportation model and EMFAC 14. Results are presented in **Table 4.6-5, GHG Total Mobile Source Emissions (2017, 2035, 2042),** below**.**

~~**Table 4.6-5**~~
~~**GHG Total Mobile Source Emissions (2017, 2035, 2042)**~~

~~Source~~	~~Population~~	~~Total Mobile Source Emissions ($MTCO_2e$/Day)~~	~~GHG Per Capita (Pounds/Day of CO_2e)~~
~~2017 Existing Conditions~~	~~471,842~~	~~6,109~~	~~28.54~~
~~2035 RTP/SCS~~	~~568,186~~	~~4,543~~	~~17.63~~
~~2042 RTP/SCS~~	~~604,969~~	~~4,561~~	~~16.62~~

~~Source: Emissions and population (2017, 2035, 2042) data provided by TCAG, 2018.~~

Table 4.6-5
GHG Total Mobile Source Emissions (2017, 2035, 2042)

Source	Population	Total Mobile Source Emissions (Tons/Day of CO_2)	GHG Per Capita (Pounds/Day of CO_2)
2017 Existing Conditions	471,842	6,109	25.89
2035 RTP/SCS	568,186	4,543	15.99
2042 RTP/SCS	604,969	4,561	15.08

Source: Emissions and population (2017, 2035, 2042) data provided by TCAG, 2018.

As shown in **Table 4.6-5**, mobile source GHG emissions countywide would decrease 1,548 ~~$MTCO_2e$~~ tons/year of CO_2 per day in 2042 as compared to 2017. This represents a 25 percent decrease from 2017 to 2042.

Conclusion

Both mobile source emissions and energy and natural gas emission would decrease under the 2018 RTP/SCS, however, construction emissions and total emissions associated with future land use sources would likely increase. Therefore, conservatively, it is assumed that land use GHG emissions increases would be greater than mobile source GHG emission reductions resulting in an increase in GHG emissions greater than existing conditions. Therefore, the 2018 RTP/SCS direct and indirect emissions increases would be significant.

Level of Significance Before Mitigation

Significant.

Mitigation Measures

Implement **MM-AIR-1(a), MM EN-1(a), MM-TR-1(a)** and **MM-TR-1(b).**

MM-GHG-1(a): TCAG shall, through its ongoing outreach and technical assistance programs, work with and encourage local governments to adopt policies and develop practices that lead to GHG emission reductions. These activities shall include, but are not limited to, providing technical assistance and information sharing on developing local Climate Action Plans.

MM-GHG-1(b): Consistent with the provisions of Section 15091 of the *State CEQA Guidelines*, TCAG has identified mitigation measures capable of reducing GHG emissions that are within the jurisdiction and responsibility of local agencies (land use projects). Local agencies should adopt, implement, and update Climate Action Plans consistent with 2017 Scoping Plan and General Plan Guidelines guidance that do the following:

a) Quantify GHG emissions, both existing and projected over a specified period, resulting from activities within each agency's jurisdiction;

b) Establish a level, based on substantial evidence, below which the contribution to GHG emissions from activities covered by the plan would not be cumulatively considerable;

c) Identify and analyze the GHG emissions resulting for specific actions or categories of actions anticipated within their respective jurisdictions;

d) Specify measures or a group of measures, including performance standards, that substantial evidence demonstrates, if implemented on a project-by-project basis, would collectively achieve the specified emissions level;

e) Establish a mechanism to monitor the plan's progress toward achieving that level and to require amendment if the plan is not achieving specified levels; and

f) Be adopted in a public process following environmental review.

CAPs should, when appropriate, incorporate planning and land use measures from the California Attorney General's latest list of example policies to address climate change at both the plan and project level. Specifically, at the plan level, land use plans can and should, when appropriate and feasible, incorporate planning and land use measures from the California Attorney General's latest list of example policies to address climate change (http://ag.ca.gov/globalwarming/pdf/GP_policies.pdf), including, but not limited to policies from that web page such as:

- Smart growth, jobs/housing balance, transit-oriented development, and infill development through land use designations, incentives and fees, zoning, and public private partnerships
- Create transit, bicycle, and pedestrian connections through planning, funding, development requirements, incentives and regional cooperation, and create disincentives for auto use
- Energy and water-efficient buildings and landscaping through ordinances, development fees, incentives, project timing, prioritization, and other implementing tools

MM-GHG-1(c): Consistent with the provisions of Section 15091 of the *State CEQA Guidelines*, TCAG has identified mitigation measures capable of reducing GHG emissions that are within the jurisdiction and responsibility of local agencies (land use projects). Where the Lead Agency has identified that a project has the potential for significant effects, the Lead Agency can and should consider mitigation measures to minimize land use project GHG emissions, including but not limited to those on the Attorney General's list of project-specific mitigation measures available at the following web site: http://ag.ca.gov/globalwarming/pdf/ GW_mitigation_measures.pdf, such as:

- Adopt a comprehensive parking policy that discourages private vehicle use and encourages the use of alternative transportation
- Build or fund a major transit stop within or near development

- Provide public transit incentives such as free or low-cost monthly transit passes to employees, or free ride areas to residents and customers
- Incorporate bicycle lanes, routes and facilities into street systems, new subdivisions, and large developments
- Require amenities for non-motorized transportation, such as secure and convenient bicycle parking
- Additional measures from additional resources listed by the California Attorney General at the following webpage: https://oag.ca.gov/environment/ceqa/measures.

Level of Significance After Mitigation

Because this PEIR evaluates impacts at the programmatic level, all project circumstances are not foreseeable and these mitigation measures may not be feasible or effective for some projects. Therefore, even with implementation of **Mitigation Measures MM-GHG-1(a)** through **MM-GHG-1(c), MM-AIR-1(a)**, and **MM-EN-1(a)**, substantial increases in GHG emissions would remain. Although per capita emissions will be reduced, reductions in total GHG emissions below the 2017 level are not feasible in light of the forecasted increase of 133,127 people in the region by 2042. Thus, this impact would remain significant and unavoidable. No additional feasible mitigation measures are available to reduce significant and unavoidable impacts beyond those identified in this PEIR. It should be noted that the State of California, through its 2017 Scoping Plan, has identified many additional GHG reduction strategies that are the State's responsibility to implement; energy sector emission reductions through the Renewable Portfolio Standard, mobile source emission reductions through the low carbon fuel standard and vehicle fleet electrification, and industrial source emission reductions through the cap-and-trade program.

Impact GHG-2: Conflict with an applicable plan, policy or regulation adopted for the purpose of reducing the emissions of GHGs.

The following evaluates Project consistency with the primary GHG statutes related to transportation and development: SB 375, AB 32 and SB 32, as well as EO S-3-05 and local CAPs.

SB 375

SB 375 requires that local MPOs provide plans to reduce GHG emissions from cars and light duty trucks compared to 2005 levels. The specific reduction targets are determined by CARB. For this RTP/SCS, CARB determined that the 2020 target is a 5 percent reduction from 2005 emissions levels, and the 2035 target is a 10 percent reduction. Implementation of the 2018 RTP/SCS would exceed these GHG reduction targets, providing reductions of 13 percent in 2020 and almost 17 percent in 2035 (**Table 4.5-6, Results of**

Greenhouse Gas Emissions and Vehicle Trips Reductions). Therefore, there is no conflict with SB 375, and this impact is less than significant.

The 2018 RTP/SCS achieves the reductions by a mix of land use strategies, transportation management, and transportation projects. The 2018 RTP/SCS also notes state and regional programs that assist in reaching the reductions targets, such as state funding for transportation management and infrastructure improvement, regional air district programs to replace inefficient or heavily polluting vehicles, regional energy planning, and efficient commuting programs.

Table 4.6-6
Results of Greenhouse Gas Emissions and Vehicle Trips Reductions

Indicators & Measures	2005	2020	2035	2042
Total Population	404,148	488,293	568,186	604,969
Vehicle Miles Traveled (VMT)				
VMT per Weekday	8,705,754	9,274,871	10,441,330	10,988,544
Per Capita VMT SB 375	21.54	18.99	18.38	18.16
Difference between 2005 Base Per Capita VMT (21.54 miles)	0.0%	-11.8%	-14.69%	-15.68%
SB 375 CO_2 Emissions				
Total SB 375 CO_2 Emissions (tons/day)	3,404	3,586	3,992	4,219
Per Capita SB 375 CO_2e Emissions (lbs/day)	18.57	16.19	15.49	15.37
Difference between 2005 Base Per Capita CO_2 (18.57 lbs)	0.0%	-12.8%	-16.6%	-17.2%
SB 375 Targets Through September 30, 2018 (3/22/2018)	0.0%	-5.0%	-10.0%	N/A

Source: TCAG, 2018 RTP/SCS, 2018.

Table 4.6-6
Results of Greenhouse Gas Emissions and Vehicle Trips Reductions

Indicators & Measures	2005	2020	2035	2042
Total Population	404,148	488,293	568,186	604,969
Vehicle Miles Traveled (VMT)				
VMT per Weekday	8,705,754	9,274,871	10,441,330	10,988,544
Per Capita VMT SB 375	21.54	18.99	18.38	18.16
Difference between 2005 Base Per Capita VMT (21.54 miles)	0.0%	-11.8%	-14.69%	-15.68%
SB 375 CO_2 Emissions				
Total SB 375 CO_2 Emissions (tons/day)	3,404	3,586	3,992	4,219
Per Capita SB 375 CO_2e Emissions (lbs/day)	16.84	14.69	14.05	13.95
Difference between 2005 Base Per Capita CO_2 (16.84 lbs)	0.0%	-12.8%	-16.6%	-17.2%
SB 375 Targets Through September 30, 2018 (3/22/2018)	0.0%	-5.0%	-10.0%	N/A

Source: TCAG, 2018 RTP/SCS, 2018.

AB 32

SB 375 was adopted in order to assist the state in meeting AB 32 targets. By meeting SB 375 targets, the 2018 RTP/SCS has successfully fulfilled its responsibilities with regard to AB 32. Furthermore, the 2017 Scoping Plan indicates that the state as a whole is on course to reach the 2020 emissions target.[62] CARB cites the successful implementation of energy efficiency measures and renewable energy requirements as major factors in this progress.[63] It also includes reductions resulting from implementation of SB 375. CARB also describes how the Cap and Trade program provides a firm cap for covered industrial sources, ensuring that the 2020 emission targets are achieved.[64] The 2018 RTP/SCS does not conflict with any of the regulations or programs described by CARB as central to the success of AB 32. Consequently there is no conflict with AB 32, and this impact is less than significant.

Residential and Commercial Development

As noted above, GHG emissions per household would be less under the proposed Plan than under existing conditions.

As discussed above, data is not available for commercial and other potential sources such as agricultural machinery, agricultural production, solid waste collection and disposal, trains, airplanes, stationary

62 California Air Resources Board, *California's 2017 Climate Change Scoping Plan*. November, 2017.

63 Ibid.

64 Ibid.

sources, and industrial processes. This is due to a lack of information about these sources necessary to quantify emissions. However, because of the increase in population, it can be reasonably anticipated that this would result in an increase in use and emissions from these sources beyond existing conditions.

While energy use (electricity and natural gas use) per household would decrease, total energy use from all sectors (i.e., industrial, agricultural, etc.) would likely increase due to the increases in population, the number of new housing units, and jobs (assumed to be associated with an increase in commercial square footage). Therefore, total energy-related GHG emissions, as a result of land uses included in the 2018 RTP/SCS would increase between 2017 and 2042.[65]

Transportation

Table 4.6-5 (above) shows total GHG emissions from all transportation sources (not just cars and light-duty trucks and not following SB 375 rules for GHG emissions accounting) for the years 2017, 2035 and 2042. The results in **Table 4.6-5** show that there will be a net decrease in emissions of approximately 1,548 ~~MTCO$_2$e~~ tons/day of CO_2 ~~per day~~ between 2017 and 2042. GHG emissions ~~per capita~~ would be 25% below 2017 levels by 2042.

SB 32 and EO S-3-05

SB 32 requires a reduction in GHG emissions of 40% below 1990 levels by 2035. To achieve this goal, *California's 2017 Climate Change Scoping Plan* sets per capita targets for both 2030 and 2050. The statewide per capita GHG target for 2030 is no more than 6 MTCO2e, and 2 MTCO2e by 2050.[66] As shown in **Table 4.6-7, Mobile Source Total GHG Emissions**, emissions from transportation sources under the 2018 RTP/SCS would be on track to be consistent with the state's ability to achieve the SB 32 GHG reduction target of 40 percent below 1990 levels by 2030, and the state's ability to achieve the EO S-3-05 GHG reduction target of 80 percent below 1990 levels by 2050. However, other sources of GHG emissions associated with the future land use would also increase (as discussed above). Therefore, the 2018 RTP/SCS would conflict with the State's ability to achieve SB 32 and EO S-3-05 GHG reduction targets, and this would be significant.

65 TCAG 2018 RTP/SCS

66 California Air Resources Board, *California's 2017 Climate Change Scoping Plan*. November, 2017.

~~Table 4.6-7~~
~~Mobile Source Total GHG Emissions~~

~~Source~~	~~Estimated Population~~	~~Total Mobile Source Emissions ($MTCO_2e$/Day)~~	~~Total Mobile Source Emissions ($MTCO_2e$/Year)~~	~~GHG Per Capita (Pounds/Day of CO_2e)~~	~~GHG Per Capita ($MTCO_2e$/Year)~~
~~1990 Conditions~~	~~311,921~~	~~5,535~~	~~2,020,275~~	~~39.12~~	~~6.48~~
~~2005 Conditions~~	~~404,148~~	~~6,512~~	~~2,376,880~~	~~35.52~~	~~5.88~~
~~2017 Existing Conditions~~	~~471,842~~	~~6,109~~	~~2,229,785~~	~~28.54~~	~~4.73~~
~~2035 RTP/SCS~~	~~568,186~~	~~4,543~~	~~1,658,195~~	~~17.63~~	~~2.92~~
~~2042 RTP/SCS~~	~~604,969~~	~~4,561~~	~~1,664,765~~	~~16.62~~	~~2.75~~

~~Note: 1990 emissions estimated as approximately 15% below 2005 emission levels.~~
~~Source: *TCAG, 2018;* US Census Bureau, 2018.~~

Table 4.6-7
Mobile Source Total GHG Emissions

Source	Estimated Population	Total Mobile Source Emissions (Tons/Day of CO_2)	Total Mobile Source Emissions (Tons/Year of CO_2)	GHG Per Capita (Pounds/Day of CO_2)	GHG Per Capita (Tons/Year of CO_2)
1990 Conditions	311,921	5,535	2,020,275	35.50	6.48
2005 Conditions	404,148	6,512	2,376,880	32.22	5.88
2017 Existing Conditions	471,842	6,109	2,229,785	25.89	4.73
2035 RTP/SCS	568,186	4,543	1,658,195	15.99	2.92
2042 RTP/SCS	604,969	4,561	1,664,765	15.08	2.75

Note: 1990 emissions estimated as approximately 15% below 2005 emission levels.
Source: *TCAG, 2018;* US Census Bureau, 2018.

Local Climate Action Plans

Table 4.6-8, **Local Climate Action Plan Consistency Analysis,** demonstrates the project's consistency with the actions and strategies set forth in the Tulare County, City of Visalia, and City of Tulare CAPs. The project would also be consistent with the applicable goals and principles set forth in these GHG

reduction plans. Therefore, the project would be consistent with the GHG reduction related actions and strategies contained in these plans, and this would result in a less than significant impact.

Table 4.6-8
Local Climate Action Plan Consistency Analysis

Agency	Strategy	2018 RTP/SCS Consistency
Tulare County	**Compact Development:** • Higher development densities to shorten travel distances and increase the feasibility of frequent transit service • Incremental development and infill that minimizes travel distances and allows for efficient expansion of pedestrian and bicycle infrastructure, transit services, and road improvements • Farmland and Open Space preservation to focus development in existing communities and hamlets that are more walkable and better served by transit.	**Consistent.** The 2018 RTP/SCS is designed to support communities in developing walkable, bikeable, and transit-ready neighborhoods that work in tandem with motor vehicle facilities for a safe and comprehensive local circulation system for people of all levels of income and various availability of resources. The 2018 RTP/SCS is designed to encourage bicycle usage in Tulare County by providing safe and convenient bike routes and facilities.
Tulare County	**Transit and Pedestrian Oriented and Traditional Neighborhood Design:** • Locate high-density development close to commercial and service destinations that are within walking distance • Provide direct pedestrian connections between uses to minimize walking distances • Locate transit stops and infrastructure near to high-density development to maximize the number of people within walking distance • Provide transit infrastructure such as benches and shelters at locations that maximize accessibility • Construct narrow streets to slow traffic and allow room for pedestrian infrastructure • Traffic calming measures such as roundabouts, and pedestrian bulb outs to improve flow and enhance pedestrian safety • Use a grid street system to provide direct routes to many destinations • Require tree-lined streets with drought tolerant trees to shade pedestrian routes • Storefronts near the street to create an interesting pedestrian orientation • Provide parking lots in the back or in public lots to minimize separation of compatible uses • Allow second story residential mixed use in downtown commercial areas and large mixed-use projects to create a more active pedestrian environment after normal business hours	**Consistent.** The 2018 RTP/SCS is designed to support communities in developing walkable, bikeable, and transit-ready neighborhoods that work in tandem with motor vehicle facilities for a safe and comprehensive local circulation system for people of all levels of income and various availability of resources. The 2018 RTP/SCS is designed to minimize environmental impacts of transportation projects and encourage the coexistence of nature and human circulation needs. The 2018 RTP/SCS is designed to support circulation projects that maintain and improve safety and security. The 2018 RTP/SCS is designed to encourage and support the development of a safe, efficient, effective, and economical public transit system. The 2018 RTP/SCS is designed to support the increased coordination of all transit services in Tulare County. The 2018 RTP/SCS is designed to develop and maintain a connected and multi-modal regional circulation network that is convenient, safe, and efficient. The 2018 RTP/SCS is designed to encourage coordinated development to achieve an improved jobs-housing balance in the regional. This includes encouraging mixed-use developments and encouraging provision of an adequate supply of housing for the region and adequate sites to accommodate business expansion to minimize

Agency	Strategy	2018 RTP/SCS Consistency
		interregional trips and long-distance commuting.
Tulare County	**Pedestrian and Bicycle Infrastructure** • Provide sidewalks and pedestrian paths that connect uses that would attract walkers • Provide safe, well-connected bicycle paths and lanes that encourage bicycle travel • Secure bicycle parking for employment sites to increase convenience for cyclists • Bike racks for commercial development to provide security for bikes during shopping trips.	**Consistent.** The 2018 RTP/SCS is designed to support communities in developing walkable, bikeable, and transit-ready neighborhoods that work in tandem with motor vehicle facilities for a safe and comprehensive local circulation system for people of all levels of income and various availability of resources. The 2018 RTP/SCS is designed to encourage bicycle usage in Tulare County by providing safe and convenient bike routes and facilities. The 2018 RTP/SCS is designed to develop and maintain a connected and multi-modal regional circulation network that is convenient, safe, and efficient.
Tulare County	**Transit Infrastructure and Support Policies and Measures** • Provide a wide variety public transportation options that reduce vehicle trips and miles traveled such as transit and rail service • Coordinate transit service provided by various transit agencies in the County to make service as convenient as possible for potential riders • Provide quality transit and rail facilities and equipment that will provide system users with reasonable travel times and comfort • Support a variety of rail options including existing Amtrak services and potential high speed rail that will provide competitive travel times and costs compared to flying and driving • Preserve rail corridors for future use as light rail or trail corridors	**Consistent.** The 2018 RTP/SCS is designed to support communities in developing walkable, bikeable, and transit-ready neighborhoods that work in tandem with motor vehicle facilities for a safe and comprehensive local circulation system for people of all levels of income and various availability of resources. The 2018 RTP/SCS is designed to encourage and support the development of a safe, efficient, effective, and economical public transit system. The 2018 RTP/SCS is designed to develop and maintain a connected and multi-modal regional circulation network that is convenient, safe, and efficient. The 2018 RTP/SCS is designed to develop an efficient regional road and circulation system that provides maximum achievable mobility and accessibility for vehicles, bicycles, pedestrians, and public transportation. The 2018 RTP/SCS is designed to develop an efficient regional road and circulation system that provides maximum achievable mobility and accessibility for vehicles, bicycles, pedestrians, and public transportation.
Tulare County	**Transportation Management Programs** • Transportation Demand Management programs encourage employees to use alternative modes of transportation for commute trips through incentives and information exchange regarding available options • Transportation Management Associations provide transportation services and expertise to multiple employers that may be too small individually to provide effective services. • Ridesharing and matching programs help increase carpool participation by identifying and coordinating potential participants	**Consistent.** The 2018 RTP/SCS is designed to promote employer and personal strategies that will encourage the reduction of vehicle miles traveled. This includes encouraging employers to utilize policies such as flex hours and telecommuting, and supporting outreach programs that encourage carpooling/rideshare, transit use, bicycling, walking, and vanpools as alternatives to the single occupant vehicle. The 2018 RTP/SCS plans for and implements coordination of land use and alternative modes of transportation that would reduce vehicle miles traveled by providing residents transportation options in multiple modes. This includes supporting coordinated alternative modes of transportation

Agency	Strategy	2018 RTP/SCS Consistency
		including transit, pedestrian, bicycle, and rideshare and vanpool programs.
Tulare County	**Building Energy Efficiency Measures** • New buildings to provide energy conserving features such as increased insulation in walls and roofs, cool light colored roofs, high efficiency window • Use high efficiency heating, ventilation, and cooling equipment in buildings • Use passive solar designs and day-lighting to reduce heating and lighting demands • Landscaping the shades buildings or parking lots to reduce ambient temperatures around buildings • Provide solar ready roofs that provide adequate area to install photovoltaic panels and avoid shading of panels with roof structures and landscaping • Install solar water heating systems • Promote retrofits of older less efficient buildings with energy conserving devices	**Not applicable.** The 2018 RTP/SCS focuses on transportation and land use policy. It does not provide construction policy.
Tulare County	**Water Conservation Measures** • Expand groundwater recharge to capture runoff and water available during wet years. • Use reclaimed water from tertiary plants for irrigation in appropriate locations. • Use native and drought tolerant landscaping. • Require the installation of low-flow fixtures. • Smart irrigation technologies that apply water based on plant requirements and that direct water flow only where needed.	**Consistent.** The 2018 RTP/SCS is designed to develop a sustainable regional road and circulation system. This includes developing projects that are valuable to the regional road miles traveled, improve level of service, contribute to a reduction in air quality pollutants and greenhouse gases, conserve agricultural land, habitat, groundwater recharge areas, and create safe travel corridors. However, as noted above, the 2018 RTP/SCS does not provide construction or renovation policies.
Tulare County	**Solid Waste Reduction and Recycling Measures** • Encourage the use of recycled materials in its own operations and purchases. • Provide sites and publicity for recycling events. • Work with recycling contractors on innovative programs to encourage residents and businesses to take advantage of recycling services.	**Not applicable.** The 2018 RTP/SCS focuses on transportation and land use policy. It does not provide recycling policy.
Tulare County	**Agricultural Measures** • Encourage energy production and alternative energy projects with assistance in identifying appropriate sites and with the permit process. • Build on its advanced agricultural technology base to provide conditions supportive for developing a strong biotech and biofuels industry.	**Not applicable.** The 2018 RTP/SCS focuses on transportation and land use policy. It does not provide agricultural siting, permitting, or technology policy.
City of Visalia	**Energy Measures** • Solar photovoltaic – Institutional Barrier	**Not applicable.** The 2018 RTP/SCS focuses on transportation and land use policy. It does not

Agency	Strategy	2018 RTP/SCS Consistency
	Removal • Increase in Solar Photovoltaic Installations • Energy Upgrade California • Southern California Edison Small Business Direct Install Program • Southern California Gas Weatherization Program • Community Service Employment Training Weatherization Program • Urban Forestry • Compact Fluorescent Light	provide construction, renovation, or utility policy.
City of Visalia	**Transportation Measures** • Sequoia National Park Shuttle Service Bus • Bicycle Path Plan • Vi-Cycle Program • Dare to Spare Challenge • Increase Transit Ridership • Traffic Light Synchronization	**Consistent.** The 2018 RTP/SCS is designed to support communities in developing walkable, bikeable, and transit-ready neighborhoods that work in tandem with motor vehicle facilities for a safe and comprehensive local circulation system for people of all levels of income and various availability of resources. The 2018 RTP/SCS is designed to encourage and support the development of a safe, efficient, effective, and economical public transit system. The 2018 RTP/SCS is designed to develop and maintain a connected and multi-modal regional circulation network that is convenient, safe, and efficient. The 2018 RTP/SCS is designed to develop an efficient regional road and circulation system that provides maximum achievable mobility and accessibility for vehicles, bicycles, pedestrians, and public transportation. The 2018 RTP/SCS is designed to encourage bicycle usage in Tulare County by providing safe and convenient bike routes and facilities. The 2018 RTP/SCS is designed to minimize environmental impacts of transportation projects and encourage the coexistence of nature and human circulation needs. The 2018 RTP/SCS is designed to support circulation projects that maintain and improve safety and security. The 2018 RTP/SCS is designed to support the increased coordination of all transit services in Tulare County.
City of Visalia	**Waste and Resource Conservation** • Waste-to-Energy Program • Construction and Demolition Debris Recycling Program • Yard Waste/Food Scrap Composting Program	**Not applicable.** The 2018 RTP/SCS focuses on transportation and land use policy. It does not provide waste and recycling policy.
City of Tulare	**Increase energy efficiency and conservation**	**Not applicable.** The 2018 RTP/SCS focuses on transportation and land use policy. It does not provide construction, renovation, or utility policy.

Agency	Strategy	2018 RTP/SCS Consistency
City of Tulare	**Promote and support renewable energy generation and use**	**Not applicable.** The 2018 RTP/SCS focuses on transportation and land use policy. It does not provide construction, renovation, or utility policy.
City of Tulare	**Shift single-occupancy vehicle trips to alternative modes**	**Consistent.** The 2018 RTP/SCS is designed to support communities in developing walkable, bikeable, and transit-ready neighborhoods that work in tandem with motor vehicle facilities for a safe and comprehensive local circulation system for people of all levels of income and various availability of resources. The 2018 RTP/SCS is designed to encourage and support the development of a safe, efficient, effective, and economical public transit system. The 2018 RTP/SCS is designed to develop and maintain a connected and multi-modal regional circulation network that is convenient, safe, and efficient. The 2018 RTP/SCS is designed to develop an efficient regional road and circulation system that provides maximum achievable mobility and accessibility for vehicles, bicycles, pedestrians, and public transportation. The 2018 RTP/SCS is designed to encourage bicycle usage in Tulare County by providing safe and convenient bike routes and facilities. The 2018 RTP/SCS is designed to minimize environmental impacts of transportation projects and encourage the coexistence of nature and human circulation needs. The 2018 RTP/SCS is designed to support circulation projects that maintain and improve safety and security. The 2018 RTP/SCS is designed to support the increased coordination of all transit services in Tulare County. The 2018 RTP/SCS is designed to promote employer and personal strategies that will encourage the reduction of vehicle miles traveled. This includes encouraging employers to utilize policies such as flex hours and telecommuting, and supporting outreach programs that encourage carpooling/rideshare, transit use, bicycling, walking, and vanpools as alternatives to the single occupant vehicle. The 2018 RTP/SCS plans for and implements coordination of land use and alternative modes of transportation that would reduce vehicle miles traveled by providing residents transportation options in multiple modes. This includes supporting coordinated alternative modes of transportation including transit, pedestrian, bicycle, and rideshare and vanpool programs.

Agency	Strategy	2018 RTP/SCS Consistency
City of Tulare	**Reduce emissions from vehicles**	**Consistent.** The 2018 RTP/SCS is designed to support communities in developing walkable, bikeable, and transit-ready neighborhoods that work in tandem with motor vehicle facilities for a safe and comprehensive local circulation system for people of all levels of income and various availability of resources. The 2018 RTP/SCS is designed to encourage coordinated development to achieve an improved jobs-housing balance in the regional. This includes encouraging mixed-use developments and encouraging provision of an adequate supply of housing for the region and adequate sites to accommodate business expansion to minimize interregional trips and long-distance commuting. The 2018 RTP/SCS plans for and implements coordination of land use and alternative modes of transportation that would reduce vehicle miles traveled by providing residents transportation options in multiple modes. This includes supporting coordinated alternative modes of transportation including transit, pedestrian, bicycle, and rideshare and vanpool programs.

Source: Tulare County, *Climate Action Plan,* February 2010; City of Visalia, *Climate Action Plan,* December 2013; City of Tulare, *Climate Action Plan*, April 2011.

Level of Significance Before Mitigation

SB 375 and AB 32: Less than significant.

SB 32 and EO S-3-05: Significant.

Local CAPs: Less than significant.

Mitigation Measures

Implement **MM-GHG-1(a)** through **MM-GHG-1(c), MM EN-1(a)**, **MM-AIR-1(a)** and **MM-TR-1(a)**.

Level of Significance After Mitigation

Because this PEIR evaluates impacts at the programmatic level, all project circumstances are not foreseeable and these mitigation measures may not be feasible or effective for some projects. Therefore, even with implementation of **Mitigation Measures MM-GHG-1(a)** through **MM-GHG-1(c)**, substantial increases in GHG emissions would remain. Reductions in GHG emissions below the 2017 level and

achieving SB 32 and EO S-3-05 goals are not reasonably foreseeable in light of the forecasted increase of 133,127 people in the region by 2042 and available data on existing and future emissions and emission rates. Thus, this impact is considered significant and unavoidable. No additional feasible mitigation measures are available to reduce significant and unavoidable impacts beyond those identified in this PEIR. It should be noted that the State of California, through its 2017 Scoping Plan, has identified many additional GHG reduction strategies that are the responsibility of other sectors/parties to implement; energy sector emission reductions through the renewable portfolio standard, mobile source emission reductions through the low carbon fuel standard and vehicle fleet electrification, and industrial source emission reductions through the cap-and-trade program.

4.6.4 CUMULATIVE EFFECTS

GHG emissions analyses are by nature cumulative analyses as impacts from GHG emissions are global. In its notice of proposed amendments to the *State CEQA Guidelines* pertaining to GHG analysis, the California Natural Resources Agency (CNRA) noted that the impacts of GHG emissions should be considered in the context of a cumulative impact, rather than a project impact.[67] Because climate change impacts are cumulative in nature, typically a single project like the 2018 RTP/SCS would not result in emissions so large that project-level impacts alone would be significant. A single project's GHG emissions are small relative to total global or statewide GHG emissions. Thus, the assessment of significance above is also based on a determination of whether the GHG emissions from the 2018 RTP/SCS represent a cumulatively considerable contribution to GHG impacts.

67 http://resources.ca.gov/ceqa/docs/Notice_of_Proposed_Action.pdf, accessed April 16, 2008.

Chapter 4: Revised Chapter 5: Alternatives Section

5.0 ALTERNATIVES

This chapter sets forth alternatives to the 2018 RTP/SCS and provides an analysis of each alternative and a comparison of each alternative 's impacts to the proposed Project's impacts. Key provisions of the *State CEQA Guidelines* Section 15126.6 pertaining to an EIR alternatives analysis are summarized below.

- An EIR shall describe a range of reasonable alternatives to the project, or the location of the project, which would feasibly attain most of the basic objectives of the project but would avoid or substantially lessen any of the significant effects of the project, and evaluate the comparative merits of the alternatives.

- An EIR need not consider any conceivable alternative to a project. Rather, it must consider a reasonable range of potentially feasible alternatives that will foster informed decision-making and public participation. An EIR is not required to consider alternatives which are infeasible.

- Because an EIR must identify ways to mitigate or avoid the significant effects that a project may have on the environment, the discussion of alternatives shall focus on alternatives to the project or its location which are capable of avoiding or substantially lessening any significant effects of the project, even if these alternatives would impede to some degree the attainment of the project objectives, or would be more costly.

- The range of alternatives required in an EIR is governed by a "rule of reason" That requires the EIR to set forth only those alternatives necessary to permit a reasoned choice.

- The No Project Alternative should be evaluated along with its impacts to allow decision makers to compare the impacts of approving the proposed project with the impacts of not approving the proposed project. The No Project Alternative analysis shall discuss the existing conditions at the time the notice of preparation is published, as well as what would reasonably be expected to occur in the foreseeable future if the project were not approved, based on current plans and consistent with available infrastructure and community services.

- An EIR need not consider an alternative whose effects cannot be reasonably ascertained and whose implementation is remote and speculative.

Among the factors that may be taken into account when addressing the feasibility of alternatives (as described in *State CEQA Guidelines* Section 15126.6[f][1]) are environmental impacts, site suitability, economic viability, availability of infrastructure, general plan consistency, regulatory limitations, and jurisdictional boundaries.

An EIR must briefly describe the rationale for selection and rejection of alternatives. The lead agency may make an initial determination as to which alternatives are feasible, and, therefore, merit in-depth consideration. Alternatives may be eliminated from detailed consideration in the EIR if they fail to meet project objectives, are infeasible, or do not avoid any significant environmental effects.

5.1 PROJECT IMPACTS AND OBJECTIVES

5.1.1 Project Impacts

As described in **Section 4.0** of this PEIR, implementation of the 2018 RTP/SCS would result in significant and unavoidable impacts to the following:

Aesthetics: Implementation of the 2018 RTP/SCS would have a substantial adverse effect on a scenic vista (Impact AES-1) and would impair views of scenic resources such as mountains, rivers or significant manmade structures as seen from existing transportation facilities or other key public vantage points in Tulare County and alter the appearance of designated scenic resources along or near a state or County designated scenic highway or vista point (Impact AES-2). In addition, construction and implementation of the projects associated with the 2018 RTP/SCS could create significant contrasts with the visual character of the existing landscape setting (Impact AES-3), as well as create a new source of substantial light or glare, which could affect day or nighttime views (Impact AES-4). The 2018 RTP/SCS's contribution to such impacts would also be cumulatively considerable.

Agricultural Resources: Implementation of the projects and land use strategies in the 2018 RTP/SCS would result in the conversion of prime, unique farmland or farmland of statewide importance to non-agricultural uses, either directly (Impact AG-1) or through other changes in the existing environment (impact AG-4). Additionally, the iimplementation of the projects and land use strategies in the 2018 RTP/SCS would result in development of agricultural lands (with active Williamson Act contracts) (Impact AG-2), and impact forest lands (Impact AG-3) The 2018 RTP/SCS's contribution to such impacts would also be cumulatively considerable.

Air Quality: Implementation of the 2018 RTP/SCS would result in a substantial increase in short-term emissions of criteria pollutants (construction of transportation and land use projects and) (Impact AIR-1), as well as an increase (greater than current emission levels) in projected long-term emissions of toxic air contaminants (diesel particulate matter from heavy duty trucks and other emissions from industrial activities);localized concentrations of toxic air contaminants at sensitive receptors (short term and long term) could be greater than existing conditions. (Impact AIR-2). The 2018 RTP/SCS's contribution to such impacts would also be cumulatively considerable.

Biological Resources: Implementation of the 2018 RTP/SCS would have a substantial adverse effect on sensitive and special status wildlife and plant species (Impact BIO-1). It would also have a substantial adverse effect on riparian habitat and other sensitive natural communities (Impact BIO-2), and on federally-protected wetlands (Impact BIO-3), as well as on wildlife migration and migratory corridors (Impact BIO-4). Additionally, implementation of the 2018 RTP/SCS would conflict with local plans,

policies, (Impact BIO-5), and provisions of an HCP or NCCP (Impact BIO-6). The 2018 RTP/SCS's contribution to such impacts would also be cumulatively considerable.

Cultural Resources: The Plan would result in the consumption of 8,884 acres of vacant land and focuses much of the growth in urban areas. The focused growth in urban areas could lead to significant impacts on historic structures (Impact CR-1). The consumption of undeveloped land would result in a significant risk of uncovering previously undisturbed archeological (Impact CR-2) and paleontological resources (Impact CR-3) resources, as well as human remains (Impact CR-4) and tribal cultural resources (Impacts TCR-1 and TCR-2). The 2018 RTP/SCS's contribution to such impacts would also be cumulatively considerable.

Greenhouse Gas Emissions: Implementation of the 2018 RTP/SCS would directly and indirectly causes increases in GHG emissions over existing levels (Impact GHG-1), and would conflict with the State's ability to achieve emission reductions targets set by SB 32 and EO-S-3-05 (Impact GHG-2). The 2018 RTP/SCS's contribution to such impacts would also be cumulatively considerable. .

Land Use: Implementation of the projects and land use pattern in the 2018 RTP/SCS could result in inconsistencies with currently applicable adopted local land use plans and policies including general plans, specific plans, or zoning ordinances Impact LU-1). Projects associated with the Plan have the potential to disrupt or divide established communities (Impact LU-2) and conflict with HCPs or NCCPs (Impact LU-3). The 2018 RTP/SCS's contribution to such impacts would also be cumulatively considerable.

Noise: Projects associated with the Plan could expose persons or generate noise in levels in excess of standards established in the local general plan or noise ordinance (Impact NOISE-1), result in substantial temporary or periodic increases in ambient noise levels above existing levels (Impact NOISE-2), or result in a substantial permanent increase in ambient noise levels (Impact NOISE-3). The Plan also would expose people to or generate excessive groundborne vibration (Impact NOISE-4). The 2018 RTP/SCS's contribution to such impacts would also be cumulatively considerable.

Population, Housing and Employment: The transportation investments and land use patterns in the 2018 RTP/SCS would foster economic and household growth and would remove some obstacles to growth in some parts of the region (Impact POP-1). The 2018 RTP/SCS would also require the acquisition of rights-of-way that could displace existing homes or businesses (Impact POP-2). The 2018 RTP/SCS's contribution to such impacts would also be cumulatively considerable.

Public Services: Existing parks and recreational facilities and services would become overextended due to projected growth during the lifetime of the 2018 RTP/SCS resulting in substantial physical

deterioration (Impact REC-2). The 2018 RTP/SCS's contribution to such impacts would also be cumulatively considerable.

Transportation: Implementation of projects included in the 2018 RTP/SCS would substantially increase total daily VMT in 2042 compared to current daily VMT (Impact TR-1). The 2018 RTP/SCS would increase congestion, and thus the 2018 RTP/SCS has the potential to conflict with the CMP (Impact TR-2). The 2018 RTP/SCS's contribution to such impacts would also be cumulatively considerable.

Utilities:

- Energy: The 2018 RTP/SCS would result in the use of substantial amounts of electricity and natural gas, thereby requiring the construction of new facilities and new sources of energy or major improvements to local infrastructure (Impact ENERGY-2). The 2018 RTP/SCS's contribution to such impacts would also be cumulatively considerable.

- Wastewater: Implementation of the 2018 RTP/SCS would increase population which could result in exceeding the capacity of the existing wastewater treatment systems resulting in the need for new or expanded infrastructure (Impacts WW-2 and WW-3). The 2018 RTP/SCS's contribution to such impacts would also be cumulatively considerable.

- Solid waste: Implementation of the 2018 RTP/SCS could result in an increase in the amount of solid waste that could exceed the region's available landfill capacity to handle and dispose of the waste (Impact SW-2). The 2018 RTP/SCS's contribution to such impacts would also be cumulatively considerable.

Water Supply and Hydrology: Implementation of the 2018 RTP/SCS would degrade local surface water quality due to increased runoff from transportation and development projects, potentially resulting in violations of water quality standards or waste discharge requirements (Impact W-1). New development could substantially deplete existing groundwater supplies, and increased impervious surfaces would reduce groundwater infiltration, reducing recharge and potentially affecting aquifer volume (Impact W-2). The Plan would contribute to the conversion of undeveloped land to urban areas, substantially altering drainage patterns, including potentially altering stream courses such that substantial erosion or siltation could occur (Impact W-3). Substantially alterations of existing drainage patterns, including alteration of the course of a stream or river, could result in flooding (Impact W-4). Also, the 2018 RTP/SCS would create or contribute substantial runoff water that could exceed the capacity of existing or planned stormwater drainage systems; in addition, this runoff could include substantial pollution (Impact W-5). The 2018 RTP/SCS could otherwise degrade water quality as a result of a variety of activities including agricultural, industrial and urban runoff (Impact W-6). A portion of the transportation projects and land use developments under the 2018 RTP/SCS could take place within 100-year flood hazard areas; therefore the 2018 RTP/SCS could result in housing being placed within a 100-year flood hazard area (Impact W-7) or result other structures that could impede or redirect flows (Impact

W-8). In addition, the increased urbanization would contribute to an increased demand for water supply, requiring new or expanded entitlements (Impact W-9). The 2018 RTP/SCS's contribution to such water supply and hydrology impacts would also be cumulatively considerable.

5.1.2 Project Objectives

The objectives of the 2018 RTP/SCS are as follows:[1]

- Provide an efficient, integrated, multi-modal transportation system for the movement of people and goods that enhances the physical, economic, and social environment in the Tulare county region
- System Performance: Develop an efficient, maintained, and safe circulation network that maximizes circulation, longevity, and fiscal responsibility while minimizing environmental impacts.
- Transit: Provide a safe, secure, coordinated and efficient public transit system that can reasonably meet the needs of residents.
- Aviation: Support development of a regional system of airports that meets the air commerce and general aviation needs of the county.
- Rail: Promote safe, economical, convenient rail systems and schedules that meet the needs of passenger and freight services in the region.
- Goods Movement: Provide a transportation system that efficiently and effectively transports goods to, from, within, and through Tulare County.
- Active Transportation: Improve, enhance, and expand the region's bicycle and pedestrian systems and connectivity to those systems, while keeping them safe and convenient.
- Regional Roads and Corridors: Preserve and enhance regional transportation roads and corridors.
- Air Quality and Greenhouse Gases: Promote the improvement of air quality and GHG reductions through congestion management, coordination of land use, housing, and transportation systems, provision of alternative modes of transportation, and provision of incentives that reduce vehicle miles traveled.
- Public Health: Promote public health in the region by providing opportunities for residents to bicycle and walk to destinations such as home, work, school, medical facilities, and commercial and service businesses.
- TSM Strategies, TDM Measures, TCMS, and ITS Programs: Improve transportation mobility and operations by improving and utilizing TSM strategies, TDM measures, TCMS and ITS programs.
- Environmental Justice: Ensure that transportation investments do not discriminate on the basis of race, color, national origin, sex, age or disability.

[1] TCAG 2018 RTP/SCS Goals and Objectives

- Emerging Technologies: Support the development and implementation of emerging technologies in the surface transportation system.
- SCS: Develop an integrated land use plan that meets CARB targets.

A feasible alternative must meet most of the basic project objectives.

5.2 ALTERNATIVES TO THE PROPOSED PROJECT

The *State CEQA Guidelines* state that an EIR should identify any alternatives that were considered by the lead agency but were rejected as infeasible during the scoping process and briefly explain the reasons underlying the lead agency's determination. Among the factors that may be used to eliminate alternatives from detailed consideration in an EIR are (i) failure to meet most of the basic project objectives, (ii), infeasibility, or (iii) inability to avoid significant environmental impacts. (*State CEQA Guidelines* Section 15126.6(a)(c).) For this EIR, there were no alternatives that were considered by TCAG and rejected as infeasible during the scoping process.

5.2.1 Alternative 1 – No Project

The No Project Alternative is required by Section 15126.6(e)(2) of the *State CEQA Guidelines* and assumes that the 2018 RTP/SCS would not be implemented. The No Project Alternative allows decision-makers to compare the impacts of approving the proposed Project with the impacts of not approving the proposed Project. However, "no project" does not mean no development. The No Project Alternative includes "what would be reasonably expected to occur if the Project were not approved, based on current plans and consistent with available infrastructure and community services."[2] For purposes of this PEIR, the No Project Alternative includes only those transportation projects that are included in the first year of the constrained project list included in the 2014 RTP/SCS and/or transportation improvement program (TIP), or have completed environmental review by January 2018. The growth scenario included in the No Project Alternative is based on local general plans and assumes a land use pattern that is more dispersed than the Blueprint (or the Old Plan) along the lines of past trends.

5.2.2 Alternative 2 –Trend Alternative

The Trend Alternative includes a land use forecast based on designations from existing local agency general plans and linear trends in growth on a sub-regional basis. This means that the projected pattern of development will be generally consistent with the development pattern seen currently. (Local general plans now include policies that will move away from the Trend Alternative to some extent -- away from a

2 *State CEQA Guidelines* § 15126.6[e][2]

pure extrapolation of current development types and densities. This is especially true of the most recently updated plans (Porterville, 2007; Tulare County, 2012; Tulare, Visalia, 2014).) This alternative includes a modified transportation network with fewer investments (no new transit) as compared to the 2018 RTP/SCS and greater focus on maintenance of the existing network.

5.2.3 Alternative 3 – Old Plan Alternative

The Old Plan Alternative is a second type of "no project alternative," based on implementation of the current 2014 RTP. The Old Plan Alternative is an update of the adopted 2014 RTP reflecting the most recent growth distribution and transportation planning decisions and assumptions, extrapolated from the 2040 horizon year in the 2014 RTP/SCS out to 2042, the horizon year of the 2018 RTP/SCS. This Old Plan alternative includes many of the same development pattern strategies included within the 2018 SCS, and includes all of the transportation projects in the 2014 RTP.

5.2.4 Alternative 4 – Blueprint Plus

The Blueprint Plus Alternative was requested by the RTP Roundtable[3] in 2013 to explore the ramifications of a change in future development patterns more pronounced than that envisioned by the Regional Blueprint. Blueprint Plus has an objective of overall density of new development five percent higher than Blueprint and a maximum feasible emphasis on transit and active transportation modes.

5.2.5 Summary Comparison

A summary comparison of impacts of the 2018 RTP/SCS and alternatives is included in **Table 5.0-1, Comparison of Impact Significance – Plan vs. Alternatives**. Please note that this table and the following text compare all impacts of the 2018 RTP/SCS analyzed in Chapter 4 to impacts of the alternatives, including less than significant Plan impacts. This table does not separately compare cumulative impacts of the 2018 RTP/SCS and alternatives, but the alternatives would have similar incremental contributions to cumulative impacts (i.e., less, similar, or greater).

3 The RTP Roundtable Committee includes a range of important stakeholders who guide the RTP process and made recommendations to the TCAG Governing Board with respect to RTP/SCS policies and ultimately the preferred Blueprint Scenario.

Table 5.0-1
Comparison of Impact Significance – Plan vs. Alternatives

Impact	Project Impact	Alternative 1 – No Project Alternative	Alternative 2 – Trend Alternative	Alternative 3 – Old Plan	Alternative 4 – Blueprint Plus
Aesthetics					
AES -1 Scenic Vistas	Significant	Greater (significant)	Less (significant)	Similar (significant)	Similar (significant)
AES-2 Scenic Resources	Significant	Greater (significant)	Less (significant)	Similar (significant)	Similar (significant)
AES-3 Visual Character	Significant	Greater (significant)	Greater (significant)	Greater (significant)	Greater (significant)
AES-4 Light and Glare	Significant	Greater (significant)	Less (significant)	Greater (significant)	Similar (significant)
Agriculture and Forest Lands					
AG-1 Convert Farmland	Significant	Greater (significant)	Greater (significant)	Less (significant)	Less (significant)
AG-2 Conflict with Land Use/Williamson Act	Significant	Greater (significant)	Less (significant)	Similar (significant)	Less (significant)
AG-3 Convert Forest land	Significant	Greater (less than significant)	Similar (less than significant)	Similar (less than significant	Less (significant)
AG-4 Changes in Environment Convert Farmland	Significant	Greater (significant)	Greater (significant)	Greater (significant)	Less (significant)
Air Quality					
AIR-1 Long Term Criteria Pollutants	Less than Significant	Greater (Less than Significant)	Greater (Less than Significant)	Greater (Less than Significant)	Greater (less than significant)
AIR-1 Short Term Criteria Pollutants	Significant	Less (significant)	Less (significant)	Less (significant)	Similar (significant)
AIR-2 Long Term Regional Air Toxics	Significant	Similar (significant)	Less (significant)	Greater (significant)	Similar (significant)
AIR-2 Short Term Air Toxics	Significant	Less (significant)	Less (significant)	Less (significant)	Similar (significant)
AIR-3 Consistent with Air Quality Plans	Less than Significant	Similar (less than significant)	Similar (less than significant)	Similar (less than significant)	Similar (less than significant)
Biological Resources					
BIO-1 Sensitive Species	Significant	Greater (significant)	Greater (significant)	Similar (significant)	Similar (significant)
BIO-2 Riparian Communities	Significant	Greater (significant)	Greater (significant)	Similar (significant)	Less (significant)
BIO-3 Wetlands	Significant	Greater (significant)	Greater (significant)	Similar (significant)	Less (significant)
BIO-4 Migratory Species	Significant	Similar (significant)	Greater (significant)	Similar (significant)	Similar (significant)
BIO-5 Local policies	Significant	Greater (significant)	Greater (significant)	Similar (significant)	Similar (significant)
BIO-6 HCPs	Significant	Greater (significant)	Greater (significant)	Similar (significant)	Less (significant)
Cultural Resources					
CR-1 Historical Resources	Significant	Less (significant)	Less (significant)	Less (significant)	Greater (significant)

Impact	Project Impact	Alternative 1 – No Project Alternative	Alternative 2 – Trend Alternative	Alternative 3 – Old Plan	Alternative 4 – Blueprint Plus
CR-2 Archeological Resources	Significant	Greater (significant)	Greater (significant)	Greater (significant)	Less (significant)
CR-3 Paleontological Resources	Significant	Greater (significant)	Greater (significant)	Greater (significant)	Less (significant)
CR-4 Disturb Human Remains	Significant	Greater (significant)	Greater (significant)	Greater (significant)	Less (significant)
TCR1/TCR-2 Tribal Cultural Resources	Significant	Greater (significant)	Greater (significant)	Greater (significant)	Less (significant)
Greenhouse Gas Emissions					
GHG-1 Significantly Increase GHG Emissions	Significant	Greater (significant)	Greater (significant)	Greater (significant)	Less (significant)
GHG-2 Conflict with Applicable Plans, Policies, and Regulations	Significant	Greater (significant)	Greater (significant)	Greater (significant)	Less (significant)
Land Use					
LU-1 Conflict with Plans	Significant	Less (significant)	Greater (significant)	Similar (significant)	Greater (significant)
LU-2 Divide a Community	Significant	Less (significant)	Greater (significant)	Similar (significant)	Similar (significant)
LU-3 Conflict with HCPs (BIO-6)	Significant	Greater (significant)	Greater (significant)	Similar (significant)	Less (significant)
Noise					
NOISE -1 Expose Persons to Noise Levels in Excess of Established Standards	Significant	Similar (significant)	Similar (significant)	Similar (significant)	Greater (significant)
NOISE-2 Substantial Temporary or Periodic Increase in Noise	Significant	Less (significant)	Less (significant)	Less (significant)	Greater (significant)
NOISE-3 Substantial Permanent Increase in Noise	Significant	Similar (significant)	Similar (significant)	Similar (significant)	Greater (significant)
NOISE-4 Groundborne Noise and Vibration	Significant	Similar (significant)	Similar (significant)	Similar (significant)	Greater (significant)
NOISE-5/NOISE-6 Airport Noise	Less than Significant	Similar (less than significant)	Similar (less than significant)	Similar (less than significant)	Similar (less than significant)
Population, Housing, and Employment					
POP-1 Induce Population Growth	Significant	Greater (significant)	Greater (significant)	Similar (significant)	Greater (significant)
POP-2 Displacement	Significant	Greater (significant)	Greater (significant)	Similar (significant)	Greater (significant)
Public Services – Fire & Police					
FIRE_1 Construction of New Facilities	Less than Significant	Similar (less significant)	Similar (less than significant)	Similar (less than significant)	Greater (less than significant)
POLICE-1 Construction of New Facilities	Less than Significant	Similar (less significant)	Similar (less than significant)	Similar (less than significant)	Greater (less than significant)
EDU-1 Construction of New Facilities	Less than Significant	Similar (less significant)	Similar (less than significant)	Similar (less than significant)	Similar (less than significant)
REC-1 Construction of New Facilities	Less than Significant	Similar (less significant)	Similar (less than significant)	Similar (less than significant)	Less (less than significant)
REC-2 Deterioration of Facilities	Significant	Less (significant)	Less (significant)	Similar (less than significant)	Greater (less than significant)

Impact	Project Impact	Alternative 1 – No Project Alternative	Alternative 2 – Trend Alternative	Alternative 3 – Old Plan	Alternative 4 – Blueprint Plus
Transportation and Traffic					
TR-1 Substantial Increase in VMT	Significant	Greater (significant)	Greater (significant)	Greater (significant)	Less (significant)
TR-2Conflict with CMP	Significant	Less (significant)	Similar (significant)	Greater (significant)	Greater (significant)
TR-3 Change Air Traffic	Less than significant	Similar (less than significant)	Similar (less than significant)	Similar (less than significant)	Similar (less than significant)
TR-4 Increase Design Hazards	Less than significant	Similar (less than significant)	Similar (less than significant)	Similar (less than significant)	Similar (less than significant)
TR-5 Inadequate Emergency Access	Less than significant	Similar (less than significant)	Similar (less than significant)	Similar (less than significant)	Similar (less than significant)
TR-6 Conflict with Policies	Less than significant	Significant (greater)	Significant (greater)	Significant (greater)	Less (less than significant)
Utilities – Energy					
ENERGY-1 Conflict with Adopted Plans	Less than significant	Greater (less than significant)	Greater (significant)	Similar (Significant)	Less (significant)
ENERGY-1 Wasteful Use of Energy	Less than significant	Greater (less than significant)	Greater (significant)	Similar (Significant)	Less (significant)
ENERGY-2 Construction of New Facilities	Significant	Greater (significant)	Greater (significant)	Similar (Significant)	Less (significant)
Utilities – Wastewater					
WW-1 Exceed Wastewater Treatment Requirements	Less than significant	Similar (Less than significant)	Similar (Less than significant)	Similar (Less than significant)	Similar (Less than significant)
WW-2 Construction of New Facilities	Significant	Greater (significant)	Greater (significant)	Similar (Significant)	Similar (significant)
WW-3 Exceed the Capacity of Existing or Planned Facilities	Significant	Similar (significant)	Similar (significant)	Similar (significant)	Similar (significant)
Utilities – Solid Waste					
SW-1 Generate Solid Waste Exceeding landfill capacity	Significant	Greater (significant)	Greater (significant)	Greater (Significant)	Less (significant)
SW-2 Comply with Regulations	Less than significant	Similar (less than significant)	Similar (less than significant)	Similar (less than significant)	Similar (less than significant)
Water Supply and Hydrology					
W-1 Violate Water Quality Standards	Significant	Similar (significant)	Similar (significant)	Similar (significant)	Similar (significant)
W-2 Interfere with Groundwater Recharge	Significant	Greater (significant)	Greater (significant)	Greater (significant)	Similar (significant)
W-3 Erosion and Sedimentation	Significant	Greater (significant)	Greater (significant)	Greater (significant)	Similar (significant)
W-4 Flooding and Floodplains	Significant	Greater (significant)	Greater (significant)	Greater (significant)	Similar (significant)
W-5 Exceed Stormwater Drainage Capacity	Significant	Less (significant)	Greater (significant)	Greater (significant)	Similar (significant)
W-6 Degrade Water Quality	Significant	Similar (significant)	Greater (significant)	Greater (significant)	Similar (significant)
W-7 Housing in 100-year Flood Hazard Areas	Significant	Greater (significant)	Greater (significant)	Greater (significant)	Similar (significant)
W-8 Structures in 100-year Flood Hazard Areas Redirecting Flow	Significant	Greater (significant)	Greater (significant)	Greater (significant)	Similar (significant)

Impact	Project Impact	Alternative 1 – No Project Alternative	Alternative 2 – Trend Alternative	Alternative 3 – Old Plan	Alternative 4 – Blueprint Plus
W-9 Substantial increase in demand for water	Significant	Greater (significant)	Greater (significant)	Similar (significant)	Less (significant)

Source: Impact Sciences, 2018

5.2.6 Analysis of Alternative 1 – No Project Alternative

Aesthetics

Scenic Vistas and Resources

Since the No Project Alternative includes fewer transportation projects than the proposed RTP/SCS, it would have less of an impact in terms of obstructing views and scenic resources. The No Project Alternative would not affect any eligible State Scenic Highways or County designated scenic highways, while the Plan includes projects located near scenic highways which could result in impacts. The No Project Alternative visual impacts would be greater than the Plan impacts for Impacts AES-1 because of the increased consumption of open space, vacant land, and interspersed transportation infrastructure.

Visual Character

Since the No Project Alternative includes fewer transportation projects than the proposed RTP/SCS, it would have less of an impact in terms of adding contrasting visual elements to existing natural, rural, and open space areas. The Plan includes strategies to focus growth in TPAs, which would help reduce the consumption and disturbance of natural lands and reduce impacts to visual character. Under the No Project Alternative, these land use strategies may not occur, although individual jurisdictions may still seek to reduce the urban footprint through their general plans. The Plan includes transportation improvements that facilitate access to undeveloped lands, making those lands more attractive for development than under the No Project Alternative; however, the Plan includes policies to dissuade such encroachment on open space and vacant lands and would result in far fewer impacts to open space. The land use planning strategies included in the proposed RTP/SCS would reduce consumption of vacant, open space/recreation and agricultural lands compared to the No Project Alternative (about 8,884 acres under the Plan and about 10,525 acres under the No Project Alternative). The No Project Alternative visual impacts would be greater than the Plan impacts for **Impacts AES-2** because of the increased consumption of open space, vacant land, and interspersed transportation infrastructure.

Light and Glare

The Plan includes strategies to focus growth in TPAs, which would help reduce impacts associated with light and glare by focusing development in urbanized areas. The plan does not specifically address lighting impacts, therefore, any policies to address light and glare would be implemented at the local level. Jurisdictions may also still seek to reduce the urban footprint through their general plans which would also reduce lighting impacts. The No Project Alternative visual impacts would be greater than the Plan impacts for Impacts AES-3 because of the increased consumption of open space, vacant land, and interspersed transportation infrastructure.

Agricultural Resources

Farmland

Under the No Project Alternative, the population of the TCAG region would still increase by 133,127 people by 2042, however no regional transportation investments would be made above the existing programmed projects. The population distribution would follow past trends, uninfluenced by the Plan's emphasis on urban infill. The No Project Alternative includes fewer transportation projects than the Plan, and there would be no regional policies to focus development in existing urban areas and avoid agricultural land. The No Project Alternative would result in 10,525 acres of land consumed compared to 8,884 acres consumed under the Plan. The No Project Alternative would also result in 2,310.6 acres of farmland consumed compared to 1,518.3 under the Plan. Impacts under the No Project Alternative would be greater than the proposed 2018 RTP/SCS for Impacts AG-1, because of the increased consumption of agricultural, forest, and timberland land and the lack of a comprehensive regional plan.

Williamson Act

Initially, the No Project Alternative would have less potential for creating conflicts with General Plans and other land use regulations, as the only growth strategies that would occur would be subject to local land use controls. However, over time and without a regional strategy, there would be less influence on a coordinated pattern of development. Thus, the No Project Alternative could ultimately result in a more dispersed land use pattern across the region, which could have greater impacts related to conversion of agricultural land and create conflicts with Williamson Act contracts. The No Project Alternative includes fewer transportation projects than the Plan, and there would be no regional policies to focus development in existing urban areas and avoid Williamson Act lands. However, state and federal laws and locally-approved plans and policies currently in place would continue to protect these resources. Impacts under the No Project Alternative would be greater than the proposed 2018 RTP/SCS for Impacts AG-2 because

of the increased consumption of agricultural, forest, and timberland land and the lack of a comprehensive regional plan.

Forest and Timberland

The No Project Alternative would accommodate the same increase in total population, households, and jobs as the Plan. However, the proposed 2018 RTP/SCS includes strategies to focus growth in TPAs which would help reduce the consumption and disturbance of natural lands and reduce impacts to forest lands, and timberland. Impacts under the No Project Alternative would be greater than the proposed 2018 RTP/SCS for Impacts AG-3, because of the increased consumption of agricultural, forest, and timberland land and the lack of a comprehensive regional plan.

Changes in Environment Convert Farmland

The 2018 RTP/SCS would direct more growth to already urbanized areas, thereby reducing the amount of agricultural lands that would be converted to non-agricultural uses. Under the No Project Alternative, this growth pattern would not occur and a greater amount of agricultural lands could be converted to non-agricultural uses. The No Project Alternative would not increase mobility choices and capacity within urban areas. Therefore, the pressure would be reduced under this alternative to convert agricultural lands located near the periphery of these built-out areas to urban land uses could increase as transportation improvements are made. Nevertheless, the impact from changes in environment which would result in conversion of farmland would be greater under this alternative.

Air Quality

Criteria Air Pollutants

Short-Term Emissions

Short-term construction emissions of criteria pollutants would occur with implementation of the No Project Alternative. These construction activities would result in short-term emissions of air pollutants including ROG, NOx, PM10, PM2.5 and fugitive dust. The sources associated with these emissions include construction equipment, employee and vendor vehicles, demolition, grading and other ground-disturbing activities, application of paint and other coatings, paving, and others. The level of emissions is generally proportional to the size of the construction project, with larger projects typically resulting in larger emissions during construction. Countywide, it is likely that more than one project would be under construction at any one time, resulting in greater emissions. However, short-term emissions would be

reduced as compared to the 2018 RTP/SCS due to the reduction in transportation construction projects related to implementation of the 2018 RTP/SCS.

Long-Term Emissions

Emissions of long-term criteria pollutants from mobile sources would be affected by implementation of the No Project Alternative. In order to analyze the net impact of implementation, existing year (2017) emissions were compared to horizon year (2042) emissions.

Results of modeling are presented in **Table 5.0-2, Criteria Pollutant Emissions from Mobile Sources**. As shown, both the Plan and the No Project Alternative would result in reductions of reactive organic gases (ROG), sulfur oxides (SOx), oxides of nitrogen (NOx) and carbon monoxide (CO), and reductions of emissions of fine particulate matter (PM2.5). These would be beneficial impacts. Emissions of respirable particulate matter (PM10) from mobile sources show a slight increase over existing conditions. However, as shown in **Table 5.0-2**, the 2018 RTP/SCS would result in greater reductions (i.e., fewer total emissions) for ROG, NOx, CO, PM2.5, and SOx. PM10 would increase under both Alternatives. Therefore, impacts related to criteria pollutants would be greater under the No Project Alternative.

Table 5.0-2
Criteria Pollutant Emissions from Mobile Sources – No Project Alternative (2042) vs. Plan (2042)

	Tons/Day					
Scenario	**ROG**	**NOx**	**CO**	**PM10**	**PM2.5**	**SOx**
Existing 2017	3.37	10.42	24.56	0.74	0.35	0.06
2018 RTP/SCS 2042	0.99	2.89	6.54	0.75	0.30	0.04
2018 RTP/SCS Net	**-2.38**	**-18.02**	**-7.53**	**0.01**	**-0.05**	**-0.02**
No Project 2042	0.99	2.91	6.60	0.75	0.30	0.04
No Project Net	**-2.38**	**-7.95**	**-7.52**	**0.01**	**-0.05**	**-0.02**

Source: TCAG 2018, EMFAC14.

A conformity analysis was prepared for the 2018 RTP/SCS that analyzes emissions of ozone precursors (ROG and NOx), CO, PM10 and PM2.5 compared to the approved emissions budgets for mobile sources in Tulare County. The analysis found that emissions of all pollutants under the Plan passed the applicable conformity tests and would be in conformity with the State Implementation Plans (SIPs). However, both the Plan and No Project Alternatives would generate greater PM10 emissions by 2042. Consequently, the impact from PM10 emissions would be a significant impact. However, the *2007 PM-10 Maintenance Plan* allows for trading of NOx and PM10 emissions at a 1.5 to 1 ratio. Since the PM10 increase associated with the Plan and No Project alternative are relatively small, this would allow PM10 emissions to pass the

conformity test under this alternative. Consequently, the increase would not be considered substantial, and the impact related to criteria pollutant emissions would remain less than significant.

Toxic Air Contaminants

Short-Term Emissions

The specific location of future construction activity within the County was not known when the air quality analysis was completed, and therefore many variables related to characterizing potential exposures to air toxics during construction activities could not be determined, such as proximity to the emissions sources and duration of exposure. A construction health risk analysis would be speculative given the lack of a construction location and construction activities. However, it is reasonable to assume that some level of construction activity would occur adjacent to sensitive receptors (e.g., residences and schools). The significant construction emissions identified above could result in adverse health effects to sensitive receptors. As such, it is likely that intense construction activities (e.g., from development projects that involve a high volume of haul trucks) would exceed the health risk significance thresholds due to equipment and truck exhaust emissions. However, short-term construction emissions would be reduced under the No Project Alternative due to a reduction of transportation project construction activity within Tulare County as compared to the 2018 RTP/SCS.

Long-Term Emissions

Diesel particulate matter (DPM) generated from diesel-fueled engines and found in diesel exhaust, has been determined by CARB to be a toxic air contaminant as defined under Section 39655 of the Health and Safety Code. The long-term health effects of DPM include cancer, increased incidences of asthma, allergies, and respiratory disease and the short-term health impacts include dizziness, headaches, nausea, and irritation of the eyes, nose, and throat.

PM2.5 emissions will be used as a proxy for DPM emissions in this analysis as further described in **Section, 4.3 Air Quality**. As shown in **Table 5.0-2**, above, emissions of PM2.5 for all mobile sources will be reduced under the No Project Alternative. However, in order to more closely approximate DPM emissions, PM2.5 emissions specifically from heavy-duty diesel vehicles were estimated. The emissions generated under existing conditions as compared to the No Project Alternative are shown in **Table 5.0-3, PM2.5 Emissions from Heavy Duty Diesel Vehicles.**

Table 5.0-3
PM2.5 Emissions from Heavy Duty Diesel Vehicles (tons/day) – No Project (2042) vs. Plan (2042)

Existing 2017	2042 Plan	2042 No Project Alternative
0.066	0.066	0.066

Source: TCAG 2018, EMFAC14

As shown in **Table 5.0-3**, the No Project Alternative would generate similar PM2.5 emissions compared to the 2018 RTP/SCS but would be less than under existing conditions. CARB has several programs and regulations in place to reduce DPM emissions state-wide. This includes enforced retrofit of diesel particulate filters, replacement of older trucks and buses, requirements for lower emissions on new diesel vehicles, inspection programs, idling restrictions, and other programs for marine and off-road diesel vehicles. These programs and regulations would reduce DPM emissions over the period of the 2018 RTP/SCS. Consequently, it can be assumed that the reductions in PM2.5 emissions include reductions in DPM emissions region-wide.

However, on a case-by-case basis RTP/SCS transportation improvements may also bring sources of DPM closer to sensitive receptors through construction of new facilities or widened roadways, which could increase exposure of sensitive receptors. To provide a qualitative measure of this impact, highways in Tulare County were given an Air Quality Index (AQI), based on three factors: (1) average daily traffic (2) percentage of truck traffic and (3) level of service (which is a measure of traffic delays). A 'high' index indicates that a roadway has a relatively high amount of traffic and percentage of trucks with a low level of service. A 'low' index reflects a relatively low amount of traffic with fewer trucks, and a high level of service. 'Medium' would be somewhere between 'high' and 'low'. In this way, a 'high' index would qualitatively show a higher health risk as well, since roadways with a 'high' index would tend to have higher DPM concentrations due to the higher number of trucks and lower traffic speeds. The indices for highways in Tulare County and locations of sensitive receptors under existing conditions, 2018 RTP/SCS, and the No Project Alternative are shown in **Figures 4.3-5** through **4.3-7**.

There are more highways identified as having a higher AQI rank under the No Project Alternative versus the existing conditions in 2017. The total receptors affected by higher AQI highways for the No Project Alternative would be less than the 2018 RTP/SCS. Regarding sensitive receptor locations, the 2018 RTP/SCS would locate more housing, and schools near higher traffic highways, but would not change the amount of hospitals near high AQI highways. However, under the No Project Alternative, there would be less hospitals located near medium AQI highways. Therefore, this qualitative measure indicates that an

increased heath risk impact could result from implementation of the 2018 RTP/SCS as more sensitive receptors would be located relatively close to increased truck traffic.

Although PM2.5 emissions would be reduced in Tulare County under the No Project Alternatives, more sensitive receptors located next to highways in 2042 than under existing conditions. The projected higher volume of truck traffic would potentially be increased health risk to certain populations in Tulare County. In addition, given the lack of data regarding industrial and other stationary sources of TACs, it is unknown whether these sources would result in increased emissions of TACs in 2042 compared to existing conditions, and therefore it is unknown what their impact on health risks in Tulare County would be. Consequently, this impact would be considered significant. Overall impacts from the No Project alternative would be similar to those under the 2018 RTP/SCS, but would remain significant.

Biological Resources

Species Identified as a Candidate, Sensitive, or Special-Status Species

The No Project Alternative would result in a less concentrated growth pattern, which would affect a greater amount of vacant land and critical habitat. The No Project would result in the consumption of 176 acres of critical habitat and 10,525 acres of vacant land, while the 2018 RTP/SCS would result in the consumption of 144 acres of critical habitat and 8,884 acres of vacant land[4]. As such a greater number of sensitive species could be affected under the No Project. No Project impacts would be greater than the plan.

Sensitive Natural Communities and Federally-Protected Wetlands

Because the No Project Alternative includes a greater amount of critical habitat consumed and a more dispersed land use pattern, it is likely that a greater amount of wetlands and sensitive natural communities would be affected with the No Project than under the Plan.

Wildlife Movement

Direct impacts to wildlife movement include increased noise and human presence during construction, as well as increased trash, which may attract predators to the project site and discourage wildlife use of surrounding natural habitat. Increased roadway traffic, due to the division of habitat and corridors, may affect surrounding wildlife and lead to increased wildlife mortality. The No Project Alternative includes fewer projects (such as widenings) than the 2018 RTP/SCS and therefore would be less likely to result in direct impacts to wildlife movement; however, the more dispersed growth pattern of the No Project could

4 TCAG 2018, Envision Tomorrow, SJV Greenprint

result in greater impacts to wildlife movement by habitat modification. Therefore, impacts under the No Project would be significant and similar to the 2018 RTP/SCS.

Preservation Plans

The No Project Alternative would result in greater vacant land and critical habitat consumption that would increase biological resources impacts and the potential to conflict with ordinances and plans regarding biological resources. This impact would be greater than impacts under the 2018 RTP/SCS.

Cultural Resources

Historical Resources

The proposed 2018 RTP/SCS would result in concentration of development in previously developed urban areas, which could lead to greater impacts to historic structures, such as those located in downtown historic districts. However, many communities, including the County and the City of Visalia, have in place policies to protect historic resources, and even under the No Project Alternative, these areas could still redevelop, although possibly not at the same intensity as under the plan. Therefore, the No Project impacts would be lesser than the Plan's impacts, but would likely still be significant and development in historic cores would continue to occur. All projects (including those under the No Project Alternative and Project) would be required to comply with the same local, state, and federal regulations in place to protect identified cultural resources.

Archeological Resources

Under the No Project Alternative, fewer areas would be impacted by excavation and construction activities related to transportation projects because there would be fewer transportation projects. However, the No Project Alternative would result in a less concentrated form of growth, which would affect an increased amount of currently undisturbed land (10,525 acres as compared to 8,884 acres with the proposed Project). Thus, the No Project Alternative would result in greater vacant land consumption that could, in turn, increase the chance to uncover a greater number of previously undisturbed resources, including archeological resources. Impact would be significant.

Paleontological Resources

Under the No Project Alternative, fewer areas would be impacted by excavation and construction activities related to transportation projects because there would be fewer transportation projects. However, the No Project Alternative would result in a less concentrated form of growth, which would affect an increased amount of currently undisturbed land (10,525 acres as compared to 8,884 acres with

the proposed Project). Thus, the No Project Alternative would result in greater vacant land consumption that could, in turn, increase the chance to uncover a greater number of previously undisturbed resources, including paleontological resources. Impacts would be significant.

Human Remains

Under the No Project Alternative, fewer areas would be impacted by excavation and construction activities related to transportation projects because there would be fewer transportation projects. However, the No Project Alternative would result in a less concentrated form of growth, which would affect an increased amount of currently undisturbed land (10,525 acres as compared to 8,884 acres with the proposed Project). Thus, the No Project Alternative would result in greater vacant land consumption that could, in turn, increase the chance to uncover a greater number of previously undisturbed resources, including human remains. Impacts would be significant.

Tribal Cultural Resources

Under the No Project Alternative, fewer areas would be impacted by excavation and construction activities related to transportation projects because there would be fewer transportation projects. However, the No Project Alternative would result in a less concentrated form of growth, which would affect an increased amount of currently undisturbed land (10,525 acres as compared to 8,884 acres with the proposed Project). Thus, the No Project Alternative would result in greater vacant land consumption that could, in turn, increase the chance to uncover a greater number of previously undisturbed resources, including tribal cultural resources. Impacts would be significant.

Greenhouse Gas Emissions

GHG Emissions Estimates

The 2018 RTP/SCS includes strategies aimed at increasing the density of land use in Tulare County, thereby reducing per capita VMT and GHG emissions. In all analysis years, emissions would be higher under the No Project Alternative. The first significance threshold for GHG emissions is whether the project would result in emissions that could have a significant impact on the environment. In 2042 mobile source emissions would be 1,669,134 ~~MTCO$_2$e/yr~~ tons/year CO_2 under the No Project Alternative, compared to 1,664,730 ~~MTCO$_2$e/yr~~ tons/year CO_2 under the 2018 RTP/SCS, which is a 0.3 percent increase compared to the 2018 RTP/SCS. Mobile source emissions under 2017 existing conditions are

approximately 2,229,808 ~~$MTCO_2e/yr$~~ tons/year CO_2.[5] Both alternatives would result in greater GHG mobile source emissions than under existing conditions.

The 2018 RTP per capita GHG emissions from cars and light duty trucks would be reduced by 12.8 percent in 2020 and 16.6 percent in 2035 compared to the SB 375 2005 base year. This compares with reductions of 12.1 percent, and 16.1 percent respectively for the No Project Alternative. Consequently, TCAG would meet its targets for GHG reductions under SB 375 with and without the 2018 RTP/SCS. Therefore, impacts would be less than significant for SB 375 and AB 32 for both the Plan and No Project Alternative.

The second significance threshold for GHG emissions is whether the project would result in greater emissions than under existing conditions (i.e., would emissions in 2042 be greater than in 2017). As shown in **Table 5.0-4**, in 2042 daily mobile source GHG emissions would be 4,573 ~~metric~~ tons of CO_2 ~~equivalents ($MTCO_2e$)~~ under the No Project Alternative, compared to 4,561 ~~$MTCO_2e$~~ tons of CO_2 under the 2018 RTP/SCS. The No Project Alternative would generate less emissions than under existing conditions, but generate more emissions compared to the 2018 RTP/SCS.

~~**Table 5.0-4**~~
~~**Per Capita GHG Mobile Source Emissions (1990, 2005, 2017, 2042)**~~

~~Source~~	~~Population~~	~~Total Mobile Source Emissions ($MTCO_2e$/Day)~~	~~GHG Per Capita (Pounds/Day of CO_2e)~~	~~% GHG Per Capita Reduction from 2017 ($MTCO_2e$/Year)~~
~~1990 Conditions~~	~~311,921~~	~~5,535~~	~~39.12~~	~~N/A~~
~~2005 Conditions~~	~~404,148~~	~~6,512~~	~~35.52~~	~~N/A~~
~~2017 Existing Conditions~~	~~471,842~~	~~6,109~~	~~28.54~~	~~N/A~~
~~2042 No Project Alternative~~	~~604,969~~	~~4,573~~	~~16.66~~	~~-42%~~
~~2042 Old Plan Alternative~~	~~604,969~~	~~4,636~~	~~16.89~~	~~-41%~~
~~2042 Trend Alternative~~	~~604,969~~	~~4,613~~	~~16.81~~	~~-41%~~
~~2042 RTP/SCS~~	~~604,969~~	~~4,561~~	~~16.62~~	~~-42%~~
~~2042 Blueprint Plus Alternative~~	~~604,969~~	~~4,546~~	~~16.57~~	~~-42%~~

~~Note: 1990 emissions estimated as approximately 15% below 2005 emission levels.~~
~~Source: Emissions and population (2005, 2017, 2042) data provided by TCAG, 2018; 1990 population data provided by US Census Bureau, 2018.~~

[5] TCAG, 2018 and *EMFAC14*

Table 5.0-4
Per Capita GHG Mobile Source Emissions (1990, 2005, 2017, 2042)

Source	Population	Total Mobile Source Emissions (Tons/Day of CO_2)	GHG Per Capita (Pounds/Day of CO_2)	% GHG Per Capita Reduction from 2017 (Tons/Year of CO_2)
1990 Conditions	311,921	5,535	35.49	N/A
2005 Conditions	404,148	6,512	32.22	N/A
2017 Existing Conditions	471,842	6,109	25.89	N/A
2042 No Project Alternative	604,969	4,573	15.12	-42%
2042 Old Plan Alternative	604,969	4,636	15.33	-41%
2042 Trend Alternative	604,969	4,613	15.25	-41%
2042 RTP/SCS	604,969	4,561	15.08	-42%
2042 Blueprint Plus Alternative	604,969	4,546	15.03	-42%

Note: 1990 emissions estimated as approximately 15% below 2005 emission levels.
Source: Emissions and population (2005, 2017, 2042) data provided by TCAG, 2018; 1990 population data provided by US Census Bureau, 2018.

Consistency With Plans

The third threshold asks whether the project would hinder progress toward the goals of applicable GHG reductions plans such as AB 32, SB 375, and SB 32 (i.e., would emissions in 2020 be the same as emissions in 1990).

SB 375

For TCAG, CARB determined that the 2020 target is a 5 percent reduction from 2005 emissions levels, and the 2035 target is a 10 percent reduction. Although iimplementation of the No Project Alternative would provide less reduction of GHG compared to the 2018 RTP/SCS, this alternative would exceed these GHG reduction targets, providing reductions of 12 percent reduction in 2020 and 17 percent in 2035 (**Table 5.0-5**).

~~**Table 5.0-5**~~
~~**No Project Alternative SB 375 Greenhouse Gas Emissions and VMT Reductions**~~

~~Indicators & Measures~~	~~2005 Baseline~~	~~2020 No Project~~	~~2035 No Project~~	~~2042 No Project~~
~~Total Population~~	~~404,148~~	~~488,293~~	~~568,186~~	~~604,969~~
~~**Vehicle Miles Traveled (VMT)**~~				
~~VMT per Weekday~~	~~8,705,754~~	~~9,348,211~~	~~10,515,830~~	~~11,046,917~~
~~Per Capita VMT SB 375~~	~~21.54~~	~~19.14~~	~~18.51~~	~~18.26~~
~~Difference between 2005 Base Per Capita VMT (21.54 miles)~~	~~0.0%~~	~~-11.12%~~	~~-14.08%~~	~~-15.23%~~
~~**SB 375 CO_2 Emissions**~~				
~~Total SB 375 CO_2 Emissions (tons/day)~~	~~3,404~~	~~3,614~~	~~4,017~~	~~4,229~~
~~Per Capita SB 375 CO_2e Emissions (lbs/day)~~	~~18.57~~	~~16.32~~	~~15.59~~	~~15.41~~
~~Difference between 2005 Base Per Capita CO_2 (18.57 lbs)~~	~~0.0%~~	~~-12.1%~~	~~-16.1%~~	~~-17.0%~~
~~SB 375 Targets Through September 30, 2018 (3/22/2018)~~	~~0.0%~~	~~-5.0%~~	~~-10.0%~~	~~N/A~~

~~*Source: TCAG, 2018.*~~

Table 5.0-5
No Project Alternative SB 375 Greenhouse Gas Emissions and VMT Reductions

Indicators & Measures	2005 Baseline	2020 No Project	2035 No Project	2042 No Project
Total Population	404,148	488,293	568,186	604,969
Vehicle Miles Traveled (VMT)				
VMT per Weekday	8,705,754	9,348,211	10,515,830	11,046,917
Per Capita VMT SB 375	21.54	19.14	18.51	18.26
Difference between 2005 Base Per Capita VMT (21.54 miles)	0.0%	-11.12%	-14.08%	-15.23%
SB 375 CO_2 Emissions				
Total SB 375 CO_2 Emissions (tons/day)	3,404	3,614	4,017	4,229
Per Capita SB 375 CO_2 Emissions (lbs/day)	16.84	14.80	14.14	13.98
Difference between 2005 Base Per Capita CO_2 (16.84 lbs)	0.0%	-12.1%	-16.1%	-17.0%
SB 375 Targets Through September 30, 2018 (3/22/2018)	0.0%	-5.0%	-10.0%	N/A

Source: TCAG, 2018.

AB 32

GHG emissions per household would be less under the 2018 RTP/SCS than under the No Project Alternative (13.8 ~~$MTCO_2e$/Year~~ tons/year of CO_2 per household compared to 14.8 ~~$MTCO_2e$/Year~~ tons/year of CO_2 per household). However, data regarding energy use and therefore GHG emissions from commercial, industrial, agricultural and other sources is not available. While energy use per

household would decrease as a result of the more compact land use growth pattern, total energy use as a result of all land use activities would increase substantially between now and 2042.

As shown in **Table 5.0-6,** per capita GHG emissions for the No Project Alternative would be 33 percent below 1990 levels by 2020, and total mobile source GHG emissions are projected to increase by approximately five percent. This is approximately the same level of emissions reduction as compared to the 2018 RTP/SCS.

Table 5.0-6
Mobile Source GHG Emissions (1990, 2005, 2017, 2020, 2035 and 2042)

Source	Estimated Population	Total Mobile Source Emissions ($MTCO_2e$/Day)	Total Percent GHG Change from 1990 ($MTCO_2e$/Year)	GHG Per Capita (Pounds/Day of CO_2e)	Total Percent GHG Per Capita Reduction from 1990 (Pounds/Day of CO_2e)
1990 Conditions	311,921	5,535	N/A	39.12	N/A
2005 Conditions	404,148	6,512	N/A	35.52	N/A
2017 Existing Conditions	471,842	6,109	+10%	28.54	-27%
2020 No Project Alternative	488,293	5,803	5%	26.20	-33%
2020 Old Plan Alternative	488,293	5,784	4%	26.11	-33%
2020 Trend Alternative	488,293	5,797	5%	26.17	-33%
2020 RTP/SCS	488,293	5,763	4%	26.02	-33%
2020 Blueprint Plus Alternative	488,293	5,755	4%	25.99	-34%
2035 No Project Alternative	568,186	4,567	-17%	17.72	-55%
2035 Old Plan Alternative	568,186	4,637	-16%	17.99	-54%
2035 Trend Alternative	568,186	4,587	-17%	17.80	-54%
2035 RTP/SCS	568,186	4,543	-18%	17.63	-55%
2035 Blueprint Plus Alternative	568,186	4,531	-18%	17.58	-55%
2042 No Project Alternative	604,969	4,573	-17%	16.66	-57%
2042 Old Plan Alternative	604,969	4,636	-16%	16.89	-57%
2042 Trend Alternative	604,969	4,613	-17%	16.81	-57%
2042 RTP/SCS	604,969	4,561	-18%	16.62	-58%
2042 Blueprint Plus Alternative	604,969	4,546	-18%	16.57	-58%

Note: 1990 emissions estimated as approximately 15% below 2005 emission levels.
Source: *TCAG, 2018;* US Census Bureau, 2018.

Table 5.0-6
Mobile Source GHG Emissions (1990, 2005, 2017, 2020, 2035 and 2042)

Source	Estimated Population	Total Mobile Source Emissions (Tons/Day of CO_2)	Total Percent GHG Change from 1990 (Tons/Year of CO_2)	GHG Per Capita (Pounds/Day of CO_2)	Total Percent GHG Per Capita Reduction from 1990 (Pounds/Day of CO_2)
1990 Conditions	311,921	5,535	N/A	35.49	N/A
2005 Conditions	404,148	6,512	N/A	32.22	N/A
2017 Existing Conditions	471,842	6,109	+10%	25.89	-27%
2020 No Project Alternative	488,293	5,803	5%	23.77	-33%
2020 Old Plan Alternative	488,293	5,784	4%	23.69	-33%
2020 Trend Alternative	488,293	5,797	5%	23.75	-33%
2020 RTP/SCS	488,293	5,763	4%	23.61	-33%
2020 Blueprint Plus Alternative	488,293	5,755	4%	23.57	-34%
2035 No Project Alternative	568,186	4,567	-17%	16.08	-55%
2035 Old Plan Alternative	568,186	4,637	-16%	16.32	-54%
2035 Trend Alternative	568,186	4,587	-17%	16.15	-54%
2035 RTP/SCS	568,186	4,543	-18%	15.99	-55%
2035 Blueprint Plus Alternative	568,186	4,531	-18%	15.95	-55%
2042 No Project Alternative	604,969	4,573	-17%	15.12	-57%
2042 Old Plan Alternative	604,969	4,636	-16%	15.33	-57%
2042 Trend Alternative	604,969	4,613	-17%	15.25	-57%
2042 RTP/SCS	604,969	4,561	-18%	15.08	-58%
2042 Blueprint Plus Alternative	604,969	4,546	-18%	15.03	-58%

Note: 1990 emissions estimated as approximately 15% below 2005 emission levels.
Source: *TCAG, 2018;* US Census Bureau, 2018.

SB 32

SB 32 sets the statewide GHG emissions reduction target for the year 2030.SB 32 requires a reduction in GHG emissions of 40 percent below 1990 levels. As shown in **Table 5.0-6**, emissions from transportation sources in Tulare County would exceed these targets, providing an increase in emissions in 2020 of four

percent, and a decrease in emissions in 2035 of 17 percent. Neither the 2020 nor 2035 projections reduce emissions by 40 percent as compared to 1990 levels. These emission reductions are less than the reductions provided by the 2018 RTP/SCS. Both the 2018 RTP/SCS and the No Project Alternative. would have significant impacts with respect conflicting with the state's ability to achieve SB 32 and EO S-3-05 GHG reduction targets. However, in all years emissions under the Plan would be less than under the No Project Alternative. Therefore, impacts associated with SB 32 and EO S-3-05 conflicts would also be less with the 2018 RTP/SCS than the No Project Alternative for all thresholds and all years analyzed.

Land Use

Conflict with Plan, Policy or Regulation

In the No Project Alternative, population would still grow by 133,127 people; however, no regional transportation investments would be made above the existing programmed projects, and no land use strategies would be in place. The population distribution would follow past trends, uninfluenced by additional transportation investments.

The No Project Alternative includes fewer transportation projects than the 2018 RTP/SCS and does not include any land use strategies. It would have a lesser potential for conflicting with general plans as the only growth strategies that would occur would be based on local general plans and land use controls. Nonetheless, urbanization with significant potential for land use conflicts would occur resulting in significant impacts under the No Project alternative.

Disrupt a Community

The No Project Alternative would likely have similar significant impacts on and division of communities, because redevelopment in existing communities would still occur and more land in general would be impacted. In general, as fewer transportation projects are included in the No Project alternative, there would be less opportunity for disruption of a community, although impacts would still remain significant.

Noise

Exposure to Excess Noise Levels, Substantial Permanent or Temporary Increases in Noise

Implementation of the 2018 RTP/SCS would result in the same total regional population and households as the No Project Alternative. Population for both the No Project Alternative and the Plan 2018 RTP/SCS is projected to be approximately 604,969 in 2042. However, under the No Project Alternative, no regional transportation investments would be made beyond the existing programmed projects. Under the No

Project Alternative, the population distribution is assumed to follow past trends, uninfluenced by additional transportation investments and growth policies contained within the proposed 2018 RTP/SCS.

Both the No Project Alternative and 2018 RTP/SCS would expose people to significant increases in noise and vibration. Under the 2018 RTP/SCS, development would be more concentrated, potentially exposing more people and sensitive uses to noise and vibration in urban areas (including both construction and operational noise). However, the 2018 RTP/SCS includes improvements in urban areas that would facilitate traffic movement, and increase use of transit and alternate modes that could reduce individual vehicle noise (as more people take alternative modes of transportation). On balance, the No Project Alternative would result in more roadways with substantial increases in noise without any traffic congestion improvements like the Plan (see **Figure 4.8-5** as compared to **4.8-6**).

The greater amount of transportation projects in the 2018 RTP/SCS would increase the amount of transportation-related construction activity, which would increase short-term noise and vibration levels. However, as a result of the more dispersed growth pattern, and no emphasis on transit or alternative modes of transportation, roadways would increase in congestion and associated noise. With a more dispersed growth pattern, fewer people would be exposed to substantial increases in noise as compared to the Plan (more vacant land would be consumed under the No Project Alternative -- 10,525 acres compared to 8,884 acres under the Plan), although people in proximity to roadway noise increases would still be exposed. Fewer construction projects would be constructed which would result in overall lower construction noise impacts compared to the 2018 RTP/SCS.

Vibration

The transportation improvements under the 2018 RTP/SCS would help to move traffic more efficiently which could reduce vibration in urban areas but not to the point of off-setting increased vehicle trips. Similarly, with vibration in general, as for the 2018 RTP/SCS, there remains the potential for individual projects in the region to result in significant vibration impacts. Thus, impacts related to groundborne vibration under the No Project Alternative would be similar to under the 2018 RTP/SCS and would be significant.

Airport Noise

Similar to the Plan, some land use projects under the No Project Alternative could be located within an area covered by an airport land use plan or in the vicinity of a private airstrip. However, existing plans and regulations, including the Tulare County Comprehensive Airport Land Use Plan (ALUP) and Federal Aviation Administration regulation of airports and airstrips, would minimize noise emissions levels for

people residing or working in the project area. Therefore, impacts would be similar to the Plan and less than significant.

Population, Housing and Employment

Induce Population

Under the No Project Alternative, the population of the TCAG region would still grow by approximately 133,127 people and add an additional 37,436 housing units by 2042; however, no regional transportation investments would be made above the existing programmed projects. The 2018 RTP/SCS includes land use strategies that would target growth in developed urban areas. These strategies are absent in the No Project Alternative. However, the transportation investments included in the 2018 RTP/SCS could facilitate access to vacant lands that might otherwise be less accessible under the No Project Alternative. This improved accessibility under the 2018 RTP/SCS could encourage growth in previously undeveloped areas that are not currently planned for growth Therefore, impacts would be significant under the No Project alternative. The No Project Alternative would consume about 10,525 acres of vacant lands, while the 2018 RTP would consume about 8,884 acres of vacant land. [6] As the No Project would consume a greater amount of vacant land, this land use pattern could represent a greater chance of unplanned growth. As such impacts related to induced population would be greater under the No Project than the Plan.

Displacement

Under the No Project alternative, the population distribution would follow past trends, uninfluenced by the Plan's emphasis on compact development. The GIS analysis shows that under the No Project Alternative uses within 500 feet of freeways would include 13,572 jobs and 3,898 households. For the Plan, 12,453 jobs and 4,178 households would be affected by transportation projects. Although the No Project includes fewer transportation improvements, a greater number of home and business would be located near freeways which could result in the potential for displacement. This could result in a greater number of displaced business and residences under the No Project Alternative. The No Project Alternative impacts could be greater than the Plan impacts as more residential uses could be affected.

6 TCAG, 2018

Public Services

Police and Fire

Under the No Project Alternative, the population of the TCAG region would still grow by close to 133,127 people by 2042, however no regional transportation investments would be made above the existing programmed projects. However, the Plan includes strategies to focus growth in TPAs which would help reduce police and fire response times and facilities would be in closer proximity to service calls (compared to more dispersed growth patterns) but could increase the need for new facilities in these areas. The No Project Alternative would permit unplanned development which could strain fire department resources due to the physical distances between developments. The No Project impacts would be similar to those under the Plan for **Impact FIRE-1.** Under the Plan increased density in urban areas could increase demand for new facilities and under the No Project Alternative the dispersed development pattern could result in the need for additional facilities to be constructed (in a more dispersed pattern).

The No Project Alternative would accommodate the same increase in total population, households, and jobs as the Plan. However, the Plan includes strategies to focus growth in TPAs which would help reduce response times, as most requests would be from concentrated urban areas; however the Plan could increase the need for new facilities in these areas. The No Project Alternative would permit more dispersed development which could strain police department resources due to the physical distances between developments. Under the No Project Alternative, the TPA land use strategies may not occur, although individual jurisdictions may still seek to reduce the urban footprint through their general plans.

The No Project Alternative impacts would be similar to those under the Plan for **Impact POLICE-1**. Under the Plan, increased density in urban areas could increase demand for new facilities and under the No Project Alternative the dispersed development pattern could result in the need for additional facilities to be constructed (in a more dispersed pattern, possibly away from sensitive receptors). However, more dense populations could result in increased crime.

Schools

Under the No Project Alternative, the population of the TCAG region would still grow by approximately 133,127 persons through 2042, however no regional transportation investments would be made above the existing programmed projects. The population distribution would follow past trends, uninfluenced by the Plan's emphasis on TPAs, which would result in greater consumption of vacant land (10,525 acres would be consumed under the No Project Alternative as compared to 8,884 under the Plan). However, the Plan includes strategies to focus growth in TPAs which would place an increased burden on existing

schools in urban areas as development increases. The No Project Alternative would permit dispersed development which could require additional educational facilities to be built to serve new residential developments. Under the No Project Alternative, the TPA land use strategies may not occur, although individual jurisdictions may still seek to reduce the urban footprint through their general plans. The No Project Alternative impacts would be similar to those under the Plan.

Recreation

Under the No Project Alternative, the population of the TCAG region would still grow by approximately 133,127 persons through 2042, however no regional transportation investments would be made above the existing programmed projects. The population distribution would follow past trends, uninfluenced by the Plan's emphasis on TPAs, which would result in greater consumption of open space areas (10,525 acres would be consumed under the No Project Alternative as compared to 8,884 under the Plan).

The No Project Alternative would accommodate the same increase in total population, households, and jobs as the Plan but with development occurring in a more dispersed pattern. Therefore, demand for recreational opportunities would be more dispersed and not focused in urban areas. The No Project Alternative would permit dispersed development which could require additional park and recreation facilities to be built in a more dispersed pattern. Under the No Project Alternative, the TPA land use strategies may not occur, although individual jurisdictions may still seek to reduce the urban footprint through their general plans.

Transportation

Substantial Increases in VMT

The last two columns of **Table 4.11-4** compares the Plan against the No Project Alternative, in which new transportation investments cease after 2019, while population and development continue to grow to forecast levels and development follows a more dispersed pattern than called for in the Plan. Compared to the No Project Alternative, the Plan would result in approximately 0.4 percent less VMT. The Plan would also result in 44 percent increase over the No Project Alternative in transit boardings, and would increase use of active modes, while reducing single occupancy/drive alone and high occupancy use. Both total and per capita VMT measures would drop with the Plan versus the 2042 No Project Alternative.

Conflict with CMP

Under the Plan, compared to existing conditions, traffic volumes would increase throughout the region and congestion would increase regionwide, especially in urban areas. Under the No Project Alternative,

traffic volumes would similarly increase and congestion would increase but in a more dispersed pattern and no new transportation investments to reduce congestion. Therefore, a significant impact would occur under this alternative and impacts would be greater than the Plan.

Change in Air Traffic

Similar to the conclusions of Plan implementation, the No Project Alternative would also not by itself result in changes in air traffic patterns. However, the similar increased population that would occur by 2042 would likely result in increased air traffic. As with the proposed project, iimplementation of the Tulare County Comprehensive Airport Land Use Plan (ALUP) would avoid safety risks associated with air traffic to the extent feasible. The impact to a change in air traffic patterns would similarly be less than significant.

Increase Hazards

Similar to the Plan, the No Project alternative would not result in increased hazards due to design feature (e.g., sharp curves or dangerous intersections) or increase conflicts between incompatible uses (e.g., farm equipment and other vehicular traffic). Design of new transportation facilities, including new pedestrian and bicycle facilities, takes into account potential hazards and avoids risks to the extent feasible. Impacts would be less than significant.

Inadequate Emergency Access

Under the No Project Alternative congestion would increase which could result in travel delay. The fire departments throughout the County are responsible for maintaining adequate response times, and future projects, both transportation and development, would undergo further environmental analysis that would include evaluation and mitigation of impacts to emergency access. Impacts would be less than significant and similar to the Plan.

Conflict with Alternative Transportation Plans

Under the No Project Alternative, there would be less transportation infrastructure investment, while growth would continue to occur at forecasted rates. In 2042, the No Project Alternative would result in more VMT as compared to the Plan. The No Project Alternative would also result in less transit use and use of active mode shares compared to the Plan. Additional and/or worsened significant impacts would result from this alternative compared to those impacts identified for the Project. The increased vehicular congestion and the lack of investment in pedestrian and bicycle facilities would result in decreases in the performance of Tulare's pedestrian and bicycle facilities. Impacts would be greater than the Plan.

Utilities

Energy

Wasteful Inefficient Use of Energy

The No Project Alternative includes fewer transportation projects than the Plan; howeverit would have more of an impact related to the need for expanded or newly constructed energy facilities to serve the more dispersed development accompanying population growth in the region due to less emphasis on TPAs. In addition, since fewer public transit options would be available than under the RTP and congestion would increase, use of petroleum fuel for personal vehicles would be greater, as indicated in **Table 5.0-7**.

Table 5.0-7
Gasoline and Diesel Consumption – No Project (2042) vs. Plan (2042)

Alternative	Vehicle Miles Travelled	Daily Gasoline Consumption (thousand gallons)	Daily Diesel Consumption (thousand gallons)
No Project Alternative (2042)	12,758,055	273.00	181.71
2018 RTP/SCS (2042)	12,699,425	272.67	180.89

Source: TCAG 2018, EMFAC 2014

The No Project Alternative would accommodate the same increase in total population, households, and jobs as the Plan. However, as shown in **Table 5.0-8**, the residential and commercial energy consumption under the No Project Alternative would be greater than under the 2018 RTP/SCS.

Table 5.0-8
Residential and Commercial Energy Consumption from New Growth –
No Project (2042) vs. Plan (2042)

Alternative	Energy Use per Household (Million BTU Per Year)
No Project (2042)	158.9
2018 RTP/SCS (2042)	148.3

Source: TCAG, 2018.

Unlike the No Project Alternative, the 2018 RTP/SCS includes strategies to focus growth in TPAs, which would help reduce the number of new energy facilities or expansion of existing facilities that need to be constructed. This is because the 2018 RTP/SCS would accommodate the same population by constructing higher density development with infill and mixed use projects. Infill and mixed-use developments are generally higher efficiency dwellings accounting for the reduction in total energy consumption seen in **Table 5.0-8**. Lower density development would be more dispersed throughout Tulare County under the No Project Alternative to satisfy the same population growth. Under the No Project Alternative, the Plan land use strategies may not occur, although individual jurisdictions may still seek to reduce the urban footprint through their general plans. It is also possible that increased density in urban areas could put additional pressure on energy providers to increase capacity to these areas resulting in additional impacts. However, as in general, energy use would be more efficient (on a per capita basis), with the Plan, impacts wasteful, inefficient, and unnecessary consumption of energy would be greater with the No Project Alternative.

Electricity and Natural Gas Use

Under the No Project Alternative, the population of the TCAG region would still grow by approximately 133,127 persons through 2042, however no regional transportation investments would be made above the existing programmed projects. The population distribution would follow past trends, uninfluenced by the Plan's emphasis on TPAs, which would result in greater consumption of open space areas (10,525 acres would be consumed under the No Project Alternative as compared to 8,884 under the Plan).

The No Project Alternative would accommodate the same increase in total population, households, and jobs as the Plan but with development occurring in a more dispersed pattern. Therefore, demand for electricity and natural gas would be more dispersed and not focused in urban areas. The No Project Alternative would permit dispersed development which could require additional electricity and natural gas facilities to serve a more dispersed land use pattern which could necessitate new or expanded facilities to serve additional areas. Under the No Project Alternative, the TPA land use strategies may not occur, although individual jurisdictions may still seek to reduce the urban footprint through their general plans. Similar to the proposed project, the No Project Alternative would result in an overall increase in electricity and natural gas demand due to increased population and economic growth. Impacts would be significant and would be greater than the Plan.

Wastewater

The No Project would accommodate the same increase in total population, households, and jobs as the Plan; however, the Plan includes strategies to focus growth adjacent to transit, which would help reduce

the need for construction of new wastewater treatment facilities because of more efficient use of water (and thus less generation of wastewater). The more distributed development pattern of the No Project Alternative would result in greater water consumption – in part as a result of more landscaping associated with single-family development as compared to multi-family homes. The additional water used on landscaping generally does not become wastewater, nonetheless the No Project's distributed growth pattern would tend to use more water, which could generate more wastewater.

Expansion of existing facilities or construction of new facilities would still be necessary under the Plan to accommodate increases in population in urban areas. The more concentrated growth pattern could result in the existing wastewater collection systems in urban areas being inadequate (sewer lines could be too small). Under the No Project Alternative, land use strategies to focus growth in urban areas may not occur, although individual jurisdictions may still seek to reduce the urban footprint through their general plans. Construction of new wastewater treatment facilities would occur under the No Project Alternative to service the more dispersed growth pattern. Therefore, impacts would be similar with the No Project Alternative compared to impacts with the Plan, but the location of construction of new wastewater facilities under the No Project Alternative could be in different areas as compared to under the Plan. With a more dispersed growth pattern existing sewer lines would not be as impacted, although new sewer lines would be needed to serve the more dispersed growth pattern. Similar to the Plan, the No Project Alternative would not significantly impact wastewater treatment requirements but could significantly impact wastewater treatment and distribution facilities in Tulare County.

Solid Waste

Since the No Project Alternative includes fewer transportation projects than the Plan, it would have a lesser impact on solid waste generated from construction of transportation projects. The more compact growth pattern of the Plan could generate less solid waste than the more dispersed pattern of the No Project Alternative (multi-family development is more resource efficient and generates less waste than single-family development). The growth strategies included in the 2018 RTP/SCS would not occur with the No Project Alternative, longer distances could occur between development and landfill facilities and/or garbage collection would require that collection trucks travel greater distances to collect waste from the more distributed land use pattern.

The No Project Alternative would accommodate the same increase in total population, households, and jobs as the Plan. However, the Plan includes strategies to focus growth in urban areas, which would help reduce the impact to solid waste facilities. Under the No Project Alternative, these land use strategies may not occur, although individual jurisdictions may still seek to reduce the urban footprint through their general plans. Therefore, impacts would be greater under the No Project Alternative. Since the No Project

Alternative would generate greater solid waste (due to the less efficient growth pattern), it could contribute to overlapping impacts with other areas where they use the same facilities.

Water Supply and Hydrology

Under the No Project Alternative, the population of the TCAG region would still grow by close to 133,127 people by 2042, however no regional transportation investments would be made above the existing programmed projects. The population distribution would follow past trends, uninfluenced by the Plan's emphasis on TPAs.

Since the No Project Alternative includes fewer transportation projects than the Plan, it would have a lesser impact in terms of water quality. Under the No Project Alternative, only those projects currently funded and programmed would be constructed. Overall, fewer transportation project would be constructed (including fewer lane miles) and as a result, stormwater runoff associated with transportation infrastructure could be reduced compared to the Plan.

The No Project Alternative would accommodate the same increase in total population, households as the Plan. However, the Plan includes strategies to focus growth in urban areas which would help reduce the disruption of natural lands and vegetation in rural areas (under the No Project Alternative 10,525 acres of land would be consumed compared to 8,884 acres under the Plan). The No Project Alternative could increase stormwater runoff as a result of more land disturbed/urbanized, as well as increase development in outlying areas including flood zones. Under the No Project Alternative, land use strategies to concentrate growth may not occur, although individual jurisdictions may still seek to reduce the urban footprint through their general plans.

Regarding groundwater recharge, the No Project alternative would include fewer new lane miles, which could result in more permeable surface area available, compared to the Plan. However, the No Project alternative would result in greater land consumption 10,525 acres compared to 8,884 acres under the Plan. As a result, there would be fewer opportunities for groundwater recharge and impacts would be significant and greater than the Plan.

Regarding water supply, water usage for new development (residential) would increase under the No Project Alternative from 264 gallons per day (per household) under the Plan to 293 gallons per day per household (under the No Project) primarily because multi-family housing uses less water than single-family housing because of less landscaping per unit. This would occur even though the population total would be the same indicating growth patterns would be less water efficient. However, more important farmland would be consumed under the No Project Alternative (2,310.6 acres compared to 1,518 acres under the Plan) which could result in a reduction in water usage associated with agricultural lands.

Therefore, the No Project Alternative would have a lesser impact on depleting water supplies than the proposed project, although impacts would remain significant.

The No Project Alternative impacts would be greater than the Plan for water related impacts because of the increased urbanization, increased water consumption for new growth, development in flood plains and the potential for increased impervious surfaces (i.e., land consumption).

5.2.7 Analysis of Alternative 2 –Trend

Aesthetics

Scenic Vistas and Resources

The Trend Alternative includes a slightly modified transportation network without the same level of transportation improvements as the Plan. Therefore, under the Trend Alternative, the construction of roadways would result in fewer opportunities for impacts to eligible State Scenic Highways and scenic vistas as compared to the Plan.

Visual Character

Since the Trend Alternative includes a modified transportation network with fewer investments than the proposed RTP/SCS, it would have less of an impact in terms of adding contrasting visual elements to existing natural, rural, and open space areas. The Plan includes strategies to focus growth in TPAs, which would help reduce the consumption and disturbance of natural lands and reduce impacts to visual character. Under the Trend Alternative, these land use strategies would follow trends of existing local agency general plans and linear trends in growth on a sub-regional basis (although individual jurisdictions may still move away from the Trend Alternative). The Plan includes transportation improvements that facilitate access to undeveloped lands, making those lands more attractive for development than under the Trend Alternative; however, the Plan includes policies to dissuade open space encroachment and, therefore, would result in comparatively fewer impacts to open space. The land use planning strategies included in the proposed RTP/SCS would reduce consumption of vacant, open space/recreation and agricultural lands compared to the Trend Alternative. The Trend Alternative visual impacts would be greater than the Plan impacts for Impacts AES-2 because of the increased consumption of open space, vacant land, and interspersed transportation infrastructure.

Light and Glare

However, the Trend Alternative would not include urban form strategies to the same extent as the Plan. Nighttime lighting impacts would be greater, as more vacant land would be consumed under the Trend

Alternative (10,525 acres compared to 8,884 acres under the Plan) since lighting impacts are most pronounced in rural areas. Therefore, the Trend Alternative would result in fewer impacts to scenic vistas and glare but would result in greater lighting impacts than the Plan and impacts would be significant (as they would be for the Plan).

A*gricultural Resources*

Farmland

Similar to the No Project Alternative, the Trend Alternative would not encourage a compact development pattern and Alternative 2 would consume a total of 2,310 acres of farmland (compared to 1,518 acres under the Plan). The Trend Alternative would not include the urban form strategies that would focus growth within urban areas and, consequently, would result in the consumption of a greater amount of farmland compared to the Plan.

Williamson Act

The Trend Alternative would have less potential for creating conflicts with General Plans and other land use regulations, as the only growth strategies that would occur would be subject to local land use controls. Thus, the Trend Alternative would have lesser impacts related to conversion of agricultural land and create conflicts with Williamson Act contracts. The Trend Alternative includes a modified transportation network with fewer investments than the Plan, and there would be no regional policies to focus development in existing urban areas and avoid Williamson Act lands. However, state and federal laws and locally-approved plans and policies currently in place would continue to protect these resources. Impacts under the Trend Alternative would be less than the proposed 2018 RTP/SCS for Impacts AG-2 because of the reduced consumption of agricultural, forest, and timberland land and the lack of a comprehensive regional plan, but would still be significant.

Forest and Timberland

It is unlikely that land currently defined and zoned as forest land or timberland would be converted to residential as County polices and policies of other jurisdictions focus development in already developed areas. However, it is possible that such lands could be consumed as a result of the Trend growth pattern. The Trend Alternative includes a modified transportation network with fewer investments than the Plan, and there would be no regional policies to focus development in existing urban areas and avoid forest and timberlands. Therefore, impacts would be significant and similar to the Plan.

Changes in Environment Convert Farmland

The 2018 RTP/SCS would direct more growth to already urbanized areas, thereby reducing the amount of agricultural lands that would be converted to non-agricultural uses. Under the Trend Alternative, this growth pattern would not occur and a greater amount of agricultural lands could be converted to non-agricultural uses. Therefore, the impact from changes in environment which would result in conversion of farmland would be greater under this alternative. Impacts would be significant.

Air Quality

Criteria Air Pollutants

Short-Term Emissions

Short-term construction emissions of criteria pollutants would occur with implementation of the Trend Alternative. Countywide, it is likely that more than one project would be under construction at any one time, resulting in greater emissions. However, short term emissions would be reduced as compared to the 2018 RTP/SCS due to the reduction in construction projects related to implementation of the 2018 RTP/SCS.

Long-Term Emissions

Emissions of long-term criteria pollutants from mobile sources would be affected by implementation of the Trend Alternative. In order to analyze the net impact of implementation, existing year (2017) emissions were compared to horizon year (2042) emissions.

Results of modeling are presented in **Table 5.0-9 Criteria Pollutant Emissions from Mobile Sources**. As shown, both the 2018 RTP/SCS and the Trend Alternative would result in reductions of reactive organic gases (ROG), sulfur oxides (SOx), oxides of nitrogen (NOx) and carbon monoxide (CO), and reductions of emissions of fine particulate matter (PM2.5) as compared to existing conditions. These would be considered beneficial impacts. Emissions of respirable particulate matter (PM10) from mobile sources show a slight increase over existing conditions. However, as shown in **Table 5.0-9**, the 2018 RTP/SCS would result in greater reductions (i.e., fewer total emissions) for ROG, NOx, CO, PM2.5, and SOx. PM10 would increase under both scenarios. Therefore, impacts related to criteria pollutants would be greater under the Trend Alternative.

Table 5.0-9
Criteria Pollutant Emissions from Mobile Sources – Trend Alternative (2042) vs. 2018 RTP/SCS (2042)

	Tons/Day					
Scenario	**ROG**	**NOx**	**CO**	**PM10**	**PM2.5**	**SOx**
Existing 2017	3.37	10.42	24.56	0.74	0.35	0.06
2018 RTP/SCS 2042	0.99	2.89	6.54	0.75	0.30	0.04
2018 RTP/SCS Net	**-2.38**	**-7.53**	**-18.02**	**0.01**	**-0.05**	**-0.02**
Trend 2042	1.00	2.93	6.61	0.75	0.31	0.05
Trend Net	**-2.37**	**-7.95**	**-7.50**	**0.01**	**-0.05**	**-0.02**

Source: TCAG 2018; EMFAC14

A conformity analysis was prepared for the 2018 RTP/SCS that analyzes emissions of ozone precursors (ROG and NOx), CO, PM10 and PM2.5 compared to the approved emissions budgets for mobile sources in Tulare County. The analysis found that emissions of all pollutants under the Plan passed the applicable conformity tests and would be in conformity with the State Implementation Plans (SIPs). However, both the Plan and Trend Alternatives would generate greater PM10 emissions by 2042. Consequently, the impact from PM10 emissions would be a significant impact. However, the *2007 PM-10 Maintenance Plan* allows for trading of NOx and PM10 emissions at a 1.5 to 1 ratio. Since the PM10 increase associated with the Plan and Trend alternative are relatively small, this would allow PM10 emissions to pass the conformity test under this alternative. Consequently, the increase would not be considered substantial, and the impact related to criteria pollutant emissions would remain less than significant.

Toxic Air Contaminants

Short-Term Emissions

A construction health-risk analysis would be speculative given the lack of a construction location and construction activities. However, it is reasonable to assume that some level of construction activity would occur adjacent to sensitive receptors (e.g., residences and schools). The significant construction emissions identified above could result in adverse health effects to sensitive receptors. As such, it is likely that intense construction activities (e.g., from development projects that involve a high volume of haul trucks) would exceed the health risk significance thresholds due to equipment and truck exhaust emissions. However, short-term construction emissions would be reduced under the Trend Alternative due to a reduction of construction activity within Tulare County as compared to the 2018 RTP/SCS.

Long-Term Emissions

PM2.5 emissions will be used as a proxy for DPM emissions in this analysis as further described in **Section 4.3, Air Quality**. As shown in **Table 5.0-9**, above, emissions of PM2.5 for all mobile sources will be reduced under the Trend Alternative. However, in order to more closely approximate DPM emissions, PM2.5 emissions specifically from heavy-duty diesel vehicles were estimated. The emissions generated under existing conditions as compared to the Trend Alternative are shown in **Table 5.0-10, PM2.5 Emissions from Heavy Duty Diesel Vehicles.**

Table 5.0-10
PM2.5 Emissions from Heavy Duty Diesel Vehicles (tons/day) – Trend (2042) vs. 2018 RTP/SCS (2042)

Existing 2017	2042 Plan	2042 No Project Alternative
0.066	0.066	0.066

Source: TCAG 2018, EMFAC14

As shown in **Table 5.0-10**, the Trend Alternative would generate similar PM2.5 emissions compared to the 2018 RTP/SCS but would be less than under existing conditions. CARB has several programs and regulations in place to reduce DPM emissions state-wide. These programs and regulations would reduce DPM emissions over the period of the 2018 RTP/SCS. Consequently, it can be assumed that the reductions in PM2.5 emissions include reductions in DPM emissions region-wide.

However, on a case-by-case basis RTP improvements may also bring sources of DPM closer to sensitive receptors through construction of new facilities or widened roadways, which could increase exposure of sensitive receptors. There are more highways identified as having a higher AQI rank under the Trend Alternative versus the existing conditions in 2017. The total receptors affected by higher AQI highways for the Trend Alternative would be less than the 2018 RTP/SCS. The 2018 RTP/SCS would locate more housing, and schools near higher traffic highways, but would not change the amount of hospitals near high AQI highways. However, under the Trend Alternative, there would be less hospitals located near medium AQI highways as compared to the 2018 RTP/SCS. Therefore, this qualitative measure indicates that an increased heath risk impact could result from implementation of the 2018 RTP/SCS as more sensitive receptors would be located relatively close to increased truck traffic as compared to the Trend Alternative.

Although PM2.5 emissions would be reduced in Tulare County under the Trend Alternative, more sensitive receptors located next to highways in 2042 than under existing conditions. The projected higher

volume of truck traffic would potentially be increased health risk to certain populations in Tulare County. In addition, given the lack of data regarding industrial and other stationary sources of TACs, it is unknown whether these sources would result in increased emissions of TACs in 2042 compared to existing conditions, and therefore it is unknown what their impact on health risks in Tulare County would be. Consequently, this impact would be considered significant. Overall, impacts from the Trend Alternative would be less than those under the 2018 RTP/SCS, but would remain significant.

Biological Resources

Under the Trend Alternative, fewer areas would be impacted by excavation and construction activities as compared to the Plan. The Trend Alternative would not focus growth in urban areas to the same extent as the Plan. Therefore, the Trend Alternative would result in transportation projects and development taking place over a greater area of land. Specifically, new transportation projects and development would result in 176 acres of critical habitat being consumed, as compared to 144 acres under the Plan. This would result in greater habitat consumption which could include sensitive species habitat, riparian habitat, federally protected wetlands, migratory wildlife corridors, and native wildlife nursery sites. Therefore, biological resource impacts for the Trend Alternative would be greater than the Plan (and would also be significant).

Cultural Resources

Historical Resources

In urban areas, there would still be opportunities for impacts to built historical resources to occur resulting in a significant impact; however due to the greater emphasis on urban development in the Plan, impacts would be less for the Trend Alternative but still significant.

Archeological Resources, Paleontological Resources, and Tribal Cultural Resources

Under the TrendAlternative, there would be a fewer transportation projects than the Plan and the mix of projects and development patterns would extend over a greater area of land. The Trend Alternative would not focus growth in urban areas to the extent of the Plan and therefore could have fewer impacts on built historic resources. The Trend Alternative would not focus growth in urban areas to the same extent as the Plan. This would increase the chance to uncover a previously undisturbed resources such as archeological, paleontological and tribal cultural resources as development would occur in previously undeveloped areas.

Human Remains

The Trend Alternative would also result in significant impacts related to buried resources and impacts could be greater because of the greater area of undeveloped land impacted.

Greenhouse Gas Emissions

The 2018 RTP/SCS includes strategies aimed at increasing the density of land use in Tulare County, thereby reducing per capita VMT and GHG emissions. In all analysis years, emissions would be higher under the Trend Alternative. The first significance threshold for GHG emissions is whether the project would result in emissions that could have a significant impact on the environment. In 2042 mobile source emissions would be 1,683,745 ~~$MTCO_2e/yr$~~ tons/year of CO_2 under the Trend Alternative, compared to 1,664,730 ~~$MTCO_2e/yr$~~ tons/year of CO_2 under the 2018 RTP/SCS, which is a 1.1 percent increase compared to the 2018 RTP/SCS. Mobile source emissions under 2017 existing conditions are approximately 2,229,808 ~~$MTCO_2e/yr$~~ tons/year of CO_2.[7] Both alternatives would result in greater GHG mobile source emissions than under existing conditions, but Trend emissions would be greater.

The 2018 RTP per capita GHG emissions from cars and light duty trucks would be reduced by 12.8 percent in 2020 and 16.6 percent in 2035 compared to the SB 375 2005 base year. This compares with reductions of 12.1 percent, and 16.1 percent respectively for the Trend Alternative. Consequently, TCAG would meet its targets for GHG reductions under SB 375 with and without the 2018 RTP/SCS. Therefore, impacts would be less than significant for SB 375 and AB 32 for both the Plan and Trend Alternative

The second significance threshold for GHG emissions is whether the project would result in greater emissions than under existing conditions (i.e., would emissions in 2042 be greater than in 2017). As shown in **Table 5.0-4**, in 2042 daily GHG emissions would be 4,613 ~~metric~~ tons of CO_2 ~~equivalents ($MTCO_2e$)~~ under the Trend Alternative, compared to 4,561 ~~$MTCO_2e$~~ tons of CO_2 under the 2018 RTP/SCS. The No Trend Alternative would generate less emissions than under existing conditions, but generate more emissions compared to the 2018 RTP/SCS.

Consistency With Plans

The third threshold asks whether the project would hinder progress toward the goals of applicable GHG reductions plans such as AB 32, SB 375, and SB 32 (i.e., would emissions in 2020 be the same as emissions in 1990).

[7] TCAG, 2018 and *EMFAC14*

SB 375

For TCAG, CARB determined that the 2020 target is a 5 percent reduction from 2005 emissions levels, and the 2035 target is a 10 percent reduction. Although implementation of the Trend Alternative would provide less reduction of GHG compared to the 2018 RTP/SCS, this alternative would exceed these GHG reduction targets, providing reductions of 12 percent reduction in 2020 and 16 percent in 2035 (**Table 5.0-11**).

Table 5.0-11
Trend Alternative SB 375 Greenhouse Gas Emissions and VMT Reductions

Indicators & Measures	2005 Baseline	2020 Trend	2035 Trend
Total Population	404,148	488,293	568,186
Vehicle Miles Traveled (VMT)			
VMT per Weekday	8,705,754	9,339,393	10,557,662
Per Capita VMT SB 375	21.54	19.13	18.58
Difference between 2005 Base Per Capita VMT (21.54 miles)	0.0%	-11.21%	-13.74%
SB 375 CO_2 Emissions			
Total SB 375 CO_2 Emissions (tons/day)	3,404	3,610	4,038
Per Capita SB 375 CO_2e Emissions (lbs/day)	18.57	16.30	15.67
Difference between 2005 Base Per Capita CO_2 (18.57 lbs)	0.0%	-12.2%	-15.6%
SB 375 Targets Through September 30, 2018 (3/22/2018)	0.0%	-5.0%	-10.0%

Source: TCAG, 2018.

Table 5.0-11
Trend Alternative SB 375 Greenhouse Gas Emissions and VMT Reductions

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Per Capita VMT SB 375	21.54	19.13	18.58
Difference between 2005 Base Per Capita VMT (21.54 miles)	0.0%	-11.21%	-13.74%
SB 375 CO_2 Emissions			
Total SB 375 CO_2 Emissions (tons/day)	3,404	3,610	4,038
Per Capita SB 375 CO_2 Emissions (lbs/day)	16.84	14.79	14.21
Difference between 2005 Base Per Capita CO_2 (16.84 lbs)	0.0%	-12.2%	-15.6%
SB 375 Targets Through September 30, 2018 (3/22/2018)	0.0%	-5.0%	-10.0%

Source: TCAG, 2018.

AB 32

GHG emissions per household would be less under the 2018 RTP/SCS than under the Trend Alternative (13.8 ~~$MTCO_2e$/Year~~ tons/year of CO_2 per household compared to 14.8 ~~$MTCO_2e$/Year~~ tons/year of CO_2 per household). However, data regarding energy use and therefore GHG emissions from commercial, industrial, agricultural and other sources is not available. While energy use per household would decrease as a result of the more compact land use growth pattern, total energy use as a result of all land use activities would increase substantially between now and 2042.

As shown in **Table 5.0-6,** per capita GHG emissions for the Trend Alternative would be 33 percent below 1990 levels by 2020, and total mobile source GHG emissions are projected to increase by approximately five percent. This is approximately the same level of emissions reduction as compared to the 2018 RTP/SCS.

SB 32

SB 32 sets the statewide GHG emissions reduction target for the year 2030. SB 32 requires a reduction in GHG emissions of 40 percent below 1990 levels. As shown in **Table 5.0-6**, emissions from transportation sources in Tulare County would exceed these targets, providing an increase in emissions in 2020 of five percent, and a decrease in emissions in 2035 of 17 percent. Neither the 2020 nor 2035 projections reduce emissions by 40 percent as compared to 1990 levels. These emission reductions are less than the reductions provided by the 2018 RTP/SCS. Both the 2018 RTP/SCS and the Trend Alternative would have

significant impacts with respect conflicting with the state's ability to achieve SB 32 and EO S-3-05 GHG reduction targets. However, in all years emissions under the Plan would be less than under the Trend Alternative. Therefore, impacts associated with SB 32 and EO S-3-05 conflicts would also be less with the 2018 RTP/SCS than the Trend Alternative for all thresholds and all years analyzed.

Land Use

Conflict with Plan, Policy or Regulation

The Trend Alternative would result in a more dispersed land use pattern compared to the Plan. The Trend Alternative would consume an estimated 10,525 acres vacant land, while the Plan would consume 8,884 acres of vacant land. Thus, impacts related to consistency with plans and polices, under the Trend Alternative would be significant (as under the Project).

Disrupt a Community

New roadways and/or the addition of new lanes to existing freeways and roadways have the potential to divide communities. Due to the more dispersed pattern of the Trend Alternative, the Trend Alternative would have fewer impacts on existing uses than the Plan and would be less likely to divide an established community. This would, in part, occur as there are fewer transportation projects in the Trend Alternative, reducing the potential for either short-term construction impacts or long-term land use impacts. The impacts of fewer roadway projects under the Trend would result in fewer impacts as compared to the Plan Alternative. Development impacts are less clear, since under the Plan development would be concentrated in urban areas. In contrast, in the Trend Alternative land uses would change to greater extent in undeveloped areas; as under the Plan impacts would be significant.

Noise

Exposure to Excess Noise Levels, Substantial Permanent or Temporary Increases in Noise

The Trend Alternative would result in a more distributed growth pattern, which would increase noise levels across the County not just in concentrated urban areas. Noise levels would be less concentrated (including urban areas) as there would be less construction and less activity. However, impacts from construction and increased vehicle trips due to population growth would still be significant. The transportation improvements under the 2018 RTP/SCS would help to move traffic more efficiently which could reduce noise in urban areas but not to the point of off-setting increased vehicle trips.

Vibration

Similarly, with vibration in general, vibration impacts can be reduced to a level of less than significance, but as for the 2018 RTP/SCS, there remains the potential for individual projects in the region to result in significant vibration impacts. Thus, impacts related to noise and groundborne vibration under the Trend Alternative would be similar to under the 2018 RTP/SCS and would be significant.

Airport Noise

Similar to the Plan, some land use projects under the Trend Alternative could be located within an area covered by an airport land use plan or in the vicinity of a private airstrip. However, existing plans and regulations, including the Tulare County Comprehensive Airport Land Use Plan (ALUP) and Federal Aviation Administration regulation of airports and airstrips, would minimize noise emissions levels for people residing or working in the project area. Therefore, impacts would be similar to the Plan and less than significant.

Population, Housing and Employment

Induce Population

The Trend Alternative has the same population, household, and employment growth as the Plan. Given that the population, household, and employment growth would be the same at the regional level, the Trend Alternative would have greater impacts with respect to inducing unplanned growth because the Trend would result in more growth in undeveloped areas.

Displacement

The Trend Alternative's growth strategies would not focus the future population in urban areas to the same extent as the Plan. Plan growth strategies would result in more compact development around transit. The Plan would be more likely to result in displacing businesses or homes as development would be focused in urbanized areas. In many of these urbanized areas vacant land is scarce, resulting in a greater potential for projects to displace existing uses. Therefore, impacts under the Trend would be less in urbanized areas. Overall impacts would be greater than the Plan and would remain significant.

Public Services

Police and Fire

The Trend Alternative would result in similar transportation-related public service impacts as compared to the Plan. The Trend Alternative and the Plan alternatives include the same number of population, housing, and jobs that would require police, fire, and emergency facilities. More dispersed patterns of development could result in people located further from existing police and fire facilities, necessitating the construction of new facilities to maintain appropriate response times. The Trend Alternative impacts would be similar to those under the Plan**.** Under the Plan increased density in urban areas could increase demand for new facilities and under the Trend Alternative the dispersed development pattern could result in the need for additional facilities to be constructed (in a more dispersed pattern).

Schools

The Trend Alternative would result in similar demand for school facilities as under the Plan. The Trend may not result in the same level of urbanization as the Plan; however, the same number of students would be generated under both scenarios. Any impacts from construction of new schools would occur at the local level. Project-specific construction and operation impacts are not foreseeable at this time. To the extent that any significant impacts could result from the unique characteristics of a specific project site, those impacts would be speculative at this time. Therefore, impacts associated with the Trend and the Plan would be similar and would be less than significant.

Recreation

The Trend Alternative would accommodate the same increase in total population, households, and jobs as the Plan, but with development occurring in a more dispersed pattern. Therefore, demand for recreational opportunities would also be dispersed throughout the region. The Trend would permit the type of development that could require additional park and recreation facilities be built in a more dispersed pattern. Under the Trend Alternative, the land use strategies focusing growth in urban areas may not occur to the same extent as under the Plan, although individual jurisdictions may still seek to reduce the urban footprint through their general plans.

Impacts of the Trend Alternative could result in increased demand for construction of new facilities in currently undeveloped areas as compared to the Plan because of the more dispersed growth pattern resulting in more demand for recreational facilities in outlying areas. Although the Plan would increase demand for recreation facilities in urban areas, this demand may be harder to meet as land prices and development may preclude sufficient development of recreation facilities. The determination of the need

for and/or location of new construction for such facilities under either the Plan or Trend Alternative would be speculative at this time. In addition, construction of such facilities generally has minor impacts.

The Trend Alternative would have less impact on existing urban parks and recreational facilities and deterioration of such facilities because of a more dispersed growth pattern, however, such impacts would still be significant.

Transportation

Substantial Increases in VMT

Under the Trend Alternative, there would be less transportation infrastructure investment, while growth would continue to occur at forecasted rates. In 2042, the Trend Alternative would result in 12,848,274 VMT as compared to 12,699,425 VMT with the Plan. The Trend Alternative would also result in a less transit and active mode shares compared to the Plan. Additional or worsened impacts would result from this alternative compared to those impacts identified for the Plan. Impacts would be significant.

Conflict with CMP

The Trend Alternative would also result in fewer transit boardings than the Plan, and would decrease use of active modes, while increasing single occupancy/drive alone and high occupancy use. The increased vehicular congestion and the lack of investment in pedestrian and bicycle facilities would result in more roadway segments with unacceptable LOS D and decreases in the performance of Tulare's pedestrian and bicycle facilities. Under the Trend Alternative, traffic volumes would increase and congestion would increase. Therefore, impacts under this alternative would be significant and greater than the Plan.

Change in Air Traffic

Similar to the conclusions of Plan implementation, the Trend Alternative would also not by itself result in changes in air traffic patterns. However, the similar increased population that would occur by 2042 would likely result in increased air traffic. As with the proposed project, iimplementation of the Tulare County Comprehensive Airport Land Use Plan (ALUP) would avoid safety risks associated with air traffic to the extent feasible. The impact to a change in air traffic patterns would similarly be less than significant.

Increase Hazards

Similar to the Plan, the Trend alternative would not result in increased hazards due to design feature (e.g., sharp curves or dangerous intersections) or increase conflicts between incompatible uses (e.g., farm equipment and other vehicular traffic). Design of new transportation facilities, including new pedestrian and bicycle facilities, takes into account potential hazards and avoids risks to the extent feasible. Impacts would be less than significant.

Inadequate Emergency Access

Under the Trend Alternative congestion would increase which could result in travel delay. The fire departments throughout the County are responsible for maintaining adequate response times, and future projects, both transportation and development, would undergo further environmental analysis that would include evaluation and mitigation of impacts to emergency access. Impacts would be less than significant and similar to the Plan.

Conflict with Alternative Transportation Plans

Under the Trend Alternative, there would be less transportation infrastructure investment, while growth would continue to occur at forecasted rates. In 2042, the Trend Alternative would result in more VMT as compared to the Plan. The No Project Alternative would also result in less transit use and use of active mode shares compared to the Plan. Additional and/or worsened significant impacts would result from this alternative compared to those impacts identified for the Project. The increased vehicular congestion and the lack of investment in pedestrian and bicycle facilities would result in decreases in the performance of Tulare's pedestrian and bicycle facilities. Impacts would be greater than the Plan.

Utilities

Energy

Wasteful Inefficient Use of Energy

Since the Trend Alternative includes fewer transportation projects than the 2018 RTP/SCS, it would have more of an impact related to the need for expanded or newly constructed energy facilities to serve the d dispersed development accompanying population growth in the region due to less emphasis on TPAs. In addition, since fewer public transit options would be available than under the 2018 RTP/SCS and

congestion would increase, use of petroleum fuel for personal vehicles would be greater, as indicated in **Table 5.0-12**.

Table 5.0-12
Gasoline and Diesel Consumption – Trend (2042) vs. 2018 RTP/SCS (2042)

Scenario	Vehicle Miles Travelled	Daily Gasoline Consumption (thousand gallons)	Daily Diesel Consumption (thousand gallons)
Trend (2042)	12,848,274	275.76	183.01
2018 RTP/SCS (2042)	12,699,425	272.67	180.89

Source: TCAG 2018, EMFAC 2014

The Trend Alternative would accommodate the same increase in total population, households, and jobs as the 2018 RTP/SCS. However, as shown in **Table 5.0-13**, the total energy consumption under the Trend Alternative would be greater than under the 2018 RTP/SCS.

Table 5.0-13
Residential and Commercial Energy Consumption from New Growth – Trend (2042) vs. Plan (2042)

Alternative	Energy Use per Household (Million BTU Per Year)
Trend (2042)	158.9
2018 RTP/SCS (2042)	148.3

Source: TCAG, 2018.

Unlike the Trend Alternative, the 2018 RTP/SCS includes strategies to focus growth in TPAs, which would help reduce the number of new energy facilities or expansion of existing facilities that need to be constructed. This is because the 2018 RTP/SCS would accommodate the same population by constructing higher density development with infill and mixed use projects. Infill and mixed-use developments are generally higher efficiency dwellings accounting for the reduction in total energy consumption seen in **Table 5.0-13**. The Trend Alternative would permit dispersed development which could require additional electricity and natural gas facilities to serve a more dispersed land use pattern which could necessitate new or expanded facilities to serve additional areas. Lower density development would be dispersed throughout Tulare County under the Trend Alternative to satisfy the same population growth. Under the Trend Alternative, the 2018 RTP/SCS land use strategies may not occur, although individual

jurisdictions may still seek to reduce the urban footprint through their general plans. It is also possible that increased density in urban areas could put additional pressure on energy providers to increase capacity to these areas resulting in additional impacts. However, as in general, energy use would be more efficient (on a per capita basis), with the 2018 RTP/SCS, impacts would be greater with the Trend Alternative. Impacts to energy under the Trend Alternative would be significant as under the 2018 RTP/SCS.

Electricity and Natural Gas Use

The Trend Alternative would accommodate the same increase in total population, households, and jobs as the Plan, but with development occurring in a more dispersed pattern and no regional transportation investments would be made above the existing programmed projects. The population distribution would follow past trends, uninfluenced by the Plan's emphasis on TPAs, which would result in greater consumption of open space areas. Therefore, demand for electricity and natural gas would be more dispersed and not focused in urban areas. The Trend Alternative would permit dispersed development which could require additional electricity and natural gas facilities to be built in a more dispersed pattern. Under the Trend Alternative, the TPA land use strategies may not occur, although individual jurisdictions may still seek to reduce the urban footprint through their general plans. Similar to the proposed project, the Trend Alternative would result in an overall increase in electricity and natural gas demand due to increased population and economic growth .Impacts would be significant and greater than the Plan.

Wastewater

Similar to the Plan, the Trend Alternative would not exceed treatment requirements by the applicable RWQCB due to compliance with NPDES regulations.

Expansion of existing facilities or construction of new facilities would be necessary under the Plan to accommodate increases in population in urban areas and concentrated growth patterns. Under the Trend Alternative, land use strategies to focus more growth in existing urban areas may not occur to the same extent as the Project, although individual jurisdictions may still seek to reduce the urban footprint through their general plans. As with the Project, construction of new wastewater treatment facilities would also be necessary under the Trend Alternative to service the more dispersed growth pattern. Therefore, impacts would be similar with the Trend Alternative compared to the Plan. With a more dispersed growth pattern, existing sewer lines in existing urban areas would not be as impacted, although new sewer lines would be needed to serve the more dispersed growth pattern. The cost of sewer line connections for development projects on the periphery of the urban area can be significantly less than

expanding capacity of existing sewer lines in urban core areas. The resulting lower cost of sewer capacity on the periphery means that providing additional capacity can be easier in these areas than in existing urban areas. Compared to the Plan, impacts related to wastewater could be less but would remain significant.

Solid Waste

The more compact growth pattern of the Plan would likely generate less solid waste than the more dispersed pattern of the Trend Alternative due to greater efficiencies of compact development. However, as the growth strategies included in the Plan would not occur to the same extent with the Trend Alternative, longer distances could occur between development and landfill facilities and/or garbage collection would require that collection trucks travel greater distances to collect waste from the more distributed land use pattern.

The Trend Alternative would accommodate the same increase in total population, households, and jobs as the Plan. However, the Plan focuses growth in urban areas to a greater extent than the Trend Alternative, which would help reduce the impact to solid waste facilities. Therefore, impacts to landfills could be greater under the Trend Alternative; impacts would be significant as for the Plan.

Water Supply and Hydrology

Under the Trend Alternative, more areas would be impacted by excavation and construction activities related to transportation projects and development as compared to the Plan. The Trend Alternative would not focus growth in urban areas to the same extent as the Plan. Therefore, the Trend Alternative would result in development patterns consuming a greater amount of land. Specifically, development under the Trend Alternative would result in 10,525 acres of undeveloped land consumption, as compared to 8,884 under the Plan thereby increasing the amount of impervious surfaces and increasing impacts to water quality and groundwater.

Due to a more dispersed growth pattern, the Trend Alternative's impacts to flood risk would be greater than those associated with the Plan. Flooding impacts would generally be site specific although with greater consumption of vacant land, the Trend Alternative has a greater risk of locating development in flood prone areas.

Regarding groundwater recharge, the Trend Alternative would include fewer new lane miles, which could result in more permeable surface area available, compared to the Plan. However, the Trend alternative would result in greater land consumption 10,525 acres compared to 8,884 acres under the

Plan. As a result, there would be fewer opportunities for groundwater recharge and impacts would be significant and greater than the Plan.

As compact development is generally more water efficient the Trend Alternative would be less efficient and result in more water use overall. Therefore, the Trend Alternative impacts to water resources would be greater than the impacts from the Plan and would remain significant as under the Plan.

Overall the Plan would result in fewer impacts to water resources as a result of a compact growth pattern that would result in less impervious surfaces and less demand for water. Thus, impacts to water resources under the Trend Alternative would be greater than the Plan (and would remain significant).

5.2.8 Analysis of Alternative 3 – Old Plan

Aesthetics

Scenic Vistas and Resources

The Old Plan alternative includes a slightly modified transportation network without the same level of transportation improvements as the Plan. Therefore, under the Old Plan Alternative, the construction of roadways would result in opportunities for impacts to eligible State Scenic Highways and vistas similar to the Plan. Impacts would be significant and similar to the Plan.

Visual Character

Since the Old Plan Alternative includes fewer transportation projects than the proposed RTP/SCS, it would have less of an impact in terms of adding contrasting visual elements to existing natural, rural, and open space areas. The Plan includes strategies to focus growth in TPAs, which would help reduce the consumption and disturbance of natural lands and reduce impacts to visual character. Under the Old Plan Alternative, these land use strategies may not occur to the same extent as the Plan, although individual jurisdictions may still seek to reduce the urban footprint through their general plans. The land use planning strategies included in the proposed 2018 RTP/SCS would reduce consumption of vacant, open space/recreation and agricultural lands compared to the Old Project Alternative. The Old Project Alternative visual character impacts would be greater than the Plan impacts because of the increased consumption of open space, vacant land, and interspersed transportation infrastructure. Impacts would be significant.

Light and Glare

The Old Plan Alternative would not include urban form strategies to the same extent as the Plan. Nighttime lighting impacts would be greater, as more vacant land would be consumed under the Old Plan Alternative (9,110 acres compared to 8,884 acres under the Plan) since lighting impacts are most pronounced in rural areas. Therefore, the Old Plan Alternative would result in greater impacts to light and glare than the Plan and impacts would be significant (as they would be for the Plan).

A*gricultural Resources*

Farmland

The Old Plan would include generally the same land use and transportation network as the Plan. The Old Plan Alternative would encourage a compact development pattern and would consume a total of 1,403 acres of farmland (compared to 1,518 acres under the Plan). Therefore, impacts associated with the Old Plan would be slightly reduced compared to the Plan, as fewer acres of farmland would be consumed. Impacts would still be significant.

Williamson Act

The Old Plan Alternative would have similar potential for creating conflicts with General Plans and other land use regulations. Further, the Old Plan Alternative would include a similar land use scenario as the Plan and the 2014 SCS strategies that focus growth in urban areas. The impact from conversion of agricultural land and conflicts with Williamson Act contracts would be similar to the Plan under this alternative. However, as the Old Plan would result in fewer acres of farmland consumed, this impact is considered less than the Plan but still significant.

Forest and Timberland

It is unlikely that land currently defined and zoned as forest land or timberland would be converted to residential as County polices and policies of other jurisdictions focus development in already developed areas. However, the potential remains for development to occur in forest or timberland areas. The Old Plan would result in a slight increase in the number of vacant acres consumed (9,110 compared to 8,884 with the Plan). As a result, impacts would be significant and would be slightly greater with the Old Plan.

Changes in Environment Convert Farmland

The Old Plan alternative would consume fewer acres of farmland than the Plan (1,403 acres compared to 1,518 acres) but a greater number of acres of vacant land (9,110 acres compared to 8,884). On balance, impacts would generally be similar to the Plan and would remain significant. .

Air Quality

Criteria Air Pollutants

Short-Term Emissions

Short-term construction emissions of criteria pollutants would occur with implementation of the Old Plan Alternative. Short-term emissions would be similar to the 2018 RTP/SCS but might be slightly reduced due to the minor reduction in construction projects compared to the 2018 RTP/SCS.

Long-Term Emissions

Emissions of long-term criteria pollutants from mobile sources would be affected by implementation of the Old Plan Alternative. In order to analyze the net impact of implementation, existing year (2017) emissions were compared to horizon year (2042) emissions.

Results of modeling are presented in **Table 5.0-14, Criteria Pollutant Emissions from Mobile Sources**. As shown, both the 2018 RTP/SCS and the Old Plan Alternative would result in reductions of reactive organic gases (ROG), sulfur oxides (SOx), oxides of nitrogen (NOx) and carbon monoxide (CO), and reductions of emissions of fine particulate matter (PM2.5) as compared to existing conditions. These would be considered beneficial impacts. Emissions of respirable particulate matter (PM10) from mobile sources show a slight increase over existing conditions. However, as shown in **Table 5.0-14**, the 2018 RTP/SCS would result in greater reductions (i.e., fewer total emissions) for ROG, NOx, CO, PM2.5, and SOx. PM10 would increase under both Alternatives. Therefore, impacts related to criteria pollutants would be greater under the Trend Alternative.

Table 5.0-14
Criteria Pollutant Emissions from Mobile Sources – Old Plan Alternative (2042) vs. 2018 RTP/SCS (2042)

	Tons/Day					
Alternative	**ROG**	**NOx**	**CO**	**PM10**	**PM2.5**	**Sox**
Existing 2017	3.37	10.42	24.56	0.74	0.35	0.06
2018 RTP/SCS 2042	0.99	2.89	6.54	0.75	0.30	0.04
2018 RTP/SCS Net	**-2.38**	**-7.53**	**-18.02**	**0.01**	**-0.05**	**-0.02**
Old Plan 2042	1.00	2.93	6.63	0.75	0.31	0.05
Old Plan Net	**-2.37**	**-7.49**	**-17.93**	**0.01**	**-0.05**	**-0.01**

Source: TCAG 2018.

A conformity analysis was prepared for the 2018 RTP/SCS that analyzes emissions of ozone precursors (ROG and NOx), CO, PM10 and PM2.5 compared to the approved emissions budgets for mobile sources in Tulare County. The analysis found that emissions of all pollutants under the Plan passed the applicable conformity tests and would be in conformity with the State Implementation Plans (SIPs). However, both the Plan and Old Plan Alternatives would generate greater PM10 emissions by 2042. Consequently, the impact from PM10 emissions would be a significant impact. However, the *2007 PM-10 Maintenance Plan* allows for trading of NOx and PM10 emissions at a 1.5 to 1 ratio. Since the PM10 increase associated with the Plan and Old Plan alternative are relatively small, this would allow PM10 emissions to pass the

conformity test under this alternative. Consequently, the increase would not be considered substantial, and the impact related to criteria pollutant emissions would remain less than significant.

Toxic Air Contaminants

Short-Term Emissions

A construction health risk analysis would be speculative given the lack of a construction location and construction activities. However, it is reasonable to assume that some level of construction activity would occur adjacent to sensitive receptors (e.g., residences and schools). The significant construction emissions identified above could result in adverse health effects to sensitive receptors. As such, it is likely that intense construction activities (e.g., from development projects that involve a high volume of haul trucks) would exceed the health risk significance thresholds due to equipment and truck exhaust emissions. However, short-term construction emissions would be incrementally reduced under the Old Plan Alternative due to a minor reduction of construction activity as compared to the 2018 RTP/SCS.

Long-Term Emissions

As shown in **Table 5.0-14**, above, emissions of PM2.5 for all mobile sources will be reduced under the Old Plan Alternative. However, in order to more closely approximate DPM emissions, PM2.5 emissions specifically from heavy-duty diesel vehicles were estimated. The emissions generated under existing conditions as compared to the Old Plan Alternative are shown in **Table 5.0-15, PM2.5 Emissions from Heavy Duty Diesel Vehicles.**

Table 5.0-15
PM2.5 Emissions from Heavy Duty Diesel Vehicles (tons/day) – Trend (2042) vs. 2018 RTP/SCS (2042)

Existing 2017	2042 RTP Plan	2042 Old Plan
0.066	0.066	0.066

Source: TCAG 2018, EMFAC14

As shown in **Table 5.0-15**, the Old Plan Alternative would generate similar PM2.5 emissions compared to the 2018 RTP/SCS but would be less than under existing conditions. CARB has several programs and regulations in place to reduce DPM emissions state-wide. These programs and regulations would reduce DPM emissions over the period of the 2018 RTP/SCS. Consequently, it can be assumed that the reductions in PM2.5 emissions include reductions in DPM emissions region-wide.

However, on a case-by-case basis RTP improvements may also bring sources of DPM closer to sensitive receptors through construction of new facilities or widened roadways, which could increase exposure of sensitive receptors. There are more highways identified as having a higher AQI rank under the Old Plan Alternative versus existing conditions in 2017. The total receptors affected by higher AQI highways for the Old Plan Alternative would also be greater than the 2018 RTP/SCS with an additional 128 households, although the Old Plan would result in two fewer schools with a "high" AQI ranking. Therefore, this qualitative measure indicates that an increased heath risk impact could result from implementation of the Old Plan as a greater number of sensitive receptors would be located relatively close to increased truck traffic as compared to the Trend Alternative.

Although PM2.5 emissions would be reduced in Tulare County under the Old Plan Alternative, a greater number of sensitive receptors (households) would be located next to highways in 2042 than under existing conditions. The projected higher volume of truck traffic would potentially result in increased health risk to certain populations in Tulare County. Consequently, this impact would be considered significant. Overall impacts from the Old Plan alternative would be greater than those under the 2018 RTP/SCS as the 2018 RTP/SCS would result in greater emissions reductions and fewer household in high AQI areas, however, impacts would remain significant.

Biological Resources

Species Identified as a Candidate, Sensitive, or Special-Status Species

Under the Old Plan Alternative, a similar number of projects would be constructed compared to the 2018 RTP/SCS. Further, the Old Plan Alternative would include a similar land use scenario as the Plan as the 2014 SCS strategies that focus growth in urban areas would continue under this alternative. The Old Plan would result in the same number of acres of critical habitat being consumed (144 acres under both), but a slight increase in the number of acres of vacant land (9,110 acres compared to 8,884 acresunder the Plan). Similar to the proposed project, implementation of the Old Plan Alternative would have significant impacts to special status species.

Sensitive Natural Communities and Federally-Protected Wetlands

Because the Old Plan Alternative includes a similar amount of critical habitat consumed and a similar dispersed land use pattern, it is likely that a similar number acres of wetlands and sensitive natural communities would be affected with the Old Project Alternative as compared to the Plan. As a result, impacts would be significant and similar to the Plan.

Wildlife Movement

Direct impacts to wildlife movement include increased noise and human presence during construction, as well as increased trash, which may attract predators to the project site and discourage wildlife use of surrounding natural habitat. Increased roadway traffic, due to the division of habitat and corridors, may affect surrounding wildlife and lead to increased wildlife mortality. The Old Plan Alternative includes a similar number of projects as the 2018 RTP/SCS and therefore would also result in direct impacts to wildlife movement and impacts to wildlife movement by habitat modification. Therefore, impacts under the Old Plan Alternative would be significant and similar to the 2018 RTP/SCS.

Preservation Plans

The Old Plan Alternative would result in similar impacts to vacant land and critical habitat consumption that would increase biological resources impacts and the potential to conflict with ordinances and plans regarding biological resources. Therefore, there would be similar impacts as under the 2018 RTP/SCS.

Cultural Resources

Historical Resources

Under the Old Plan Alternative, the transportation and land use scenarios would be generally the same as the 2018 RTP/SCS with some minor adjustments. Therefore, impacts under the Old Plan would result in similar impacts as the Plan. In urban areas, there would still be opportunities for impacts to build historical resources to occur resulting in a significant impact; however due to the greater emphasis on urban development in the Plan, impacts would be less for the Old Plan Alternative but still significant.

Archeological and Paleontological Resources, Human Remains, and Tribal Cultural Resources

Under the Old Plan there would be a slight increase in the number of acres of vacant land that would be consumed which would increase the chance to uncover previously undisturbed resources such as archeological, paleontological and tribal cultural resources as development would occur in previously undeveloped areas. As such, the Old Plan Alternative would also result in significant impacts related to human remains and impacts could be greater because of the greater area of undeveloped land impacted.

Greenhouse Gas Emissions

GHG Emissions Estimates

Similar to the 2018 RTP/SCS, the 2014 RTP/SCS includes strategies aimed at increasing the density of land use in Tulare County, thereby reducing per capita VMT and GHG emissions. In all analysis years, emissions would be higher under the Old Plan Alternative. The first significance threshold for GHG emissions is whether the project would result in emissions that could have a significant impact on the environment. In 2042 mobile source emissions would be 1,669,134 ~~$MTCO_2e/yr$~~ tons/year of CO_2 under the Old Project Alternative, compared to 1,664,730 ~~$MTCO_2e/yr$~~ tons/year of CO_2 under the 2018 RTP/SCS, which is a 0.3 percent increase compared to the 2018 RTP/SCS. Mobile source emissions under 2017 existing conditions are approximately 2,229,808 ~~$MTCO_2e/yr$~~ tons/year of CO_2.[8] Both the Old Plan and the Plan scenarios would result in greater GHG mobile source emissions than under existing conditions.

The 2018 RTP per capita GHG emissions from cars and light duty trucks would be reduced by 12.8 percent in 2020 and 16.6 percent in 2035 compared to the SB 375 2005 base year. This compares with reductions of 12.1 percent, and 16.1 percent respectively for the Old Project Alternative. Consequently, TCAG would meet its targets for GHG reductions under SB 375 with and without the 2018 RTP/SCS. Therefore, impacts would be less than significant for consistency with SB 375 and AB 32 for both the Plan and Old Project Alternative.

The second significance threshold for GHG emissions is whether the project would result in greater emissions than under existing conditions (i.e., would emissions in 2042 be greater than in 2017). As shown in **Table 5.0-4**, in 2042 daily GHG emissions would be 4,636 ~~metric~~ tons of CO_2 ~~equivalents ($MTCO_2e$)~~ under the Old Plan Alternative, compared to 4,561 ~~$MTCO_2e$~~ tons of CO_2 under the 2018 RTP/SCS. The Old Plan Alternative would generate less emissions than under existing conditions, but generate more emissions compared to the 2018 RTP/SCS.

Consistency With Plans

The third threshold asks whether the project would hinder progress toward the goals of applicable GHG reductions plans such as AB 32, SB 375, and SB 32 (i.e., would emissions in 2020 be the same as emissions in 1990).

[8] TCAG, 2018 and *EMFAC14*

SB 375

For Tulare County, CARB determined that the 2020 target is a 5 percent reduction from 2005 emissions levels, and the 2035 target is a 10 percent reduction. Although implementation of the Old Plan Alternative would provide less reduction of GHG compared to the 2018 RTP/SCS, this alternative would exceed these GHG reduction targets, providing reductions of 13 percent reduction in 2020 and 14 percent in 2035 (**Table 5.0-16**).

~~**Table 5.0-16**~~
~~**Old Plan Alternative SB 375 Greenhouse Gas Emissions and Vehicle Trips Reductions**~~

~~Indicators & Measures~~	~~2005 Baseline~~	~~2020 Old Plan~~	~~2035 Old Plan~~
~~Total Population~~	~~404,148~~	~~488,293~~	~~568,186~~
~~**Vehicle Miles Traveled (VMT)**~~			
~~VMT per Weekday~~	~~8,705,754~~	~~9,313,321~~	~~10,678,457~~
~~Per Capita VMT SB 375~~	~~21.54~~	~~19.07~~	~~18.79~~
~~Difference between 2005 Base Per Capita VMT (21.54 miles)~~	~~0.0%~~	~~-11.46%~~	~~-12.75%~~
~~**SB 375 CO_2 Emissions**~~			
~~Total SB 375 CO_2 Emissions (tons/day)~~	~~3,404~~	~~3,600~~	~~4,094~~
~~Per Capita SB 375 CO_2e Emissions (lbs/day)~~	~~18.57~~	~~16.25~~	~~15.89~~
~~Difference between 2005 Base Per Capita CO_2 (18.57 lbs)~~	~~0.0%~~	~~-12.5%~~	~~-14.4%~~
~~SB 375 Targets Through September 30, 2018 (3/22/2018)~~	~~0.0%~~	~~-5.0%~~	~~-10.0%~~
~~SB 375 Targets Through October 1, 2018 (3/22/2018)~~	~~0.0%~~	~~-13.0%~~	~~-16%~~

~~*Source: TCAC, 2018.*~~

Table 5.0-16
Old Plan Alternative SB 375 Greenhouse Gas Emissions and Vehicle Trips Reductions

Indicators & Measures	2005 Baseline	2020 Old Plan	2035 Old Plan
Total Population	404,148	488,293	568,186
Vehicle Miles Traveled (VMT)			
VMT per Weekday	8,705,754	9,313,321	10,678,457
Per Capita VMT SB 375	21.54	19.07	18.79
Difference between 2005 Base Per Capita VMT (21.54 miles)	0.0%	-11.46%	-12.75%
SB 375 CO_2 Emissions			
Total SB 375 CO_2 Emissions (tons/day)	3,404	3,600	4,094
Per Capita SB 375 CO_2 Emissions (lbs/day)	16.84	14.74	14.41
Difference between 2005 Base Per Capita CO_2 (16.84 lbs)	0.0%	-12.5%	-14.4%

Indicators & Measures	2005 Baseline	2020 Old Plan	2035 Old Plan
SB 375 Targets Through September 30, 2018 (3/22/2018)	0.0%	-5.0%	-10.0%
SB 375 Targets Through October 1, 2018 (3/22/2018)	0.0%	-13.0%	-16%

Source: TCAG, 2018.

AB 32

GHG emissions per household would be approximately the same under the 2018 RTP/SCS than under the Old Plan Alternative (13.8 ~~MTCO$_2$e/Year~~ tons/year of CO_2 per household compared to 13.8 ~~MTCO$_2$e/Year~~ tons/year of CO_2 per household). However, data regarding energy use and therefore GHG emissions from commercial, industrial, agricultural and other sources is not available. While energy use per household would decrease as a result of the more compact land use growth pattern, total energy use as a result of all land use activities would increase substantially between now and 2042.

As shown in **Table 5.0-6,** per capita GHG emissions for the Old Plan Alternative would be 33 percent below 1990 levels by 2020, total mobile source GHG emissions are projected to increase by approximately four percent. This is approximately the same level of emissions reduction as compared to the 2018 RTP/SCS.

SB 32

SB 32 sets the statewide GHG emissions reduction target for the year 2030; similar to AB 32 setting statewide GHG emissions reduction target for the year 2020. SB 32 requires a reduction in GHG emissions of 40 percent below 1990 levels. As shown in **Table 5.0-6**, emissions from transportation sources in Tulare County would not meet these targets, providing an increase in emissions in 2020 of five percent, and a decrease in emissions in 2035 of 17 percent. Neither the 2020 nor 2035 projections reduce emissions by 40 percent as compared to 1990 levels. These emission reductions are less than the reductions provided by the 2018 RTP/SCS. Both the 2018 RTP/SCS and the Old Project Alternative would have significant impacts with respect conflicting with the state's ability to achieve SB 32 and EO S-3-05 GHG reduction targets. However, in all years emissions under the Plan would be less than under the Old Project Alternative. Therefore, impacts associated with SB 32 and EO S-3-05 conflicts would also be less with the 2018 RTP/SCS than the Old Plan Alternative for all thresholds and all years analyzed.

Land Use

Conflict with Plan, Policy or Regulation

The Old Plan Alternative would result in similar land use pattern as compared to the Plan. The Old Plan Alternative would consume an estimated 9,110 acres of undeveloped land, while the Plan would consume 8,884 acres of vacant land. Thus, impacts related to consistency with plans and polices, under the Old Alternative would be significant (as under the Project).

Disrupt a Community

New roadways and/or the addition of new lanes to existing freeways and roadways have the potential to divide communities. Due to the slightly more dispersed pattern of the Old Plan Alternative, the Old Plan Alternative would have fewer impacts on existing uses than the Plan and would be less likely to divide an established community. This would, in part, occur as there are fewer transportation projects in the Old Plan Alternative, reducing the potential for either short-term construction impacts or long-term land use impacts. The impacts of fewer roadway projects under the Old Plan would result in fewer impacts as compared to the Plan Alternative. Development impacts are less clear, since under the Plan development would be concentrated in urban areas. In contrast, in the Old Plan Alternative land uses would change to greater extent in undeveloped areas; as under the Plan impacts would be significant.

Noise

Exposure to Excess Noise Levels, Substantial Permanent or Temporary Increases in Noise

The Old Plan Alternative would result in a slightly more distributed growth pattern, which would increase noise levels across the County not just in concentrated urban areas. Noise levels would be less concentrated (including urban areas) as there would be less construction and less activity. However, impacts from construction and increased vehicle trips due to population growth would still be significant.

Vibration

The transportation improvements under the 2018 RTP/SCS and the Old Plan would help to move traffic more efficiently which could reduce vibration in urban areas but not to the point of off-setting increased vehicle trips. Similarly, with vibration in general, vibration impacts can be reduced to a level of less than significance, but as for the 2018 RTP/SCS, there remains the potential for individual projects in the region to result in significant vibration impacts. Thus, impacts related to noise and groundborne vibration under the Old Plan Alternative would be similar to under the 2018 RTP/SCS and would be significant.

Airport Noise

Similar to the Plan, some land use projects under the Old Project Alternative could be located within an area covered by an airport land use plan or in the vicinity of a private airstrip. However, the 2014 RTP/SCS and existing plans and regulations, including the Tulare County Comprehensive Airport Land Use Plan (ALUP) and Federal Aviation Administration regulation of airports and airstrips, would minimize noise emissions levels for people residing or working in the project area. Therefore, impacts would be similar to the Plan and less than significant.

Population, Housing and Employment

Induce Population

The Old Plan Alternative has the same population, household, and employment growth as the Plan. Given that the population, household, and employment growth would be the same at the regional level, the Old Plan Alternative would have similar although potentially greater impacts with respect to inducing unplanned growth because the Old Plan would not have strategies to focus growth in TPAs.

Displacement

The Old Plan Alternative's growth strategies would also focus future population in urban areas to a similar extent as the Plan. Plan growth strategies would result in a slightly more compact development around transit due to refinements in the land use strategies and the addition of some new transportation projects. Both alternatives are likely to result in displacing businesses or homes as development would be focused in urbanized areas. In many of these urbanized areas vacant land is scarce, resulting in a greater potential for projects to displace existing uses. Therefore, impacts under the Old Plan would be similar in urbanized areas. Overall impacts would be similar to the Plan and would remain significant.

Public Services

Police and Fire

The Old Plan Alternative would result in similar transportation-related public service impacts as compared to the Plan. The Old Plan Alternative and the Plan alternatives include the same number of population, housing, and jobs that would require police, fire, and emergency facilities. A slightly more dispersed pattern of development, as would occur under the Old Plan, could result in people located further from existing police and fire facilities, necessitating the construction of new facilities to maintain appropriate response times. The determination of the need for and/or location of new construction for such facilities under either the Plan or Old Plan Alternative would be speculative at this time. In addition,

construction of such facilities generally has minor impacts. The Old Project impacts would be similar to those under the Plan for police and fire services and new facilities.

Schools

The Old Plan Alternative would result in similar demand for school facilities as under the Plan. The Old Plan may not result in the same level of urbanization as the Plan; however, the same number of students would be generated under both scenarios. Any impacts from construction of new schools would occur at the local level. Therefore, impacts associated with the Old Plan and the Plan would be similar and would be less than significant.

Recreation

The Old Plan Alternative would accommodate the same increase in total population, households, and jobs as the Plan, but with development occurring in a slightly more dispersed pattern. Therefore, demand for recreational opportunities would also be more dispersed throughout the region. Under the Old Plan Alternative, the land use strategies focusing growth in urban areas may not occur to the same extent as under the Plan, although individual jurisdictions may still seek to reduce the urban footprint through their general plans.

Both the Plan and the Old Plan Alternative would increase demand for recreation facilities in urban areas, this demand may be harder to meet as land prices and development may preclude sufficient development of recreation facilities. Similar to the impact of Plan implementation, implementation of the Old Project Alternative would be less than significant.

Transportation

Substantial Increases in VMT

Under the Old Plan Alternative, there would be less transportation infrastructure investment, while growth would continue to occur at forecasted rates. In 2042, the Old Plan Alternative would result in 12,897,144 VMT as compared to 12,699,425 VMT with the Plan. Additional or worsened impacts would result from this alternative compared to those impacts identified for the Plan.

Conflict with CMP

Under the Plan, compared to existing conditions, traffic volumes would increase throughout the region and congestion would increase regionwide, especially in urban areas. Under the Old Plan Alternative, increased vehicular congestion would result in more roadway segments with unacceptable LOS D.

Therefore, traffic volumes would similarly increase and congestion would increase. Therefore, a similar significant impact would occur under this alternative.

Change in Air Traffic

Similar to the conclusions of Plan implementation, the Old Plan Alternative would also not by itself result in changes in air traffic patterns. However, the similar increased population that would occur by 2042 would likely result in increased air traffic. As with the proposed project, iimplementation of the Tulare County Comprehensive Airport Land Use Plan (ALUP) would avoid safety risks associated with air traffic to the extent feasible. The impact to a change in air traffic patterns would similarly be less than significant.

Increase Hazards

Similar to the Plan, the Old Plan Alternative would not result in increased hazards due to design feature (e.g., sharp curves or dangerous intersections) or increase conflicts between incompatible uses (e.g., farm equipment and other vehicular traffic). Design of new transportation facilities, including new pedestrian and bicycle facilities, takes into account potential hazards and avoids risks to the extent feasible. Impacts would be less than significant.

Inadequate Emergency Access

Under the Old Plan Alternative congestion would increase which could result in travel delay. The fire departments throughout the County are responsible for maintaining adequate response times, and future projects, both transportation and development, would undergo further environmental analysis that would include evaluation and mitigation of impacts to emergency access. Impacts would be less than significant and similar to the Plan.

Conflict with Alternative Transportation Plans

Under the Old Plan Alternative, there would be less transportation infrastructure investment, while growth would continue to occur at forecasted rates. In 2042, the Old Plan Alternative would result in more VMT as compared to the Plan. The Old Plan Alternative would also result in less transit use and use of active mode shares compared to the Plan. Additional and/or worsened significant impacts would result from this alternative compared to those impacts identified for the Project. The increased vehicular congestion and the lack of investment in pedestrian and bicycle facilities would result in decreases in the performance of Tulare's pedestrian and bicycle facilities. Impacts would be greater than the Plan.

Utilities

Energy

Wasteful Inefficient Use of Energy

The Old Plan Alternative would accommodate the same increase in total population, households, and jobs as the 2018 RTP/SCS. However, as shown in **Table 5.0-17**, petroleum fuel for personal vehicles would be greater under the Old Plan.

Table 5.0-17
Gasoline and Diesel Consumption – Old Plan (2042) vs. 2018 RTP/SCS (2042)

Alternative	Vehicle Miles Travelled	Daily Gasoline Consumption (thousand gallons)	Daily Diesel Consumption (thousand gallons)
Old Plan (2042)	12,897,144	277.34	183.71
2018 RTP/SCS (2042)	12,699,425	272.67	180.89

Source: TCAG 2018, EMFAC 2014

The Old Plan Alternative would accommodate the same increase in total population, households, and jobs as the 2018 RTP/SCS. However, as shown in **Table 5.0-18**, the total energy consumption under the Old Plan Alternative would be slightly less than under the 2018 RTP/SCS.

Table 5.0-18
Household Energy Use –Old Plan (2042) vs. Plan (2042)

Alternative	Energy Use per Household (Million BTU Per Year)
Old Plan (2042)	148.1
2018 RTP/SCS (2042)	148.3

Source: TCAG, 2018.

Impacts to energy under the Old Plan Alternative would be significant as under the 2018 RTP/SCS.

Electricity and Natural Gas Use

The Old Plan Alternative would accommodate the same increase in total population, households, and jobs as the Plan, but with development occurring in a slightly more dispersed pattern. Therefore, demand

for electricity and natural gas under this alternative would be slightly more dispersed and less focused in urban areas. Under the Old Plan Alternative, the TPA land use strategies may not occur, although individual jurisdictions may still seek to reduce the urban footprint through their general plans. As the land use pattern would be generally the same as the Plan (although less compact), the need for new or expanded facilities would be similar to the Plan. Similar to the proposed project, the Old Plan Alternative would result in an overall increase in electricity and natural gas demand due to increased population and economic growth.

Wastewater

Similar to the Plan, the Old Plan Alternative would not exceed treatment requirements by the applicable RWQCB due to compliance with NPDES regulations.

Expansion of existing facilities or construction of new facilities would be necessary under the Plan to accommodate increases in population in urban areas and concentrated growth patterns. Under the Old Plan Alternative, land use strategies to focus more growth in existing urban areas may not occur to the same extent as the Plan, although individual jurisdictions may still seek to reduce the urban footprint through their general plans. As with the Project, construction of new wastewater treatment facilities would also be necessary under the Old Plan Alternative to service the more dispersed growth pattern. Therefore, impacts would be similar with the Old Plan Alternative compared to the Plan. Compared to the Plan, impacts related to wastewater would be similar and would remain significant.

Solid Waste

The similar growth patterns under the Plan and Old Plan would generate similar amounts of waste. The Old Plan Alternative would accommodate the same increase in total population, households, and jobs as the Plan. However, the Plan focuses growth in urban areas to a greater extent than the Old Plan, which would help reduce the impact to solid waste facilities. Therefore, impacts to landfills could be greater under the Old Plan Alternative; impacts would be significant as for the Plan.

Water Supply and Hydrology

Under the Old Plan Alternative, more areas would be impacted by excavation and construction activities related to transportation projects and development as compared to the Plan. The Old Plan Alternative would not focus growth in urban areas to the same extent as the Plan. Therefore, the Old Plan Alternative would result in development patterns consuming a greater amount of land. Specifically, development under the Old Plan Alternative would result in 9,110 acres of undeveloped land consumption, as

compared to 8,884 under the Plan thereby increasing the amount of impervious surfaces and increasing impacts to water quality and groundwater.

Due to a slightly more dispersed growth pattern, the Old Plan Alternative's impacts to flood risk would be greater than those associated with the Plan. Flooding impacts would generally be site specific although with greater consumption of vacant land, the Old Plan Alternative has a greater risk of locating development in flood prone areas.

With regard to groundwater recharge, the Old Plan would include a similar number of lane miles and a slightly less compact growth pattern. Comparatively there would be an increase in total acres consumed (9,110 acres under the Old Plan) compared to the Plan (8,884 acres). Overall, the Plan would result in similar impacts to water resources as a result of a similar land use patterns and similar demands for water. Thus, impacts to water resources under the Old Plan Alternative would be the same as the Plan and would remain significant.

5.2.9 Analysis of Alternative 4 – Blueprint Plus

Aesthetics

Scenic Vistas and Resources

Under the Blueprint Plus Alternative more aggressive growth strategies would be applied to the region. Impacts related to eligible State Scenic Highways and vistas would generally be the same as the Plan since Blue print Plus would include similar transportation networks, however the Blueprint Plus would accelerate implementation of transit, bike and pedestrian facilities.

Visual Character

Since the Blueprint Plus Alternative includes a greater number of transportation projects than the proposed RTP/SCS, it would have more of an impact in terms of adding contrasting visual elements to existing natural, rural, and open space areas. The Plan includes strategies to focus growth in TPAs, which would help reduce the consumption and disturbance of natural lands and reduce impacts to visual character. Under the Blueprint Plus Alternative, these land use strategies would be intensified to increase density and transit in urban areas. The Plan includes transportation improvements that facilitate access to undeveloped lands, making those lands more attractive for development. The Blueprint alternative would have a greater number of these transportation projects and therefore would have more development in open space. However, similar to the Plan, the Blueprint Alternative includes policies to dissuade such encroachment on open space and vacant lands. Similar to the 2018 RTP/SCS, the Blueprint

Plus Alternative would include land use planning strategies to reduce consumption of vacant, open space/recreation and agricultural lands. The Blueprint Plus Alternative visual character impacts would be slightly greater than the Plan impacts.

Light and Glare

Under this alternative more aggressive growth strategies would be applied to the region, which would potentially result in greater impacts related to light and glare and visual character of neighborhoods as more intense development occurs within urban areas; however such impacts generally occur in urban areas. Taller buildings could be incongruous with existing surroundings and could overwhelm historic buildings and/or existing neighborhoods. However, as more development is focused in urban areas, fewer aesthetic and nighttime lighting impacts would occur in undeveloped areas. Therefore, impacts to light and glare under the Blueprint Plus would be similar to the Plan and significant.

Agricultural Resources

Farmland

Under the Blueprint Plus Alternative more development would be targeted in urban areas as compared to the Plan resulting in fewer acres of farmland consumed. The Blueprint Plus Alternative would consume a total of 1,353 acres of farmland, as compared to 1,518 under the Plan. The Blueprint Plus Alternative would include more urban form strategies that would further focus growth within urban areas and as a result, would result in the consumption of fewer acres of farmland compared to the Plan.

Williamson Act

Under the Blueprint Plus Alternative more development would be targeted in urban areas as compared to the Plan. Thus, the Blueprint Plus Alternative could ultimately result in a less dispersed land use pattern across the region, which could have lesser impacts related to conversion of agricultural land and create conflicts with Williamson Act contracts. The Blueprint Plus Alternative includes greater transportation projects than the Plan, but there would also be more focused development in existing urban areas to avoid Williamson Act lands. Impacts under the Blueprint Plus Alternative would be less than the proposed 2018 RTP/SCS for impacts to Williamson Act lands.

Forest and Timberland

Impacts to forest lands would also be less than significant (similar to the Plan) because of the increased focus on developing in urban areas. The more compact land use pattern of the Blueprint Plus would further reduce the potential for development in areas that currently contain forestland. Therefore, the

Blueprint Plus would result in less impact to agricultural and forestry resources as compared to the Plan; however, impacts would remain significant for agriculture and less than significant for forestry.

Changes in Environment Convert Farmland

The 2018 RTP/SCS would direct more growth to already urbanized areas, thereby reducing the amount of agricultural lands that would be converted to non-agricultural uses. Under the Blueprint Plus Alternative, growth would be concentrated in urban areas. Therefore, fewer agricultural lands would be converted to non-agricultural uses (1,353 acres compared to 1,518 acres with the Plan). The Blueprint Plus Alternative would increase mobility choices and capacity within urban areas. Therefore, the pressure under this alternative to convert agricultural lands located near the periphery of these built-out areas to urban land uses could increase as transportation improvements are made. The impact from changes in environment which would result in conversion of farmland would be less but still significant under this alternative.

Air Quality

Criteria Air Pollutants

Short-Term Emissions

Short-term construction emissions of criteria pollutants would occur with implementation of the Blueprint Plus Alternative. Countywide, it is likely that more than one project would be under construction at any one time, resulting in greater emissions. Short-term emissions would be similar as compared to the 2018 RTP/SCS due to the similar amount of construction projects related to implementation of the Blueprint Plus Alternative.

Long-Term Emissions

Emissions of long-term criteria pollutants from mobile sources would be affected by implementation of the Blueprint Plus Alternative. In order to analyze the net impact of implementation, existing year (2017) emissions were compared to horizon year (2042) emissions.

Results of modeling are presented in **Table 5.0-19, Criteria Pollutant Emissions from Mobile Sources**. As shown, both the 2018 RTP/SCS and the Blueprint Plus Alternative would result in reductions of reactive organic gases (ROG), sulfur oxides (SOx), oxides of nitrogen (NOx) and carbon monoxide (CO), and reductions of emissions of fine particulate matter (PM2.5). These would be considered beneficial impacts. Emissions of respirable particulate matter (PM10) from mobile sources show a slight increase over existing conditions. However, as shown in **Table 5.0-19**, the 2018 RTP/SCS would result in greater

reductions (i.e., fewer total emissions) for ROG, NOx, CO, PM2.5, and SOx. PM10 would increase under both scenarios. Therefore, impacts related to criteria pollutants would be greater under the Blueprint Plus Alternative.

Table 5.0-19
Criteria Pollutant Emissions from Mobile Sources – Blueprint Plus Alternative (2042) vs. Plan (2042)

	Tons/Day					
Scenario	**ROG**	**NOx**	**CO**	**PM10**	**PM2.5**	**SOx**
Existing 2017	3.37	10.42	24.6	0.74	0.35	0.06
2018 RTP/SCS 2042	0.99	2.89	6.54	0.75	0.30	0.04
2018 RTP/SCS Net	**-2.38**	**-8.02**	**-7.53**	**0.01**	**-0.05**	**-0.02**
Blueprint Plus	0.98	2.88	6.51	0.74	0.30	0.04
Blueprint Plus Net	**-2.39**	**--7.54**	**-18.05**	**0.00**	**-0.05**	**-0.02**

Source: TCAG 2018; EMFAC14

A conformity analysis was prepared for the 2018 RTP/SCS that analyzes emissions of ozone precursors (ROG and NOx), CO, PM10 and PM2.5 compared to the approved emissions budgets for mobile sources in Tulare County. The analysis found that emissions of all pollutants under the Plan passed the applicable conformity tests and would be in conformity with the State Implementation Plans (SIPs). However, both the Plan and Blueprint Plus Alternatives would generate greater PM10 emissions by 2042. Consequently, the impact from PM10 emissions would be a significant impact. However, the *2007 PM-10 Maintenance Plan* allows for trading of NOx and PM10 emissions at a 1.5 to 1 ratio. Since the PM10 increase associated with the Plan and Blueprint Plus Alternative are relatively small, this would allow PM10 emissions to pass the conformity test under this alternative. Consequently, the increase would not be considered substantial, and the impact related to criteria pollutant emissions would remain less than significant.

Toxic Air Contaminants

Short-Term Emissions

A construction health risk analysis would be speculative given the lack of a construction location and construction activities. However, it is reasonable to assume that some level of construction activity would occur adjacent to sensitive receptors (e.g., residences and schools). The significant construction emissions identified above could result in adverse health effects to sensitive receptors. As such, it is likely that intense construction activities (e.g., from development projects that involve a high volume of haul trucks) would exceed the health risk significance thresholds due to equipment and truck exhaust emissions.

However, short-term construction emissions would be similar under the Blueprint Plus Alternative due to a similar amount of construction activity within Tulare County as compared to the 2018 RTP/SCS.

Long-Term Emissions

PM2.5 emissions will be used as a proxy for DPM emissions in this analysis as further described in **Section, 4.3 Air Quality**. As shown in **Table 5.0-19**, above, emissions of PM2.5 for all mobile sources will be reduced under the Blueprint Plus Alternative. However, in order to more closely approximate DPM emissions, PM2.5 emissions specifically from heavy-duty diesel vehicles were estimated. The emissions generated under existing conditions as compared to the Blueprint Plus Alternative are shown in **Table 5.0-20, PM2.5 Emissions from Heavy Duty Diesel Vehicles.**

Table 5.0-20
PM2.5 Emissions from Heavy Duty Diesel Vehicles (tons/day) – Blueprint Plus (2042) vs. 2018 RTP/SCS (2042)

Existing 2017	2042 RTP/SCS	2042 Blueprint Plus
0.066	0.066	0.066

Source: Tulare COG 2014; EMFAC14

As shown in **Table 5.0-20**, the Blueprint Plus Alternative would generate similar PM2.5 emissions compared to the 2018 RTP/SCS but would be less than under existing conditions. CARB has several programs and regulations in place to reduce DPM emissions state-wide. These programs and regulations would reduce DPM emissions over the period of the 2018 RTP/SCS. Consequently, it can be assumed that the reductions in PM2.5 emissions include reductions in DPM emissions region-wide.

However, on a case-by-case basis RTP improvements may also bring sources of DPM closer to sensitive receptors through construction of new facilities or widened roadways, which could increase exposure of sensitive receptors. There are more highways identified as having a higher AQI rank under the Blueprint Plus Alternative versus the existing conditions in 2017. The total receptors affected by higher AQI highways for the Blueprint Plus Alternative would be less than the 2018 RTP/SCS. The 2018 RTP/SCS would locate more schools and hospitals near higher traffic highways, but would locate less housing near high AQI highways. Under the Blueprint Plus Alternative, there would be less hospitals located near medium AQI highways. Therefore, this qualitative measure indicates that a similar heath risk impact could result from implementation of the Blueprint Plus Alternative as more sensitive receptors would be located relatively close to increased truck traffic.

Although PM2.5 emissions would be reduced in Tulare County under the Blueprint Plus Alternative, more sensitive receptors located next to highways in 2042 than under existing conditions. The projected higher volume of truck traffic would potentially be increased health risk to certain populations in Tulare County. In addition, given the lack of data regarding industrial and other stationary sources of TACs, it is unknown whether these sources would result in increased emissions of TACs in 2042 compared to existing conditions, and therefore it is unknown what their impact on health risks in Tulare County would be. Consequently, this impact would be considered y significant. Overall impacts from the Blueprint Plus alternative would be less than those under the 2018 RTP/SCS, but would remain significant.

Biological Resources

Species Identified as a Candidate, Sensitive, or Special-Status Species

Under the Blueprint Plus Alternative, fewer areas would be impacted by excavation and construction activities as compared to the Plan. The Blueprint Plus Alternative would include a greater amount of infill development compared to the Plan. Therefore, the Blueprint Plus Alternative would result in transportation projects and development taking place over a smaller area of land. Specifically, new transportation projects and development included in the Blueprint Plus Alternative would result in 8,487 acres of vacant land consumption, as compared to 8,884 acres under the Plan. However, both would result in the same number of acres of critical habitat consumed (144). Vacant land could also include land used by species for habitat. Therefore, the Blueprint Plus Alternative impacts to special-status species would be reduced compared to the Plan as fewer acres of vacant land would be consumed. Impacts would still be significant.

Sensitive Natural Communities and Federally-Protected Wetlands

Because the Blueprint Plus Alternative includes the same amount of critical habitat consumed and a more compact land use pattern, it is likely that fewer wetlands and sensitive natural communities would be affected with the Blueprint Plus Alternative than under the Plan. Impacts would remain significant but would be less than the Plan.

Wildlife Movement

Direct impacts to wildlife movement include increased noise and human presence during construction, as well as increased trash, which may attract predators to the project site and discourage wildlife use of surrounding natural habitat. Increased roadway traffic, due to the division of habitat and corridors, may affect surrounding wildlife and lead to increased wildlife mortality. The Blueprint Plus Alternative

includes more transportation projects than the 2018 RTP/SCS and therefore would be more likely to result in direct impacts to wildlife movement; however, the less dispersed growth pattern of this alternative could result in less impacts to wildlife movement by habitat modification. Therefore, on balance, impacts under the Blueprint Plus would be significant and similar to the 2018 RTP/SCS.

Preservation Plans

The Blueprint Plus Alternative would result in less vacant land and, but a similar amount of critical habitat consumption, as a result, there would be fewer opportunities to conflict with ordinances and plans regarding biological resources. Impacts would be less than the Plan but still significant.

Cultural Resources

Historical Resources

With more development in urban areas there would be more opportunity for impacts to existing built historical resources. Impacts to historical resources under the Blueprint Plus Alternative would be greater than those under the Plan and significant.

Archeological and Paleontological Resources, Human Remains, and Tribal Cultural Resources

Under the Blueprint Plus Alternative, fewer undeveloped areas would be impacted by excavation and construction activities related to transportation projects as compared to the Plan. The Blueprint Plus Alternative focuses more development in infill areas with further expansion of non-motorized transportation. Under the Blueprint Plus Alternative, development would result in 8,487 acres of new land consumption as compared to 8,884 acres under the Plan, thereby exposing fewer previously undisturbed cultural resources. Further, as development would be focused in urban areas, impacts related to accidental discovery of archeological resources, paleontological resources and tribal cultural resources would generally be reduced. Similarly, this alternative would also result in significant impacts related to human remains. Impacts would be less due to increased density of this alternative.

Greenhouse Gas Emissions

GHG Emissions Estimates

The Blueprint Plus Alternative would include strategies aimed at an even greater increase in the density of land use in Tulare County compared to the 2018 RTP/SCS, thereby reducing per capita VMT and GHG emissions. The Blueprint Plus alternative would result in lower emission than the Plan due to a comparative increase in infill development. The first significance threshold for GHG emissions is whether

the project would result in emissions that could have a significant impact on the environment. In 2042 mobile source emissions would be 1,663,620 ~~$MTCO_2e/yr$~~ tons/year of CO_2 under the Blueprint Plus Alternative, compared to 1,664,730 ~~$MTCO_2e/yr$~~ tons/year of CO_2 under the 2018 RTP/SCS, which is a 0.6 percent decrease compared to the 2018 RTP/SCS. Mobile source emissions under 2017 existing conditions are approximately 2,229,808 ~~$MTCO_2e/yr$~~ tons/year of CO_2.[9] However, both the Blueprint Plus Alternative and the Plan would result in greater GHG mobile source emissions than under existing conditions. This impact would be significant.

The second significance threshold for GHG emissions is whether the project would result in greater emissions than under existing conditions (i.e., would emissions in 2042 be greater than in 2017). As shown in **Table 5.0-4**, in 2042 daily GHG emissions would be 4,546 ~~$MTCO_2e$~~ tons of CO_2 under the Blueprint Plus Alternative, compared to 4,561 ~~$MTCO_2e$~~ tons of CO_2 under the 2018 RTP/SCS. The Blueprint Plus Alternative would generate less emissions than under existing conditions, as well as generate less emissions compared to the 2018 RTP/SCS.

Consistency with Plans

The third threshold asks whether the project would hinder progress toward the goals of applicable GHG reductions plans such as AB 32, SB 375, and SB 32 (i.e., would emissions in 2020 be the same as emissions in 1990).

SB 375

For Tulare County, CARB determined that the 2020 target is a 5 percent reduction from 2005 emissions levels, and the 2035 target is a 10 percent reduction. Implementation of the Blueprint Plus Alternative would provide greater reduction of GHG compared to the 2018 RTP/SCS, and this alternative would exceed these GHG reduction targets, providing reductions of 13 percent reduction in 2020 and 17 percent in 2035 (**Table 5.0-21**).

[9] TCAG, 2018 and *EMFAC14*

~~**Table 5.0-21**~~

~~**Blueprint Plus Alternative SB 375 Greenhouse Gas Emissions and Vehicle Trips Reductions**~~

~~Indicators & Measures~~	~~2005 Baseline~~	~~2020 Blueprint Plus~~	~~2035 Blueprint Plus~~
~~Total Population~~	~~404,148~~	~~488,293~~	~~568,186~~
~~**Vehicle Miles Traveled (VMT)**~~			
~~VMT per Weekday~~	~~8,705,754~~	~~9,260,388~~	~~10,408,276~~
~~Per Capita VMT SB 375~~	~~21.54~~	~~18.96~~	~~18.32~~
~~Difference between 2005 Base Per Capita VMT (21.54 miles)~~	~~0.0%~~	~~-11.96%~~	~~-14.96%~~
~~**SB 375 CO_2 Emissions**~~			
~~Total SB 375 CO_2 Emissions (tons/day)~~	~~3,404~~	~~3,580~~	~~3,980~~
~~Per Capita SB 375 CO_2e Emissions (lbs/day)~~	~~18.57~~	~~16.16~~	~~15.44~~
~~Difference between 2005 Base Per Capita CO_2 (18.57 lbs)~~	~~0.0%~~	~~-13.0%~~	~~-16.8%~~
~~SB 375 Targets Through September 30, 2018 (3/22/2018)~~	~~0.0%~~	~~-5.0%~~	~~-10.0%~~
~~SB 375 Targets Through October 1, 2018 (3/22/2018)~~	~~0.0%~~	~~-13.0%~~	~~-16%~~

~~*Source: TCAG, 2018.*~~

Table 5.0-21

Blueprint Plus Alternative SB 375 Greenhouse Gas Emissions and Vehicle Trips Reductions

Indicators & Measures	2005 Baseline	2020 Blueprint Plus	2035 Blueprint Plus
Total Population	404,148	488,293	568,186
Vehicle Miles Traveled (VMT)			
VMT per Weekday	8,705,754	9,260,388	10,408,276
Per Capita VMT SB 375	21.54	18.96	18.32
Difference between 2005 Base Per Capita VMT (21.54 miles)	0.0%	-11.96%	-14.96%
SB 375 CO_2 Emissions			
Total SB 375 CO_2 Emissions (tons/day)	3,404	3,580	3,980
Per Capita SB 375 CO_2 Emissions (lbs/day)	16.84	14.66	14.01
Difference between 2005 Base Per Capita CO_2 (16.84 lbs)	0.0%	-13.0%	-16.8%
SB 375 Targets Through September 30, 2018 (3/22/2018)	0.0%	-5.0%	-10.0%
SB 375 Targets Through October 1, 2018 (3/22/2018)	0.0%	-13.0%	-16%

Source: TCAG, 2018.

AB 32

GHG emissions per household would be greater under the 2018 RTP/SCS than under the Blueprint Plus Alternative (13.8 ~~$MTCO_2e$/Year~~ tons/year of CO_2 per household compared to 13.5 ~~$MTCO_2e$/Year~~ tons/year of CO_2 per household). However, data regarding energy use and therefore GHG emissions from commercial, industrial, agricultural and other sources is not available. While energy use per household would decrease as a result of the more compact land use growth pattern, it total energy use as a result of all land use activities would increase substantially between now and 2042.

As shown in **Table 5.0-6,** per capita GHG emissions for the Blueprint Plus Alternative would be 34 percent below 1990 levels by 2020, total mobile source GHG emissions are projected to increase by approximately four percent. This is less than the level of emissions reduction as compared to the 2018 RTP/SCS.

SB 32

SB 32 sets the statewide GHG emissions reduction target for the year 2030; similar to AB 32 setting statewide GHG emissions reduction target for the year 2020. SB 32 requires a reduction in GHG emissions of 40 percent below 1990 levels. As shown in **Table 5.0-6**, emissions from transportation sources in Tulare County would not meet these targets, providing an increase in emissions in 2020 of four percent, and a decrease in emissions in 2035 of 18 percent. Neither the 2020 nor 2035 projections reduce emissions by 40 percent as compared to 1990 levels. These emission reductions are greater than the reductions provided by the 2018 RTP/SCS. Both the 2018 RTP/SCS and the Blueprint Plus Alternative would have significant impacts with respect conflicting with the state's ability to achieve SB 32 and EO S-3-05 GHG reduction targets. However, in all years emissions under the Plan would be less than under the Blueprint Plan Alternative. Therefore, impacts associated with SB 32 and EO S-3-05 conflicts would also be less with the 2018 RTP/SCS than the Blueprint Plan Alternative for all thresholds and all years analyzed, and would be less than significant.

Land Use

Conflict with Plan, Policy or Regulation

Current land use practices may have to change to address the Blueprint Plus Alternative because the Blueprint Plus focuses more growth into the existing urban area around transit corridors and existing activity centers, possibly beyond what communities have planned for. To achieve the densities of the Blueprint Plus, there would be a greater chance of conflicting with, local general plans, market forces and community desired growth patterns.

Disrupt a Community

As a result of greater concentrations of density in specified areas and increasing redevelopment pressures, the Blueprint Plus Alternative could result in increased division of existing communities. The Blueprint Plus Alternative would also increase the potential for land use incompatibilities in urban areas. However, the Blueprint Plus Alternative would result in less consumption of vacant land. Impacts of the Blueprint Plus Alternative on land use would be less than the Plan on non-urban areas, but greater in urban areas, and as under the Plan, impacts would be significant.

Noise

Exposure to Excess Noise Levels, Substantial Permanent or Temporary Increases in Noise

Implementation of the 2018 RTP/SCS would result in the same total regional population and households as the Blueprint Plus Alternative. Population for both the Blueprint Plus Alternative and the Plan 2018 RTP/SCS is projected to be approximately 604,969 in 2042. However, under the Blueprint Plus Alternative, a greater number of regional transportation investments would be made. Under the Blueprint Plus Alternative, the population distribution would be more concentrated in urban areas and more influenced by additional transportation investments and growth policies contained within the Blueprint Plus Alternative.

Both the Blueprint Plus Alternative and 2018 RTP/SCS would expose people to significant increases in noise and vibration. Under the Blueprint Plus Alternative, development would be more concentrated, potentially exposing more people and sensitive uses to noise and vibration in urban areas (including both construction and operational noise). However, the 2018 RTP/SCS includes greater improvements in urban areas that would facilitate traffic movement, and increase use of transit and alternate modes that could reduce individual vehicle noise (as more people take alternative modes of transportation). On balance, the Blueprint Plus Alternative would result in more roadways with substantial increases in noise but would have more traffic congestion improvements than the Plan.

The greater amount of transportation projects in the Blueprint Plus Alternative would increase the amount of transportation-related construction activity, which would increase short-term noise and vibration levels. The less dispersed growth pattern, and emphasis on transit or alternative modes of transportation, roadways would decrease congestion and associated noise. However, with a more concentrated growth pattern, more people would be exposed to substantial increases in noise as compared to the Plan. This alternative would result in overall greater construction noise impacts compared to the 2018 RTP/SCS.

Vibration

The Blueprint Plus Alternative would concentrate development in urban areas, increase vibration. However, a greater number of transportation improvements under the Blueprint Plus Alternative would help to move traffic more efficiently which could reduce vibration in urban areas. but not to the point of off-setting increased vehicle trips. Similarly, with vibration in general, as for the 2018 RTP/SCS, there remains the potential for individual projects in the region to result in significant vibration impacts. Thus, impacts related to groundborne vibration under the Blueprint Plus Alternative would be greater than under the 2018 RTP/SCS and remain significant.

Airport Noise

Similar to the Plan, some land use projects under the Blueprint Plus Alternative could be located within an area covered by an airport land use plan or in the vicinity of a private airstrip. However, the Blueprint Plus Alternative along with existing plans and regulations, including the Tulare County Comprehensive Airport Land Use Plan (ALUP) and Federal Aviation Administration regulation of airports and airstrips, would minimize noise emissions levels for people residing or working in the project area. Therefore, impacts would be similar to the Plan and less than significant.

Population, Housing and Employment

Induce Population

The Blueprint Plus Alternative would have the same number of households, employment, and population as the Plan. The Blueprint Plus Alternative includes land use strategies that would target growth in developed urban areas to a greater extent than the Plan. This more compact land use pattern would result in a decrease in the amount of land consumed compared to the Plan (8,487 acres of vacant land, 1,353 acres of farmland, and 144 acres of critical habitat under the Blueprint Plus compared to 8,884 acres of vacant land, 1,518 acres of farmland and 144 acres of critical habitat under the Plan). [10] As fewer acres of land would be consumed, more population would be in urban areas and away from undeveloped areas. As a result, impacts under the Blueprint Plus Alternative would be less than the Plan. Impacts would be significant and less than the Plan.

Displacement

Compared to the Plan, the Blueprint Plus Alternative would place more focus on development in urban areas and existing communities and would have a greater emphasis on infill development. As a result,

10 TCAG Envision Tomorrow Tool.

the Blueprint Plus Alternative could result in an increase in the number of homes or businesses that are displaced as a result of redevelopment and impacts would remain significant. Impacts would be similar to the Plan.

Public Services

Fire

The Blueprint Plus Alternative would include the same increases in population, housing, and jobs that would require increases in police, fire, and emergency personnel; however more of these people would be located in urban areas. In general urban areas are well served by fire and emergency services and as personnel would travel shorter distances to calls response times would not be substantially affected. As the Blueprint Plus Alternative would increase density and concentration of developments in urban areas, ewer emergency service personnel would be needed to serve non-urban areas of the County than with the Plan. The increase in population in urban areas could result in the need for new or expanded facilities to serve increase demand in those areas. Therefore, the Blueprint Plus Alternative would have greater impacts to fire services and the need for new facilities.

Police

Similar to the greater need for fire services, the Blueprint Plus Alternative would also increase the need for police and police facilities. Additionally, the more dense populations in urban areas could result in increased crime. Therefore, the Blueprint Plus Alternative would have greater impacts to police services and the need for new facilities compared to the Plan.

Schools

The Blueprint Plus Alternative would have greater impacts to schools as the Plan. The 2042 population would be similar under the Blueprint Plus as under the Plan; however, the Blueprint Plus includes more population in urban areas than under the Plan and would result in the need for additional school facilities in the areas targeted for increased population densities and fewer facilities in outlying areas.. As with the Plan, impacts would be less than significant and would be generally similar.

Recreation

The Blueprint Plus Alternative would result in fewer impacts on recreational facilities in non-urban areas as compared to the Plan because it would consume less land. The Blueprint Plus focuses on further increased densities in urban areas. Although this alternative would have less impacts to non-urban areas that require new recreational facilities, existing urban parks would be more severely impacted under the

Blueprint Plus Alternative because of intensified growth in urban areas, and such impacts would be significant as under the Plan.

Transportation

Substantial Increases in VMT

The Blueprint Plus Alternative builds on the land use strategies contained in the Plan, with intensified land uses in urban areas. The Blueprint Plus Alternative assumes an increase in demand for multi-family housing in urban areas. The Blueprint Plus Alternative would result in a reduction in VMT of compared to the Plan (10,408,276 for the Blueprint Plus compared to 10,441,330 in the Plan).

Under the Blueprint Plus Alternative, the population of the TCAG region would still grow by approximately 133,127 people by 2042, however additional transportation policies to reduce emissions, and limit single-family development would be implemented. The Blueprint Plus Alternative would accommodate the same increase in total population, households, and jobs as the Plan but with a more compact growth pattern resulting in more traffic in urban areas. Impacts related to VMT under the Blueprint Plus would be less than the Plan, but would still be significant.

Conflict with CMP

Under the Blueprint Plus Alternative, traffic volumes would similarly increase however congestion would have a greater increase in urban areas. Therefore, a greater significant impact would occur under this alternative.

Change in Air Traffic

Similar to the conclusions of Plan implementation, the Blueprint Plus Alternative would also not by itself result in changes in air traffic patterns. However, the similar increased population that would occur by 2042 would likely result in increased air traffic. As with the proposed project, iimplementation of the Tulare County Comprehensive Airport Land Use Plan (ALUP) would avoid safety risks associated with air traffic to the extent feasible. The impact to a change in air traffic patterns would similarly be less than significant.

Increase Hazards

Similar to the Plan, the Blueprint Plus Alternative would not result in increased hazards due to design feature (e.g., sharp curves or dangerous intersections) or increase conflicts between incompatible uses (e.g., farm equipment and other vehicular traffic). Design of new transportation facilities, including new

pedestrian and bicycle facilities, takes into account potential hazards and avoids risks to the extent feasible. Impacts would be less than significant.

Inadequate Emergency Access

Under the Blueprint Plus Alternative congestion would increase which could result in travel delay. The fire departments throughout the County are responsible for maintaining adequate response times, and future projects, both transportation and development, would undergo further environmental analysis that would include evaluation and mitigation of impacts to emergency access. Impacts would be less than significant and similar to the Plan.

Conflict with Alternative Transportation Plans

Under the Blueprint Plus Alternative, there would be more transportation infrastructure investment, while growth would continue to occur at forecasted rates. In 2042, the Blueprint Plus Alternative would result in less VMT as compared to the Plan. The Blueprint Plus Alternative would also result in more transit use and use of active mode shares compared to the Plan. Impacts would be slightly reduced compared to the Plan as vehicle congestion would be reduced compared to the Plan. The increased investment in pedestrian and bicycle facilities would result in increase in the performance of Tulare's pedestrian and bicycle facilities. Impacts would be less than the Plan.

Utilities

Energy

Wasteful Inefficient Use of Energy

Since the Blueprint Plus Alternative includes greater transportation and development projects than the 2018 RTP/SCS, it would have less of an impact related to the need for expanded or newly constructed energy facilities to serve the population growth in the region due to greater emphasis on TPAs. In addition, since more public transit options would be available than under the 2018 RTP/SCS and congestion would decrease, use of petroleum fuel for personal vehicles would be less, as indicated in **Table 5.0-22**.

Table 5.0-22
Gasoline and Diesel Consumption – Blueprint Plus (2042) vs. 2018 RTP/SCS (2042)

Scenario	Vehicle Miles Travelled	Daily Gasoline Consumption (thousand gallons)	Daily Diesel Consumption (thousand gallons)
Blueprint Plus (2042)	12,657,231	271.78	180.29
2018 RTP/SCS (2042)	12,699,425	272.67	180.89

Source: TCAG 2018, EMFAC 2014

The Blueprint Plus Alternative would accommodate the same increase in total population, households, and jobs as the 2018 RTP/SCS. However, as shown in **Table 5.0-23**, the total energy consumption under the Blueprint Plus Alternative would be less than under the 2018 RTP/SCS.

Table 5.0-23
Residential and Commercial Energy Consumption from New Growth – Blueprint Plus (2042) vs. Plan (2042)

Scenario	Energy Use per Household (Million BTU Per Year)
Blueprint Plus (2042)	145.1
2018 RTP/SCS (2042)	148.3

Source: TCAG, 2018.

Both the Blueprint Plus Alternative and the 2018 RTP/SCS include strategies to focus growth in TPAs, which would help reduce the number of new energy facilities or expansion of existing facilities that need to be constructed. This is because the Blueprint Plus Alternative would accommodate the same population as the 2018 RTP/SCS by constructing higher density development with infill and mixed use projects. Infill and mixed-use developments are generally higher efficiency dwellings accounting for the reduction in total energy consumption seen in **Table 5.0-23**. Higher density development throughout Tulare County under the Blueprint Plus Alternative would help accommodate the same population growth with less dispersed development. Under the Blueprint Plus Alternative, the 2018 RTP/SCS similar land use strategies compared to the 2018 RTP/SCS would occur. It is also possible that increased density in urban areas could put additional pressure on energy providers to increase capacity to these areas resulting in additional impacts. However, as in general, energy use would be more efficient (on a per

capita basis), with the 2018 RTP/SCS, impacts would be less with the Blueprint Plus Alternative. Impacts to energy under the Blueprint Plus Alternative would be significant as under the 2018 RTP/SCS.

Electricity and Natural Gas Use

The Blueprint Plus Alternative would accommodate the same increase in total population, households, and jobs as the Plan, but with development occurring in a more concentrated pattern in urban areas and more transportation projects. This would result in less consumption of open space areas. Therefore, demand for electricity and natural gas would be less dispersed and more focused in urban areas, this could slightly reduce the number of new facilities necessary as the need would be more compact. The Blueprint Plus Alternative would result in an overall decrease in electricity and natural gas demand due to increased population and economic growth. Impacts would be significant, but as the land use pattern would be more efficient, impacts would be less than the Plan.

Wastewater

The Blueprint Plus Alternative includes strategies to focus growth in urban areas at higher densities than under the Plan. The higher density development pattern of the Blueprint Plus would tend to use less water which would generate less wastewater (multi-family homes are generally more efficientt than single-family homes).

As under the Plan, expansion of existing facilities and/or construction of new facilities would be necessary under the Blueprint Plus Alternative to accommodate increases in population in urban areas and concentrated growth patterns. As a result of further intensification of development in urban areas impacts from the Blueprint Plus Alternative would be greater than the Plan in urban areas but less in non-urban areas. Impacts to wastewater would remain significant as under the Plan.

Solid Waste

Similar to the Plan, the more compact growth pattern of the Blueprint Plus Alternative would generate less solid waste; however, impacts would remain significant.

Water Resources

Under the Blueprint Plus Alternative, fewer undeveloped areas would be impacted by excavation and construction activities related to transportation projects as compared to the Plan. The Blueprint Plus Alternative focuses on infill development and further expansion of non-motorized transportation. Under the Blueprint Plus Alternative, development would result in 8,487 acres of undeveloped land

consumption as compared to 8,884 under the Plan, thereby reducing the amount of impervious surfaces and decreasing impacts to water resources as compared to the Plan.

The direct effects of the Blueprint Plus Alternative from transportation projects on water resources would be similar when compared with the Plan, but direct effects from land use development would be less because of the more compact growth pattern, but impacts would remain significant. Similarly, impacts to groundwater infiltration caused by the increased impervious surfaces of roadway projects, and to increased flooding hazards, would remain significant.

With regard to groundwater recharge, the Blueprint Plus alternative would consume fewer acres of land providing more opportunities for groundwater recharge. As such, impacts would be less than the Plan. While the Plan and the Blueprint Plus would result in the same total population, the more compact growth pattern under the Blueprint Plus would result in more efficient use of water resulting in lower demand. As the Blueprint Plus's more compact growth pattern would be more water efficient, the Blueprint Plus's water supply impacts would be less than the Plan, however the impacts would remain significant.

Overall, the Blueprint Plus would result in fewer impacts to water resources because of a compact growth pattern that would result in less impervious surfaces and less demand for water; however, impacts would remain significant.

5.3 ENVIRONMENTALLY SUPERIOR ALTERNATIVE

Section 15126.6 of the *State CEQA Guidelines* requires that an "environmentally superior" alternative be identified. In general, the environmentally superior alternative is the alternative that would generate the fewest adverse impacts. If the No Project Alternative is identified as environmentally superior, then another environmentally superior alternative must be identified among the other alternatives.

Table 5.0-24, Quantitative Impact Comparison -- Plan and Alternatives, summarizes how each of the alternatives performs based on several quantifiable impact measures.

Table 5.0-24
Quantitative Impact Comparison -- Plan and Alternatives

Impact Measure[1]	Plan	No Project	Trend	Old Plan	Blueprint Plus
Population, Housing and Employment					
Population	604,969	604,969	604,969	604,969	604,969
Households					
Single Family	136,688	141,868	141,868	136,688	134,850
Multi Family	49,645	44,464	44,464	49,645	49,645
Employment	501,710	501,710	501,710	501,710	501,710
Land Use and Biological Resources					
Vacant land consumed (acres)	8,884	10,525	10,525	9,110	8,487
Critical habitat consumed	144	176	176	144	144
Urban Gross Residential Density	6.1	4.9	4.9	6.1	6.4
Agricultural Resources					
Farmland Consumed (acres)	1,518	2,310	2,310	1,403	1,353
Transportation and Traffic					
Total Annual VMT (million)	12.69	12.76	12.85	12.90	12.66
Air Quality/Health					
Total SB 375 CO2 (tons per workday)	4,219	4,229	4,275	4,304	4,203
Per capita SB 375 GHG (lbs/day)	15.37	15.41	15.58	15.69	15.32
2042 vs 2005	-17.2	-17.0	-16.1	15.5	-17.5
SB 375 CO_2 % reduced					
Households within 500 feet of freeways	4,178	3,898	3,898	3,838	4,186
Households w/in 0.25 mile freeways with high AQI	9,982	9,504	9,504	10,110	10,324
Energy Use					
Gasoline 2042 million gallons	272.67	272.99	275.76	277.33	271.78
Diesel 2042 million gallons	180.89	181.71	183.01	183.71	180.89
2042 Energy Use Per Household (millions of BTU annual)	148.3	158.9	158.9	148.1	145.1
Water Use					
2042 Household water gallons /day	264.0	293.0	293.0	263.6	255.4

Source: TCAC and Impact Sciences, 2018

~~Impact Measure[1]~~	~~Plan~~	~~No Project~~	~~Trend~~	~~Old Plan~~	~~Blueprint Plus~~

~~[1] This table compares select quantifiable impacts among alternatives. It is not a comprehensive listing of all impacts as some impacts are not easily quantified and/or not easily compared in a simple table such as the one presented above. But this table does present some of the measures used in assessing impacts.~~

Table 5.0-24
Quantitative Impact Comparison -- Plan and Alternatives

Impact Measure[1]	Plan	No Project	Trend	Old Plan	Blueprint Plus
Population, Housing and Employment					
Population	604,969	604,969	604,969	604,969	604,969
Households					
Single Family	136,688	141,868	141,868	136,688	134,850
Multi Family	49,645	44,464	44,464	49,645	49,645
Employment	501,710	501,710	501,710	501,710	501,710
Land Use and Biological Resources					
Vacant land consumed (acres)	8,884	10,525	10,525	9,110	8,487
Critical habitat consumed	144	176	176	144	144
Urban Gross Residential Density	6.1	4.9	4.9	6.1	6.4
Agricultural Resources					
Farmland Consumed (acres)	1,518	2,310	2,310	1,403	1,353
Transportation and Traffic					
Total Annual VMT (million)	12.69	12.76	12.85	12.90	12.66
Air Quality/Health					
Total SB 375 CO2 (tons per workday)	4,219	4,229	4,275	4,304	4,203
Per capita SB 375 GHG (lbs/day)	13.95	13.98	14.13	14.23	13.89
2042 vs 2005	-17.2	-17.0	-16.1	15.5	-17.5
SB 375 CO_2 % reduced					
Households within 500 feet of freeways	4,178	3,898	3,898	3,838	4,186
Households w/in 0.25 mile freeways with high AQI	9,982	9,504	9,504	10,110	10,324
Energy Use					
Gasoline 2042 million gallons	272.67	272.99	275.76	277.33	271.78
Diesel 2042 million gallons	180.89	181.71	183.01	183.71	180.89
2042 Energy Use Per Household (millions of BTU annual)	148.3	158.9	158.9	148.1	145.1

Impact Measure[1]	Plan	No Project	Trend	Old Plan	Blueprint Plus
Water Use					
2042 Household water gallons /day	264.0	293.0	293.0	263.6	255.4

Source: TCAG and Impact Sciences, 2018

[1] *This table compares select quantifiable impacts among alternatives. It is not a comprehensive listing of all impacts as some impacts are not easily quantified and/or not easily compared in a simple table such as the one presented above. But this table does present some of the measures used in assessing impacts.*

As shown in **Table 5.0-24**, the Blueprint Plus Alternative would incrementally reduce several environmental factors including water consumption, land consumption, energy use, VMT air pollutant emissions, and GHG emissions. This would occur as a result of emphasizing development within existing urban areas. Identification of an environmentally superior alternative is not clear-cut. The less dense alternatives generally result in fewer impacts to people, but greater impacts to open space and biological resources, whereas more-dense alternatives increase urban impacts resulting in greater impacts to people. The Blueprint Plus Alternative is identified as the environmentally superior alternative because it would result in the least consumption of land and incrementally reduce several environmental factors, but still would result in the same number of significant impacts as the Plan. It would not reduce any of the Plan's significant impacts to less than significant levels.

As discussed throughout this PEIR, TCAG has no land use authority; rather it sets regional land use policy. Thus, TCAG has no authority to implement the Blueprint Plus Alternative's land use scenario. Nonetheless, local jurisdictions, in exercising their land use authority, could choose to implement the regional land use policies identified in the Blueprint Plus Alternative. On the other hand, the proposed land use changes required to implement the Blueprint Plus Alternative may not be acceptable to local jurisdictions because they are inconsistent with local land use goals and objectives.

Chapter 5: Revised EIR Appendix 4.6 GHG Calculations

TCAG FINAL DRAFT 2018 RTP/SCS Base

2005	Persons/HU	Population	HU	EMP	Regional VMT	SB375 VMT	EMFAC 14 CO2	~~GHG/per capita lbs/day~~	GHG/per capita lbs/day
Final VMIP2 Base Year	3.15	404,148	128,388	176,896	10,153,707	8,705,754	3,404	~~38.57~~	16.84

2017	Persons/HU	Population	HU	EMP	Regional VMT	SB375 VMT	EF 14 CO2	~~GHG/per capita lbs/day~~	GHG/per capita lbs/day
Final VMIP2 Base Year	3.17	471,842	148,898	176,289	10,547,370	9,153,694	3,586	~~36.95~~	15.20

2005	Transit Ridership	DA	TDM Mode Share SR2	SR3+	Transit	Bike	Walk	Summer ROG	NOX	Winter NOX	Criteria Pollutants EMFAC 14 Winter Heavy Duty Trucks PM10	PM2.5	Annual Heavy Duty Trucks PM10	PM2.5	Annual ROG	CO	NOX	CO2	PM10	PM2.5	Annual SOx	Fuel Gas	Fuel DSL
	10,205	38.61%	26.32%	27.74%	0.75%	1.04%	5.55%	10.5225	28.6373	31.3572	1.4135	1.0033	0.7900	0.6208	0.7862	0.6208	9.3602	78.4561	30.2704	6511.7246	1.4096	0.9996	0.2303	478.7437	187.7021

2017	Transit Ridership	DA	TDM Mode Share SR2	SR3+	Transit	Bike	Walk																	
	13,515	38.19%	26.52%	27.73%	0.83%	1.08%	5.66%	3.8978	9.9016	10.7708	0.7412	0.3546	0.1882	0.0656	0.1880	0.0656	3.3710	24.5587	10.4230	6109.0624	0.7410	0.3544	0.0603	437.3555	183.7527	4.3			178.4

TCAG FINAL DRAFT 2018 RTP/SCS Scenario Metrics

	Persons/HU	Population	SF	MF	EMP	Regional VMT	SB375 VMT	EF 14 CO2 tons/day	~~GHG/per capita lbs/day~~	GHG/per capita lbs/day	% GHG/per capita Reduction	% Moving Cooler Reduction	Total % GHG/per capi Reduction
							SB 375 Data						
							ARB SB 375 Target methodology 13% and 16%						
2020													
No Project Scenario	3.18	488,293	119,305	34,085	181,560	10,789,716	9,348,211	3,614	~~36.92~~	14.80	12.1%		12.1%
Old Plan Scenario Transit Grow	3.18	488,293	118,345	35,044	181,560	10,755,415	9,313,321	3,600	~~36.75~~	14.74	12.5%		12.5%
Trend Scenario Transit Maintain	3.18	488,293	119,305	34,085	181,560	10,780,895	9,339,393	3,610	~~36.90~~	14.79	12.2%	0.06%	12.3%
Blueprint Scenario Transit Grow	3.18	488,293	118,345	35,044	181,560	10,716,374	9,274,871	3,586	~~36.65~~	14.69	12.8%	0.33%	13.1%
Blueprint Plus Scenario Transit Grow	3.18	488,293	118,005	35,385	181,560	10,701,905	9,260,388	3,580	~~36.59~~	14.66	13.0%	0.33%	13.3%
2035													
No Project Scenario	3.23	568,186	134,689	41,162	207,912	12,159,989	10,515,830	4,017	~~35.59~~	14.14	16.1%		16.1%
Old Plan Scenario Transit Grow	3.23	568,186	130,851	44,999	207,912	12,323,325	10,678,457	4,094	~~35.89~~	14.41	14.4%		14.4%
Trend Scenario Transit Maintain	3.23	568,186	134,689	41,162	207,912	12,201,803	10,557,662	4,038	~~35.67~~	14.21	15.6%	0.41%	16.0%
Blueprint Scenario Transit Grow	3.23	568,186	130,851	44,999	207,912	12,085,473	10,441,330	3,992	~~35.49~~	14.05	16.6%	1.34%	17.9%
Blueprint Plus Scenario Transit Grow	3.23	568,186	129,490	46,362	207,912	12,052,420	10,408,276	3,980	~~35.44~~	14.01	16.8%	1.33%	18.2%
2042													
No Project Scenario	3.25	604,969	141,868	44,464	220,210	12,758,055	11,046,917	4,229	~~35.41~~	13.98	17.0%		17.0%
Old Plan Scenario Transit Grow	3.25	604,969	136,688	49,645	220,210	12,897,144	11,185,684	4,304	~~35.68~~	14.23	15.5%		15.5%
Trend Scenario Transit Maintain	3.25	604,969	141,868	44,464	220,210	12,848,274	11,137,389	4,275	~~35.58~~	14.13	16.1%	0.42%	16.5%
Blueprint Scenario Transit Grow	3.25	604,969	136,688	49,645	220,210	12,699,425	10,988,544	4,219	~~35.37~~	13.95	17.2%	1.38%	18.6%
Blueprint Plus Scenario Transit Grow	3.25	604,969	134,850	51,484	220,210	12,657,231	10,946,349	4,203	~~35.32~~	13.89	17.5%	1.38%	18.9%

	Transit Ridership	DA	TDM Mode Share SR2	SR3+	Transit	Bike	Walk	Summer ROG	NOX	Winter NOX	Criteria Pollutants EMFAC 14 Winter Heavy Duty Trucks PM10	PM2.5	Annual Heavy Duty Trucks PM10	PM2.5	Annual ROG	CO	NOX	CO2	PM10	PM2.5	Annual SOx	Fuel Gas	Fuel DSL	ENVISION TOMORROW Metrics Urban Gross Residential Density	New Developed Acres Consumed	Important Ag Land outside SOI	Critical Habitat Land Acres Consumed	CO2 Emissions per Household	Water Consumption per Household	Energy Use per Household
2020																														
No Project Scenario	13,851	38.13%	26.56%	27.75%	0.83%	1.09%	5.65%	2.9319	7.6183	8.2453	0.7081	0.3169	0.1588	0.0317	0.1587	0.0317	2.5221	17.5664	8.0001	5802.7678	0.7080	0.3167	0.0572	400.7168	186.0886							177.4
Old Plan Scenario Transit Grow	18,967	38.02%	26.46%	27.63%	1.11%	1.09%	5.69%	2.9224	7.5940	8.2190	0.7058	0.3158	0.1583	0.0316	0.1582	0.0316	2.5140	17.5088	7.9746	5783.5497	0.7057	0.3157	0.0570	399.3609	185.4966							177.4
Trend Scenario Transit Maintain	15,701	38.10%	26.53%	27.71%	0.93%	1.09%	5.65%	2.9293	7.6120	8.2385	0.7075	0.3166	0.1587	0.0317	0.1585	0.0317	2.5199	17.5484	7.9935	5797.3411	0.7074	0.3165	0.0571	400.3161	185.9361							177.4
Blueprint Scenario Transit Grow	19,621	37.78%	26.39%	27.58%	1.16%	1.10%	5.99%	2.9119	7.5665	8.1893	0.7033	0.3147	0.1577	0.0315	0.1576	0.0315	2.5049	17.4424	7.9458	5763.4671	0.7032	0.3146	0.0568	398.0071	184.8239							177.4
Blueprint Plus Scenario Transit Grow	19,654	37.73%	26.39%	27.57%	1.17%	1.10%	6.05%	2.9079	7.5563	8.1782	0.7023	0.3143	0.1575	0.0315	0.1574	0.0315	2.5015	17.4179	7.9350	5755.4636	0.7022	0.3141	0.0567	397.4460	184.5743							176.0
2035																														
No Project Scenario	15,308	38.09%	26.68%	27.78%	0.79%	1.11%	5.55%	1.4015	3.0062	3.1963	0.7230	0.2965	0.1415	0.0060	0.1415	0.0060	1.1805	7.4608	3.1264	4566.9132	0.7230	0.2965	0.0447	276.2255	178.5688							166.3
Old Plan Scenario Transit Grow	23,223	37.81%	26.61%	27.62%	1.17%	1.11%	5.68%	1.4202	3.0466	3.2392	0.7327	0.3004	0.1434	0.0061	0.1434	0.0061	1.1963	7.5031	3.1683	4637.4492	0.7327	0.3004	0.0454	280.8883	180.9814							157.3
Trend Scenario Transit Maintain	20,285	37.89%	26.61%	27.68%	1.04%	1.11%	5.67%	1.4062	3.0165	3.2073	0.7255	0.2975	0.1420	0.0060	0.1420	0.0060	1.1845	7.4591	3.1371	4587.0835	0.7255	0.2975	0.0449	277.6381	179.1898							166.3
Blueprint Scenario Transit Grow	24,143	37.52%	26.51%	27.54%	1.23%	1.13%	6.06%	1.3928	2.9877	3.1767	0.7186	0.2946	0.1406	0.0059	0.1406	0.0059	1.1732	7.3855	3.1072	4543.1791	0.7186	0.2946	0.0445	274.9724	177.4815							157.3
Blueprint Plus Scenario Transit Grow	24,223	37.44%	26.51%	27.51%	1.25%	1.13%	6.15%	1.3890	2.9796	3.1680	0.7166	0.2938	0.1402	0.0059	0.1402	0.0059	1.1700	7.3646	3.0987	4531.1291	0.7166	0.2938	0.0444	274.2597	176.9965							155.4
2042																														
No Project Scenario	16,042	37.99%	26.74%	27.79%	0.79%	1.12%	5.57%	1.1747	2.7980	2.9630	0.7492	0.3045	0.1447	0.0060	0.1447	0.0060	0.9911	6.6040	2.9051	4572.9711	0.7492	0.3045	0.0447	272.9961	181.7117	4.9	10,525	2,310.6	176.0	14.8	293.0	158.9
Old Plan Scenario Transit Grow	24,359	37.69%	26.67%	27.62%	1.16%	1.13%	5.72%	1.1877	2.8285	2.9954	0.7573	0.3078	0.1463	0.0061	0.1462	0.0061	1.0022	6.6258	2.9368	4635.9355	0.7573	0.3078	0.0454	277.3375	183.7117	6.1	9,110	1,403.3	144.0	13.8	263.6	148.1
Trend Scenario Transit Maintain	21,384	37.79%	26.67%	27.70%	1.03%	1.13%	5.68%	1.1830	2.8177	2.9839	0.7545	0.3066	0.1457	0.0060	0.1457	0.0060	0.9982	6.6137	2.9256	4613.3388	0.7544	0.3066	0.0451	275.7609	183.0090	4.9	10,525	2,310.6	176.0	14.8	293.0	158.9
Blueprint Scenario Transit Grow	25,345	37.39%	26.59%	27.54%	1.23%	1.15%	6.10%	1.1694	2.7851	2.9494	0.7457	0.3031	0.1440	0.0060	0.1440	0.0060	0.9866	6.5352	2.8917	4560.9046	0.7457	0.3030	0.0446	272.6721	180.8901	6.1	8,884	1,518.3	144.0	13.8	264.0	148.3
Blueprint Plus Scenario Transit Grow	25,410	37.31%	26.59%	27.51%	1.24%	1.15%	6.20%	1.1655	2.7758	2.9395	0.7432	0.3020	0.1435	0.0060	0.1435	0.0060	0.9834	6.5123	2.8821	4545.8948	0.7432	0.3020	0.0445	271.7809	180.2894	6.4	8,487	1,353.3	144.0	13.5	255.4	145.1

Item	Notes	Source
Persons/HU	Persons per housing unit	DOF
Population	Total scenario population	DOF
HU	Total scenario housing units	DOF
SF	Total single family housing units	DOF
MF	Total multi-family housing units	DOF
EMP	Total employment units	DOF
Regional VMT	Total daily VMT including XX trips	TCAG Model
SB 375 VMT	Total daily VMT excluding XX trips	TCAG Model
EF 14 CO2	SB375 daily CO2~~e metric~~ tons (Annual) excluding XX trips	EMFAC 14
Moving Cooler Reduction	Percent CO2e per capita reductions from 2005 base	Moving Cooler Table 4.2
Total % GHG/per capita Reduction	Percent CO2e per capita reductions from 2005 base	EMFAC 14
Transit Ridership	Total daily regional transit ridership	TCAG Model
TDM Mode Share	Mode Share	TCAG Model
ROG	ROG total daily ~~metric~~ tons (Summer)	EMFAC 14
NOX	NOX total exhaust daily ~~metric~~ tons (Summer)	EMFAC 14
NOX	NOX total exhaust daily ~~metric~~ tons (Winter)	EMFAC 14
PM10	PM10 total daily ~~metric~~ tons (Winter)	EMFAC 14
PM2.5	PM2.5 total daily ~~metric~~ tons (Winter)	EMFAC 14
Heavy Duty PM10	PM10 total daily ~~metric~~ tons (Winter)	EMFAC 14
Heavy Duty PM2.5	PM2.5 total daily ~~metric~~ tons (Winter)	EMFAC 14
Heavy Duty PM10	PM10 total daily ~~metric~~ tons (Annual)	EMFAC 14
Heavy Duty PM2.5	PM2.5 total daily ~~metric~~ tons (Annual)	EMFAC 14
ROG	ROG total daily ~~metric~~ tons (Annual)	EMFAC 14
CO	CO total exhaust ~~metric~~ tons (Annual)	EMFAC 14
NOX	NOX total exhaust daily ~~metric~~ tons (Annual)	EMFAC 14
CO2	CO2~~e~~ daily ~~metric~~ tons (Annual) including XX trips	EMFAC 14
PM10	PM10 total daily ~~metric~~ tons (Annual)	EMFAC 14
PM2.5	PM2.5 total daily ~~metric~~ tons (Annual)	EMFAC 14
SOx	SOx total exhaust ~~metric~~ tons (Annual)	EMFAC 14
Fuel Gas	Daily regional gasoline consumption thousands of gallons (Annual)	EMFAC 14
Fuel DSL	Daily regional diesel consumption thousands of gallons (Annual)	EMFAC 14
Urban Gross Residential Density	Gross residential density housing units per acre (Urban Areas)	Envision Tomorrow
New Developed Acres Consumed	New Developed Acres Consumed	Envision Tomorrow
Prime Ag Land Acres Consumed	Prime Ag Land Acres Consumed	Envision Tomorrow/FMMP
Critical Habitat Land Acres Consumed	Critical Habitat Land Acres Consumed	Envision Tomorrow/SJV Greenprint
CO2 Emissions per Household	CO2~~e metric~~ tons per year	Envision Tomorrow
Water Consumption per Household	Water gallons per day	Envision Tomorrow
Energy Use per Household	Energy consumption in millions of BTU per year	Envision Tomorrow

TCAG FINAL DRAFT 2018 RTP/SCS Base

GHG Calculations Table -- Detail for Corrected Columns

2005	Persons/HU	Population	HU	EMP	Regional VMT	SB375 VMT	EMFAC 14 CO2	~~GHG/per capita lbs/day~~	GHG/per ca lbs/day
Final VMIP2 Base Year	3.15	404,148	128,388	176,896	10,153,707	8,705,754	3,404	~~18.57~~	16.84

2017	Persons/HU	Population	HU	EMP	Regional VMT	SB375 VMT	EF 14 CO2		
Final VMIP2 Base Year	3.17	471,842	148,898	176,289	10,547,370	9,153,694	3,586	~~16.75~~	15.20

TCAG FINAL DRAFT 2018 RTP/SCS Scenario Metrics

							SB 375 Data ARB SB 375 Target methodology 13% and 16%		
	Persons/HU	Population	SF	MF	EMP	Regional VMT	SB375 VMT	EF 14 CO2 tons/day	~~GHG/per capita lbs/day~~	GHG/per ca lbs/day
2020										
No Project Scenario	3.18	488,293	119,305	34,085	181,560	10,789,716	9,348,211	3,614	~~16.32~~	14.80
Old Plan Scenario Transit Grow	3.18	488,293	118,345	35,044	181,560	10,755,415	9,313,321	3,600	~~16.25~~	14.74
Trend Scenario Transit Maintain	3.18	488,293	119,305	34,085	181,560	10,780,895	9,339,393	3,610	~~16.30~~	14.79
Blueprint Scenario Transit Grow	3.18	488,293	118,345	35,044	181,560	10,716,374	9,274,871	3,586	~~16.19~~	14.69
Blueprint Plus Scenario Transit Grow	3.18	488,293	118,005	35,385	181,560	10,701,905	9,260,388	3,580	~~16.16~~	14.66
2035										
No Project Scenario	3.23	568,186	134,689	41,162	207,912	12,159,989	10,515,830	4,017	~~15.59~~	14.14
Old Plan Scenario Transit Grow	3.23	568,186	130,851	44,999	207,912	12,323,325	10,678,457	4,094	~~15.89~~	14.41
Trend Scenario Transit Maintain	3.23	568,186	134,689	41,162	207,912	12,201,803	10,557,662	4,038	~~15.67~~	14.21
Blueprint Scenario Transit Grow	3.23	568,186	130,851	44,999	207,912	12,085,473	10,441,330	3,992	~~15.49~~	14.05
Blueprint Plus Scenario Transit Grow	3.23	568,186	129,490	46,362	207,912	12,052,420	10,408,276	3,980	~~15.44~~	14.01
2042										
No Project Scenario	3.25	604,969	141,868	44,464	220,210	12,758,055	11,046,917	4,229	~~15.41~~	13.98
Old Plan Scenario Transit Grow	3.25	604,969	136,688	49,645	220,210	12,897,144	11,185,684	4,304	~~15.69~~	14.23
Trend Scenario Transit Maintain	3.25	604,969	141,868	44,464	220,210	12,848,274	11,137,389	4,275	~~15.58~~	14.13
Blueprint Scenario Transit Grow	3.25	604,969	136,688	49,645	220,210	12,699,425	10,988,544	4,219	~~15.37~~	13.95
Blueprint Plus Scenario Transit Grow	3.25	604,969	134,850	51,484	220,210	12,657,231	10,946,349	4,203	~~15.32~~	13.89

Item	Notes	Source
Persons/HU	Persons per housing unit	DOF
Population	Total scenario population	DOF
HU	Total scenario housing units	DOF
SF	Total single family housing units	DOF
MF	Total multi-family housing units	DOF
EMP	Total employment units	DOF
Regional VMT	Total daily VMT including XX trips	TCAG Model
SB 375 VMT	Total daily VMT excluding XX trips	TCAG Model
EF 14 CO2	SB375 daily CO2~~e metric~~ tons (Annual) excluding XX trips	EMFAC 14
Moving Cooler Reduction	Percent CO2~~e~~ per capita reductions from 2005 base	Moving Cooler Table 4.2
Total % GHG/per capita Reduction	Percent CO2~~e~~ per capita reductions from 2005 base	EMFAC 14
Transit Ridership	Total daily regional transit ridership	TCAG Model
TDM Mode Share	Mode Share	TCAG Model
ROG	ROG total daily ~~metric~~ tons (Summer)	EMFAC 14
NOX	NOX total exhaust daily ~~metric~~ tons (Summer)	EMFAC 14
NOX	NOX total exhaust daily ~~metric~~ tons (Winter)	EMFAC 14
PM10	PM10 total daily ~~metric~~ tons (Winter)	EMFAC 14
PM2.5	PM2.5 total daily ~~metric~~ tons (Winter)	EMFAC 14
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