Appendix 1-F: Goods Movement Chapter

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Goods Movement

INTRODUCTORY STATEMENT

Located in the heart of California's Central Valley, Tulare County is at the core of California's agricultural industry. With 481,649 residents and a diversified agricultural industry, Tulare County contains many of California's key goods movement corridors. The Business, Transportation and Housing Agency has identified the Central Valley, including Tulare County, as one of the four priority regions for goods movement in the State of California [Figure G-1.1]. The Valley and Tulare County serve as a primary trade corridor for California's two largest metropolitan areas: Los Angeles and San Francisco.

Tulare County's geographic location, availability of land, growing population, and large agricultural industry makes its highways and corridors some of the most traveled in the state of California. In 2007, nearly 500 million tons of goods moved into, out of, intra-regionally, or through the San Joaquin Valley, transported by trucks, rail, water, and air freight modes and is expected to grow to almost $800 million tons by 2040 (SJV Interregional Goods Movement Plan 2013). As one of California's fastest growing regions, goods movement and transportation will become increasingly important in the future.

GOODS MOVEMENT

The Tulare County region relies heavily on goods movement due to its agricultural production, centralized location, and distribution centers. Goods Movement in the San Joaquin Valley is currently dominated by a single transportation mode – trucking. The SJV Interregional Goods Movement Plan 2013 reported that goods movement dependent industries (including agriculture, food processing, construction, energy production, and transportation and logistics) accounted for over 564,000 jobs and $56 billion in economic output in 2010. And in 2007, of the 500 million tons of goods that moved into, out of, or within the region, more than 90% moved by truck. There are good reasons for this, and trucks will always be a very important component to goods movement in the San Joaquin Valley (SJV). However, it is important to continue to study the potential of expanding other modes in the region – including short haul rail (in particular from an inland port at Shafter or Crows Landing to the Port of Oakland), improved access to Class I rail, and increased use of air cargo.

The Commodity flow of products entering and leaving Tulare County are diverse and numerous. The type of products that are being moved include farm products, aggregates, food, materials, fuels, paper products, plastics, electronics, textiles, consumer products to be shipped into distributions and to be shipped out to market. It is anticipated to continue to grow from 2007 to 2040 by an average of 56%. Figure G-2.1 shows the typical commodity flow of agricultural products. Tulare County is the number one producer of milk in the Country. Tulare County also produces a large amount of citrus, nuts, berries, and other agricultural related products that are shipped across the country and the world to international markets.

Tulare County's numerous agribusiness industries heavily rely on the transfer of goods throughout the State of California. Goods such as grapes, peaches, plums, and many others, rely on the local corridors and highways to make it from farm-to-market in a timely manner. This farm-to-market timeliness has huge economic implications. With the proper implementation of goods movement infrastructure, Tulare County can preserve its local and international markets.

FIGURE G-1.1
CALIFORNIA TRADE CORRIDORS

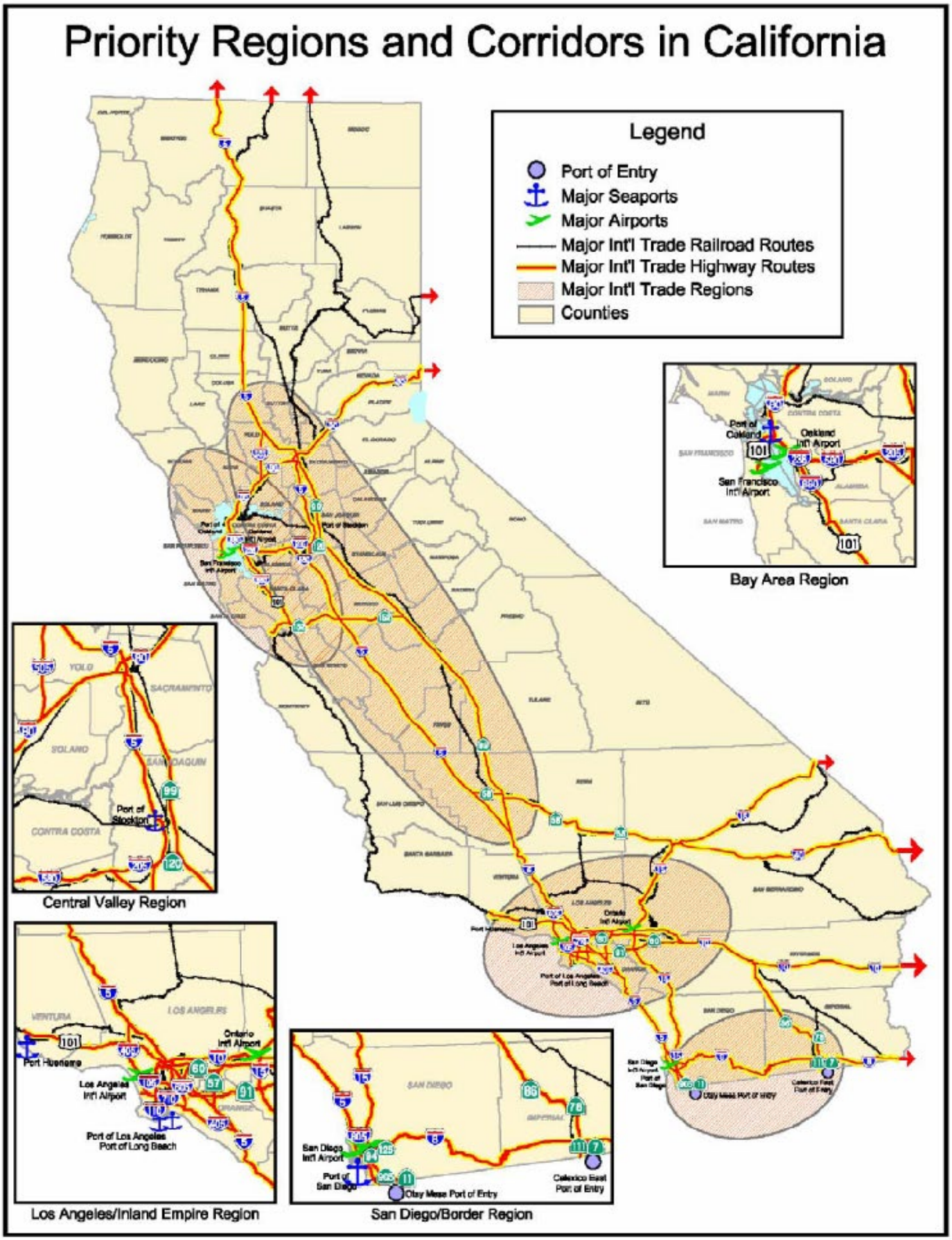
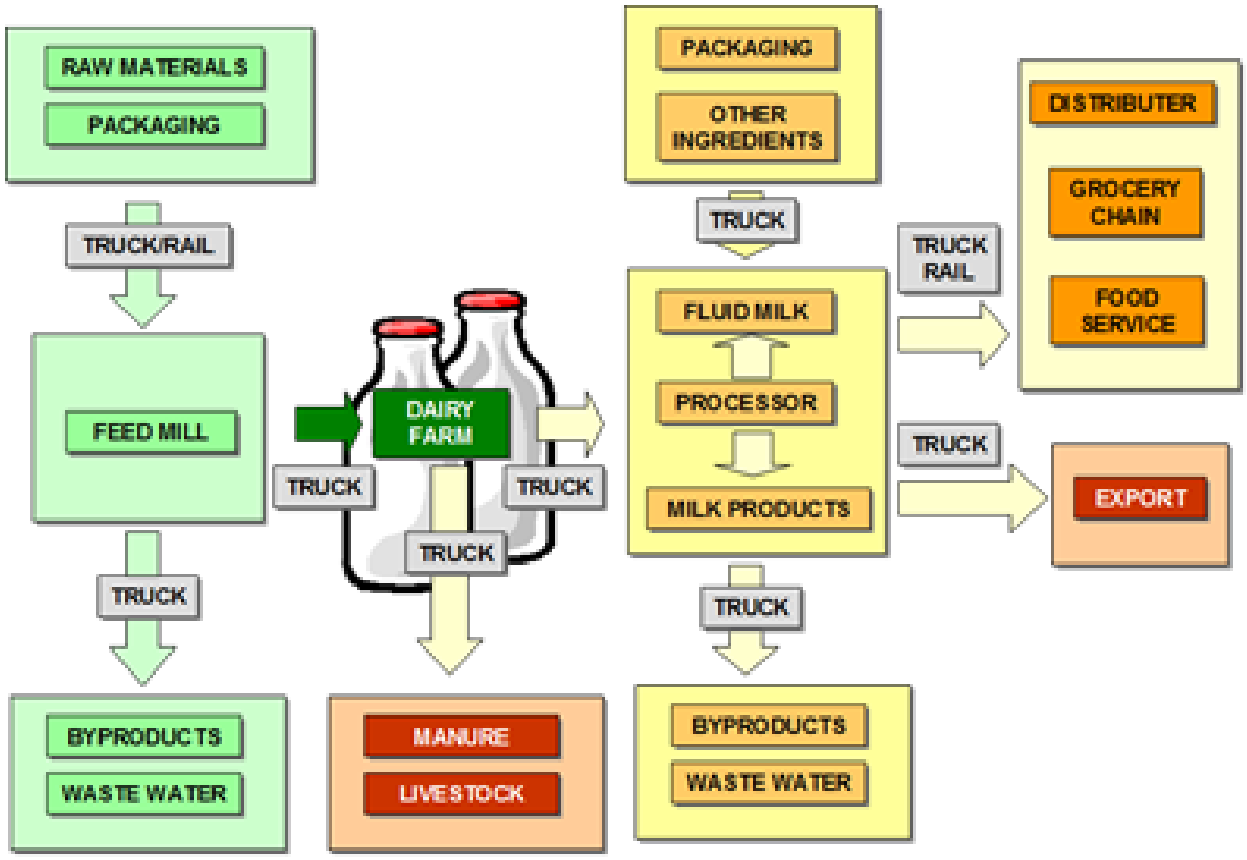


FIGURE G-2.1
COMMODITY FLOW



In 2020 over $7.14 billion worth of agricultural goods were produced in Tulare County. There were 43 commodities valued over $1 million. Tulare County continues to produce high-quality crops that provide food and fiber to more than 96 countries throughout the world. The top agricultural products are listed in Table G-1.1.

TABLE G-1.1
TOP AGRICULTURAL PRODUCTS

Product	2020 Total Value
Milk	$1,866,696,000
Oranges - Navels, and Valencias	$1,062,257,000
Cattle & Calves	$602,035,000
Grapes	$569,813,000
Pistachio Nuts	$444,235,000
Tangerines	$402,116,000
Almonds, Meats, & Hulls	$352,338,000
Lemons	$268,650,000
Corn	$185,758,000
Peaches	$171,961,000

The flow of commodities is vital to Tulare County's agricultural market. Products are shipped to Long Beach, Oakland, Port of Stockton, and Airport (Farmington facility). Products are also shipped via Union Pacific Rail and Burlington Northern and Santa Fe to Canada and other export facilities throughout the United States. Table G-2.1 displays the top 10 Export

Countries. The effective movement of goods throughout Tulare County is crucial for Tulare County's agribusiness and entire economy.

Many of the Tulare County's agricultural and manufacturing products utilize the Port of Oakland, LA/Long Beach, and Stockton to access to national and international markets. This connectivity is essential to the livelihood of the Tulare County and should be preserved. In addition, as industries within the San Joaquin Valley strive to move up the value chain in agricultural production, these links to domestic and international markets will become even more crucial. Institutional support for marketing Tulare County products includes California's International Trade Coordinating Council, California Enterprise Zones, and Free Trade Zones established at several locations throughout the SJV.

TABLE G-2.1
TOP TEN EXPORT COUNTRIES

Country	Cartons
Republic of Korea	6,678,942
China	4,567,413
Japan	4,520,099
Mexico	2,479,390
Taiwan	1,938,793
Australia	1,141,734
Hong Kong	803,874
India	803,778
Vietnam	758,085
Canada	616,842

The leading agricultural industry in Tulare County is dairy. As shown in Table G-1.1, milk, by a substantial margin, is the leading agricultural product in Tulare County. In addition, other products like cattle and calves, corn and alfalfa have strong associations with the dairy industry.

Tulare County is the leading milk producing county in California and the United States. In 2020, the County produced over 10.0 billion pounds of milk. This represents 24.3% of California's production and 4.5% of the entire United States. If Tulare County were its own state, it would rank 9th in milk production, just ahead of New Mexico [Table G-3.1].

TABLE G-3.1
TOP TEN MILK-PRODUCING STATES

State	Pounds(millions)
California	31,246*
Wisconsin	30,730
Idaho	16,241
New York	15,337
Texas	14,831
Michigan	11,683
Pennsylvania	10,276
Minnesota	10,149
Tulare County	***10,036***
New Mexico	8,169
Washington	6,817

Source: USDA Milk Production 2020 Summary
*California's total minus Tulare County

Unlike other agricultural products, milk is produced 365 days a year. In addition, trucks used to ship milk to processing facilities weigh up to the 80,000-pound California state maximum limit. The constant production coupled with heavy trucks have a significant impact on the Tulare County road system. One 80,000-pound truck has an equivalent impact of 9,600 passenger cars. This impact was addressed in TCAG's Tulare County Dairy Route Study (2012). The study identified dairy routes on County roads in unincorporated Tulare County. Table G-4.1 shows the rehabilitation costs of all the identified County roads, roads with greater than 300 truck ADT and roads with greater than 500 truck ADT. This study was limited to impacts to County roads. There are also additional impacts that have not yet been studied to city roads and the state highway system.

TABLE G-4.1
COUNTY DAIRY ROAD REHABILITATION

ADT	Miles	Cost
All	514.9	$192,826,000
300+	167.0	$51,965,000
500+	97.5	$36,347,000

Source: 2012 Tulare County Dairy Route Study

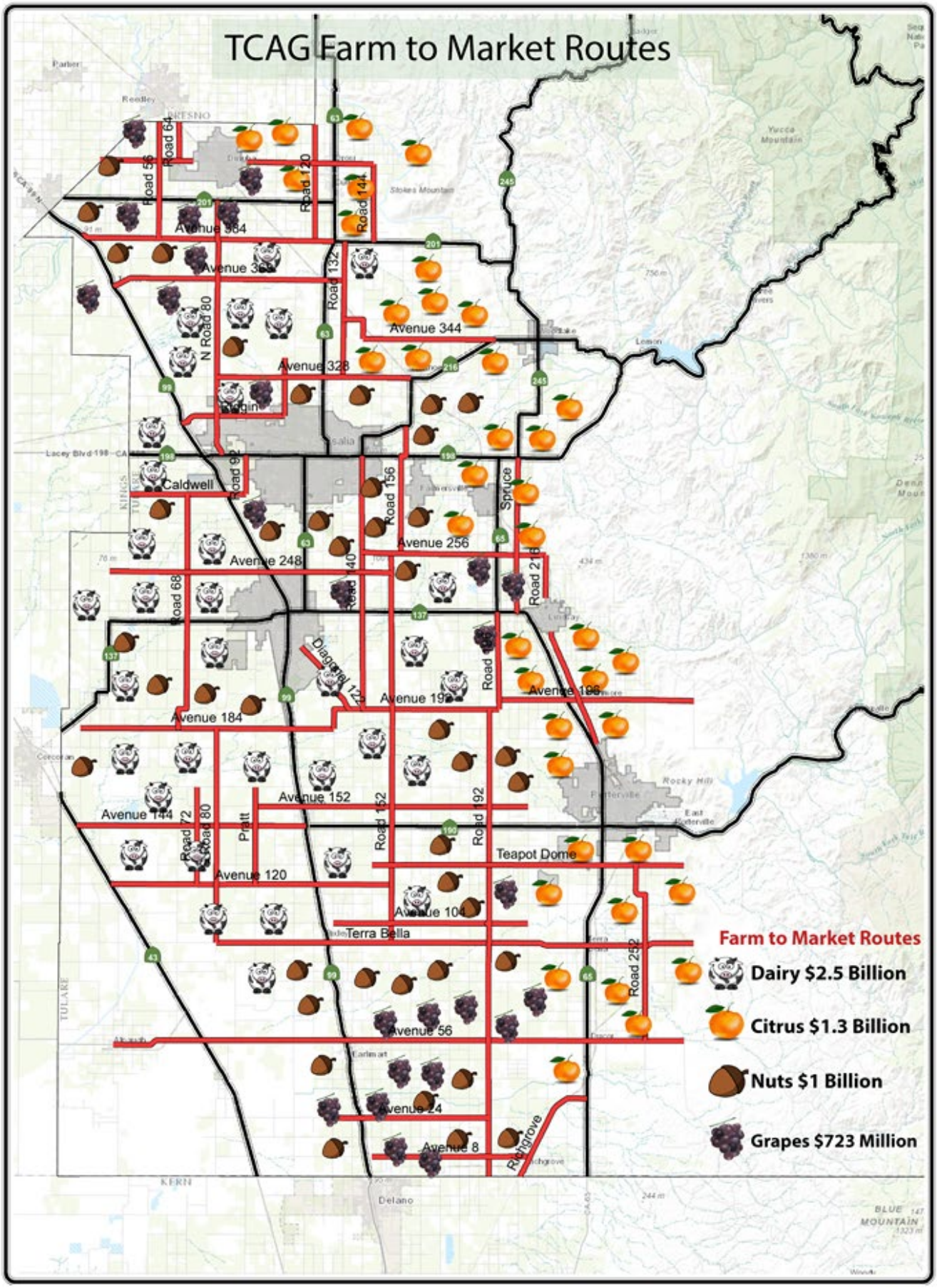
FARM TO MARKET ROUTES

The Tulare County Ag industry was the leading producer of commodities in the USA at $8.1 billion dollars in 2014 and a leading exporter to over 75 countries around the world. TCAG looked at the rehabilitation needs of Ag industry related truck routes in Tulare County and endeavored to prioritize them for rehabilitation based upon agricultural goods movement. In 2016, TCAG studied over 40 routes and identified over $200 million in rehabilitation costs to bring them up to a good state of repair. TCAG Farm to Market (FTM) Routes are a network of roads that have at least 300 trucks per day (Figure G-3.1) that comprise the backbone of commodity goods movement in Tulare County.

These Ag truck routes are so important to the economy of Tulare County that Measure R has programmed $5 million dollars in 2016 for the rehabilitation and maintenance of priority FTM Routes. FTM Routes are prioritized by goods movement; pavement condition; traffic safety; and AG value by Benefit/Cost analysis. Approximately 12 miles of FTM Routes will be improved under the Measure R Program over the next several years. It is anticipated with the passage of SB 1, with an emphasis on fix-it first, that FTM Routes will remain a high priority for rehabilitation in Tulare County.

The following revenue sources fund the projects in the RTP:

FIGURE G-3.1
FARM TO MARKET ROUTES



CALIFORNIA INLAND PORT PROJECT

A collaborative consortium of California partners has joined forces to analyze the feasibility of developing a new, inter-modal rail spine to connect seaports to key markets via the Central Valley. This California "Inland Port" system would cut greenhouse gases, significantly improve air quality, reduce road congestion, boost traffic safety, and advance California's extraordinarily large intra-state freight movement system.

Given the scale of California's market, its geographic proximity, and its seaport infrastructure, the California Inland Port would become a nationally significant logistics and economic development project; a key to advancing California's ambitious climate, economy, and equity goals.

PROJECT STAKEHOLDERS AND SUPPORTERS

The primary stakeholders on this project represent a unique blend of public and private partners, all committed to increasing the competitiveness of the San Joaquin Valley: The Port of Los Angeles; The Port of Long Beach; Union Pacific Railroad; BNSF Railroad; The San Joaquin Valley Air Pollution Control District; South Coast Air Quality Management District; San Joaquin Valley Metropolitan Planning Organizations; Sacramento County; Sacramento Council of Governments; Sacramento Metropolitan Air Quality Management District; and the Central Valley Community Foundation.

The project has received further support from the California State Transportation Agency, Governor Newsom's Office of Planning and Research, California Air Resources Board, State and Valley Legislators, and private companies.

PROJECT OBJECTIVES

The implementation of the inland port concept in California supports a wide range of State and local community public policy objectives, including a significant improvement in economic competitiveness, a substantial decrease in greenhouse gas emissions, and a sizable reduction in highway congestion.

The objectives of the California Inland Port are:

- Support new job creation and investment growth by fundamentally repositioning the economic competitiveness of the San Joaquin Valley region.
- Create a more robust and efficient distribution system with a specific focus on high-value manufacturing, e-commerce, and the agriculture sectors.
- Reducing shipping costs for shippers that manage global supply chains through direct intermodal rail service to/from the San Pedro seaports.
- Significantly reduce air pollution and greenhouse gas emissions by reducing the number of truck trips from the seaports complex in the Los Angeles region to the Central Valley and the Bay Area.
- Reduce highway road congestion, with a parallel reduction in the requirement for road maintenance; accident-avoidance savings; all reducing cost.

PHASE ONE FEASIBILITY STUDY (APRIL 2020)

Phase One of this project analyzed the size of the market; reviewed the underlying truck versus rail transportation costs; and analyzed the reduction in criteria pollutants, fuel use, and GHG emissions. The Preliminary Business Model concluded that a California inland port rail system is viable and that it would greatly reduce the amount of truck traffic and associated air pollution emissions on Valley highways by allowing goods to be shipped via railway instead of on heavy-duty trucks.

Although Phase One did not study specific site locations, it did test three scenarios for general locations designed to serve the Bay Area, SJ Valley, and Sacramento market sheds representing 14.2 million people. Scenario 1 included 3 locations (Lathrop, Fresno, and Bakersfield). **Scenario 2 included 2 locations (Lathrop and Tulare)**. And scenario 3 included only one location at Lathrop.

In comparing the three scenarios, an interim conclusion can be reached that that the Two-Stop scenario with a market penetration rate of at least 20% could yield a viable project. The

Two-Stop scenario yields: 1) somewhat longer travel distances between intermodal stations which supports rail operational efficiency, and 2) by the ultimate siting of intermodal assets, can offer optimized market access to most or all the Market Shed.

PHASE TWO FEASIBILITY STUDY (CURRENTLY UNDERWAY)

Phase Two is developing market readiness and acceptance, estimating costs, developing a partnership with one or both Class One railroads, reviewing the economic competitiveness impact to the region, and understanding the environmental process to move forward. This phase is where the Executive Advisory Group (EAG) is formed, helping to inform decision making as the study moves forward. All major stakeholders will have a role in this group. The private sector, including major shippers and experts, will inform the EAG through a Shipper's Committee.

PHASE THREE FEASIBILITY STUDY (AWARDED JUNE 2021)

Phase Three will require a similar approach as used in the previous phases and will move the project forward to the delivery stage, utilizing the contribution and involvement by a range of partners and other stakeholders. Tasks will be sequenced to Phase Two so that there is a logical progression, culminating with clear direction to support advancing the project to delivery. Phase Three will specifically detail a Project Financial Performance Model, develop a Business Plan for Green, High-Efficiency Logistics/Investment Hubs Around Intermodal Facilities, plan for an Intermodal Facility Site Selection, develop Detailed Capital Cost Programs, deliver a Railroad Agreement to Collaborate, and develop Public-Private Delivery Options.

For more information on SJ Valley Goods Movement Studies see the 2022 RTP Valleywide Chapter included as Appendix 1-G.

AIR QUALITY CONCERNS

Tulare County also suffers from some of the worst air quality in the nation. In large part, this is due to the San Joaquin Valley's bowl-shaped geography. Residents of the San Joaquin Valley often suffer from asthma attacks, acute bronchitis, lost workdays, reduced activity, hospital admissions, school absences, and even premature death because of exposure to air pollution. The American Lung Association "State of the Air" 2021 listed the top 10 most polluted cities for Ozone, and unfortunately cities in the SJV also rank at the top for Particulate pollution:

1. Los Angeles-Long Beach, CA
2. Bakersfield, CA (SJV)
3. Visalia, CA (SJV)
4. Fresno-Madera-Hanford, CA (SJV)
5. Phoenix-Mesa, AZ
6. Sacramento-Roseville, CA
7. San Diego-Chula Vista-Carlsbad, CA

8. Denver-Aurora, CO
9. Salt Lake City-Provo-Orem, UT
10. San Jose-San Francisco-Oakland, CA

Goods movement in the Tulare County region results in environmental and safety impacts to communities. Movement of trucks, trains, and airplanes all contribute to the region's air pollution problems, as well as the associated impacts to public health and the environment. Compared to the total on-road mobile emission sources for Tulare County as displayed in Table G-5.1 heavy duty trucks (tractor trailers) account for 6.4% (measured in tons per day) of Reactive Organic Gases, 21.4% Carbon Monoxide, 17.1% Nitrogen Oxide, 71.5% Particulate Matter 10 microns, 37.8% and 43.6% of Particulate Matter 2.5 microns. Moving goods by rail has less emissions and impact on the Valley Air making it a desirable mode alternative to improve air quality conditions in the San Joaquin Valley. Trains contribute 3.8% (measured in tons per day) of Reactive Organic Gases, 2.4% Carbon Monoxide, 35.1% Nitrogen Oxide, 18.0% Particulate Matter 10 microns and 18.6% Particulate Matter 2.5 microns from off-road mobile sources.

In addition, safety concerns exist around at-grade rail crossings, as well as along some corridors not designed to safely carry high truck traffic, and places where truck shortages lead to illegally parked trucks. Incompatible land uses – residents near distribution centers, rail yards, and other goods movement facilities can be impacted by light and noise pollution, as well as from runoff pollution to regional drinking water. In some cases, expanding urban/residential areas can move incompatible land uses into close contact, causing conflicts between residents and the goods movement facilities

As Tulare County's population continues to grow, it will become increasingly important to develop efficient techniques to for improving commodity flow and logistics of moving products from point A to point B to reduce emissions and fuel consumption.

INCREASED LOAD CAPACITY

With the increase cost of fuel and air quality, greenhouse gas emissions and improved technology, the California Trucking Association (CTA) is advocating to increase payload weight limits on trailers. The current standard in California is on a Tandem axle trailer 34,000 lbs. (Gross Vehicle Weight of 80,000 lbs.) with 65-foot tractor and trailer limits. In other states the weight limit on tandem axel trailers is as high as 42,000 lbs., and in some states, they allow a tridem axle weight limit of 42,000 lbs. to 54,000 lbs. With the increased weight limits more products can be moved using less fuel and reducing emissions. The opportunity to increase weight limits is legislative and would require additional science and engineering to determine what limits the highways can bare and the maintenance cost by adding additional weight vs. axle displacement (third axel).

Adding length is another opportunity to move additional goods that would lower fuel costs and emissions. California has a 65-foot limit double trailers (53 foot for single trailers) while other states allow for triple trailers on interstates only. This becomes a safety issue and must be determined by legislation. These arguments can be made and merit discussion in the State legislative process.

TABLE G-5.1
2020 ESTIMATED ANNUAL AVERAGE EMISSIONS BY CALIFORNIA ARB
TONS PER DAY

MOBILE SOURCES	TOG	ROG	CO	NOX	SOX	PM	PM10	PM2.5
ON-ROAD MOTOR VEHICLES								
LIGHT DUTY PASSENGER (LDA)	1.02	0.95	7.89	0.62	0.02	0.19	0.19	0.10
LIGHT DUTY TRUCKS - 1 (LDT1)	0.62	0.59	4.33	0.41	0.01	0.07	0.07	0.04
LIGHT DUTY TRUCKS - 2 (LDT2)	1.01	0.94	7.20	0.78	0.01	0.14	0.14	0.09
MEDIUM DUTY TRUCKS (MDV)	0.61	0.56	4.84	0.53	0.01	0.08	0.08	0.05
LIGHT HEAVY DUTY GAS TRUCKS - 1 (LHDGT1)	0.27	0.26	1.34	0.41	0.00	0.01	0.01	0.01
LIGHT HEAVY DUTY GAS TRUCKS - 2 (LHDGT2)	0.08	0.08	0.36	0.11	0.00	0.00	0.00	0.00
MEDIUM HEAVY DUTY GAS TRUCKS (MHDGT)	0.08	0.07	0.79	0.09	0.00	0.00	0.00	0.00
HEAVY HEAVY DUTY GAS TRUCKS (HHDGT)	0.03	0.03	0.74	0.11	0.00	0.00	0.00	0.00
LIGHT HEAVY-DUTY DIESEL TRUCKS - 1 (LHDDT1)	0.02	0.01	0.09	0.22	0.00	0.01	0.01	0.00
LIGHT HEAVY-DUTY DIESEL TRUCKS - 2 (LHDDT2)	0.01	0.01	0.06	0.17	0.00	0.00	0.00	0.00
MEDIUM HEAVY-DUTY DIESEL TRUCKS (MHDDT)	0.04	0.03	0.38	0.73	0.00	0.04	0.04	0.04
HEAVY HEAVY-DUTY DIESEL TRUCKS (HHDDT)	0.59	0.52	2.32	6.05	0.02	0.25	0.25	0.19
MOTORCYCLES (MCY)	0.63	0.59	4.26	0.19	0.00	0.01	0.01	0.00
HEAVY DUTY DIESEL URBAN BUSES (UBD)	0.01	0.01	0.03	0.15	0.00	0.00	0.00	0.00
HEAVY DUTY GAS URBAN BUSES (UBG)	0.03	0.02	0.29	0.08	0.00	0.00	0.00	0.00
SCHOOL BUSES (SB)	0.02	0.02	0.21	0.26	0.00	0.01	0.01	0.01
OTHER BUSES (OB)	0.02	0.02	0.20	0.07	0.00	0.00	0.00	0.00
MOTOR HOMES (MH)	0.01	0.01	0.14	0.06	0.00	0.00	0.00	0.00
*** TOTAL ON-ROAD MOTOR VEHICLES**	**5.09**	**4.72**	**35.47**	**11.03**	**0.08**	**0.84**	**0.82**	**0.55**
OTHER MOBILE SOURCES								
AIRCRAFT	0.11	0.09	2.32	0.06	0.01	0.01	0.01	0.01
TRAINS	0.29	0.24	0.90	3.16	0.00	0.09	0.09	0.08
RECREATIONAL BOATS	1.03	0.99	8.11	0.37	0.00	0.10	0.09	0.07
OFF-ROAD RECREATIONAL VEHICLES	3.41	3.19	7.43	0.09	0.03	0.04	0.04	0.03
OFF-ROAD EQUIPMENT	1.04	0.94	11.63	1.76	0.00	0.09	0.09	0.08
FARM EQUIPMENT	0.74	0.64	7.21	3.57	0.01	0.18	0.18	0.16
FUEL STORAGE AND HANDLING	0.15	0.15	-	-	-	-	-	-
*** TOTAL OTHER MOBILE SOURCES**	**6.77**	**6.24**	**37.60**	**9.01**	**0.06**	**0.52**	**0.50**	**0.43**
**** TOTAL MOBILE SOURCES**	**11.86**	**10.96**	**73.07**	**20.04**	**0.15**	**1.36**	**1.33**	**0.99**

STATE ROUTE 99

State Route (SR) 99 is the transportation backbone of Tulare County and the San Joaquin Valley. It runs 275 miles (54 miles in Tulare County) through the Valley from I-5 in southern Kern County north to the San Joaquin/Sacramento County border. The highway serves as the vital link for agricultural goods leaving Tulare County and the Valley for intrastate, interstate, and international destinations. In addition to its importance to trade, SR 99 is the preeminent artery connecting the SJV's population to the rest of the state and country.

SR 99 is designated as a High Emphasis Focus Route in the Interregional Transportation Strategic Plan (ITSP) and is a "Priority Global Gateway" for goods movement in the Global Gateways Development Program (January 2002). SR 99 is also classified as a principal arterial and is a part of the National Highway System (NHS) as a Strategic Highway Network (STRAHNET) Route. The Department of Defense has identified STRAHNET routes as critical for supporting defense requirements and they are mandatory components of the NHS. It is also on the national network from the Surface Transportation Assistance Act (STAA) for large trucks, and is a High Emphasis, Focus, and Gateway Route as part of the California Interregional Roadway System (IRR). SR 99 is an Intermodal Corridor of Economic Significance (ICES) between I 5 south of Bakersfield and SR 50 in Sacramento.

In 2005, legislation was enacted that designated the section of SR 99 from Bakersfield to Sacramento as a future potential interstate. At this time, it is unclear how the existing non-standard features on SR 99 would be treated if it were to be added to the interstate system. The regulations do make a "provisional" interstate designation available, provided that the facility is brought up to standards by 2030. The SJV Regional Transportation Planning Agency (RTPA) Executive Directors and the California Department of Transportation (Caltrans) approved the development of a study to determine the economic benefit of designating SR-99 as an interstate.

SR 99 is a critically vital farm to market route conveying agricultural goods to the country and to international destinations through the Ports of Oakland and Los Angeles/Long Beach while also serving as the primary artery connecting the major population centers in the San Joaquin Valley to the San Francisco and Los Angeles metro areas. The importance of SR 99 has been identified at the State and Federal levels. State Route 99 was designated as a "Major International Trade Highway Route" and "Priority Corridor" in the 2025 California Transportation Plan and the California Goods Movement Action Plan and was designated as a "National Highway System High Priority Corridor" by federal transportation acts (currently MAP 21).

Caltrans SR 99 business plan envisioned and prioritized the completion of the freeway corridor to a 6-lane facility throughout the San Joaquin Valley. The success of Proposition 1B provided a billion dollars to the corridor but the effort is not complete. TCAG along with our partners at Caltrans District 6 are committed to obtaining the funding to improve the corridor. SR 99 in Tulare County routinely exceeds 25% truck traffic in the 4-lane sections which combined with the delta of the speeds of automobiles creates dangerous conditions that contribute to accidents along the corridor. Safety along the corridor will continue to degrade as more logistics facilities locate in the region and from increased port activity in LA\Long Beach. TCAG is aware of state concerns over vehicle miles traveled, however the rural sections of SR 99 in our region are not considered commute corridors. Freeway widenings in the Tulare Region are constrained to this one corridor in the 2022 RTP SCS. Investment in SR 99 in our region will facilitate the efficient movement of goods and improve safety. There are four remaining segments proposed for widening in the 2022 RTP SCS which are

designed to complete the system and close the remaining dangerous 4-lane gaps in our region.

SR 99 is in the process of expansion to 6 lanes from the Fresno County line to the Kern County line. Approximately 17 miles have been completed to date with the remaining 37 miles planned to be completed by 2042. Funding was programmed from the SR 99 Corridor account from Proposition 1b to widen 12.6 miles of SR 99 to 6 lanes from Fresno County (Kingsburg) to Goshen which begun in 2010 with completion in 2014. With cost savings from the Prop 1b program the sections from Goshen to Caldwell were completed by 2017. The Betty Drive Interchange leading into Visalia's industrial park will begin was also completed in 2020 using Measure R and STIP funds. TCAG is continuing to partner with Caltrans to leverage funding from TCAG's share of the STIP with Caltrans' (IIP) for further SR-99 widening projects south of Caldwell much of which is scheduled for completion in 2029 [Table G-6.1].

TABLE G-6.1
COMPLETED AND PLANNED SR-99 WIDENING PROJECTS

Limits*	Miles	Open to Traffic	Cost ($ millions)
Fresno Co. to Goshen	13.0	2014	$102
Goshen to Caldwell	4.0	2017	$52
Caldwell to Prosperity	6.0	2023	$86
Prosperity to Ave 200	6.0	2029	$152
Ave 200 to Tipton	6.0	2042	$286
Tipton to Kern Co.	19.0	2029	$100
* Limits are generalized. Refer to Action Element Table A-13.1 and A-13.2 for precise limits.			

TRUCKS

Tulare County's centralized location makes it an ideal location for goods movements via the use of heavy-duty trucks. Many of Tulare County's major distribution centers are in the northern part of the county near Goshen, but distribution centers can be found throughout the entire county. Distribution centers for Wal-Mart, Joann's Fabrics, Best Buy, Ruiz Frozen Foods, UPS, Amazon and several packaging and food processing companies are located throughout Tulare County. Many companies have taken advantage of the available and affordable land by locating in Tulare County. Tulare County is 2.5 hours from Los Angeles, 3.5 hours to Long Beach, 3.5 hours from the Port of Oakland and 4 hours from San Francisco. Tulare County is also an ideal hub to the Western United State reaching Washington, Oregon, Idaho, Wyoming, Montana, Utah, Nevada, Arizona, New Mexico, and Colorado, in less than 24 hours.

SR 99 is the preeminent truck corridor in Tulare County. As mentioned before, SR 99 is the transportation backbone of the entire San Joaquin Valley and, along with I 5, the entire State. The other major truck corridors on the State Highway System in Tulare County feed into SR 99. They include SR 198 (from SR 65 to Kings County), SR 65 (from Kern County to SR 137), SR 190 (from SR 65 to SR 99) and SR 137 (from SR 65 to SR 99). Truck traffic on the major state route corridors is listed below in Table G-7.1.

TABLE G-7.1
TRUCK TRAFFIC ON STATE HIGHWAY SYSTEM

State Hwy	High/ Low	Percent Trucks	Est. Trucks per Day
SR-99	High	24.0%	16,320
	Low	22.0%	10,780
SR-198	High	9.0%	5,400
	Low	8.3%	1,966
SR-137	High	8.2%	1,252
	Low	4.8%	101
SR 190	High	18.0%	4,410
	Low	14.9%	642
SR-65	High	14.3%	2,288
	Low	13.1%	840

Source: Caltrans: 2019. Annual Average Daily Truck Traffic on the California State Highway System

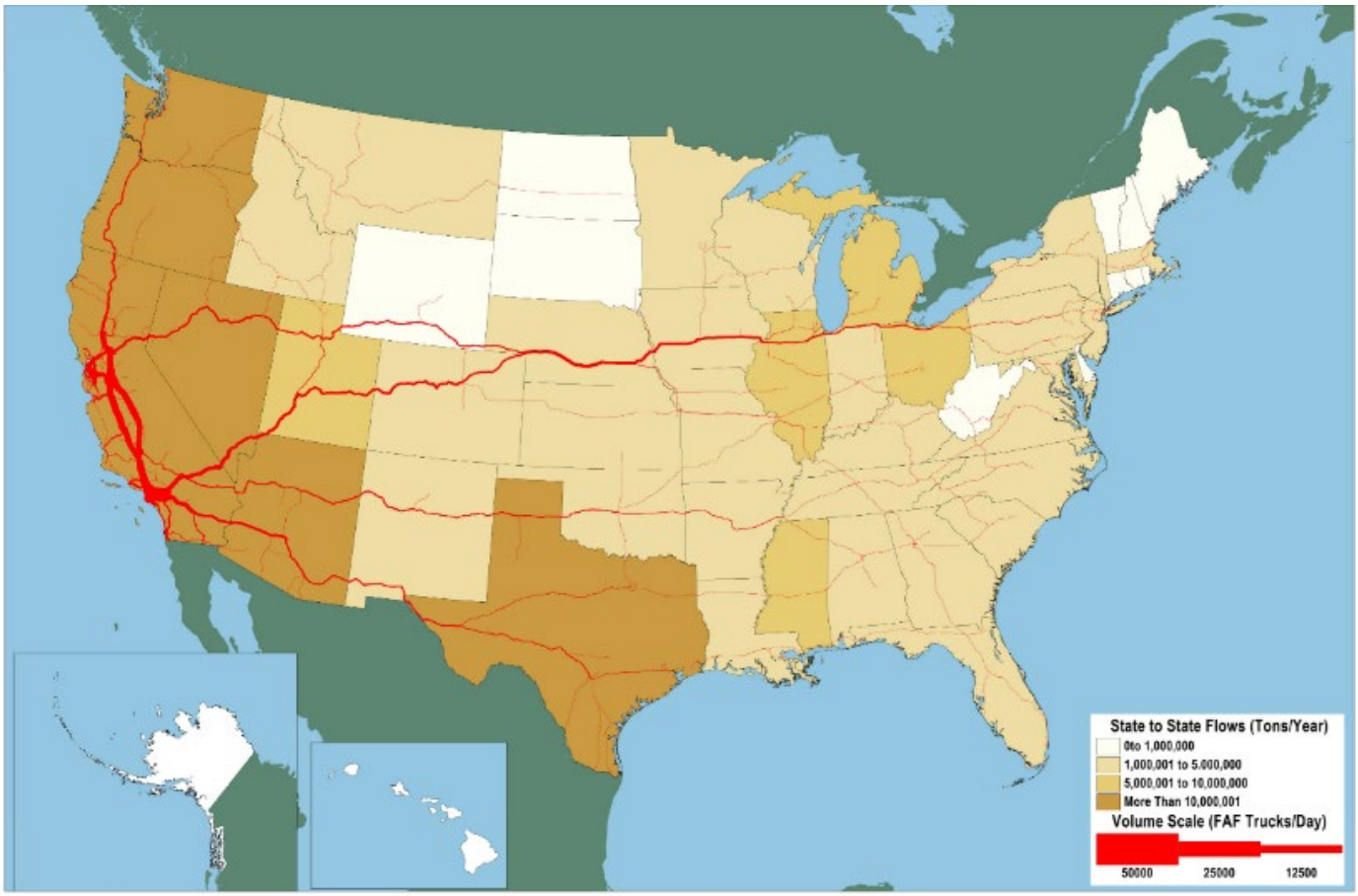
Truck traffic also makes up a large percentage of the total vehicles that travel along County and City roads such as Road 80, Avenue 416, and Spruce Road. The trucks that travel along Tulare County's key corridors are a vital part of California's economy, but they also cause congestion and contribute to the Valley's Air Pollution problems. Tulare County's air quality is among the worst in the nation. New technology coupled with Air District funds are replacing older diesel engines with new cleaner burning diesel engines and cleaner burning fuels (biodiesel and Natural Gas).

FIGURE G-4.1
TRUCK TRAVEL ON SR-99 IN TULARE COUNTY

Future truck volumes moving through the San Joaquin Valley were calculated from both the Federal Highway Administrations Freight Analysis Framework (FAF3) datasets (which provides annual tonnage) and substantiated by the SJV Valleywide Truck Model (which provides both annual tonnage by commodity and daily truck volumes). In 2040, according to the FAF3 routing tool, the main highway corridors used for truck movements will continue to be I-5, SR-99, and I-580 to 205, similar to 2007 (Figure G-5.1). State Route 99 bisects Tulare County from North to South and is the main goods movement corridor in the County and the San Joaquin Valley.

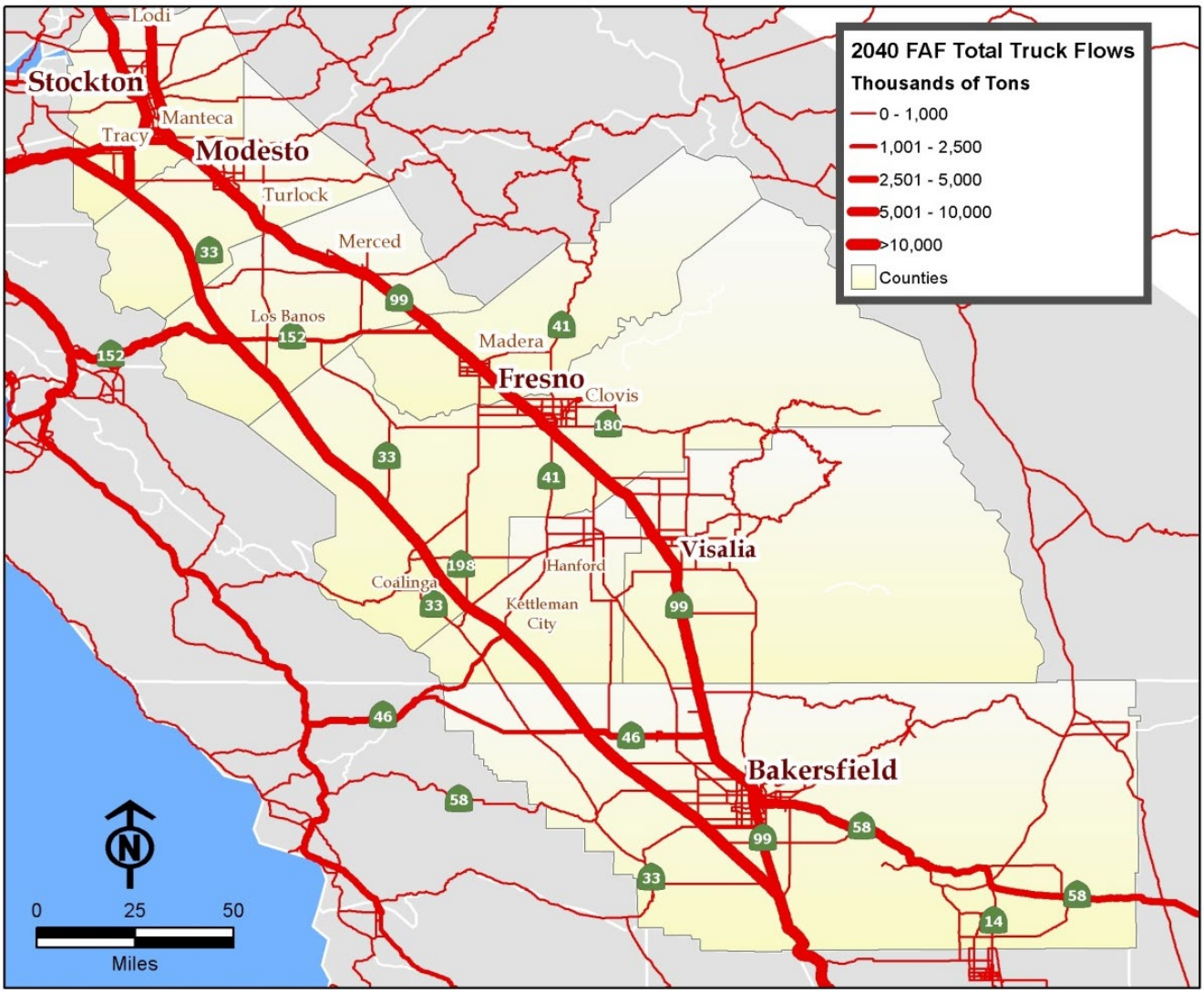
Improving truck related goods movement requires maintaining and improving existing corridors. In addition to the SR-99 widening projects listed in Table G-6.1, TCAG has funded several major projects that will improve goods movement in Tulare County. Those projects include the widenings of Road 80, Avenue 416, State Route 65 south of Porterville, and the interchange improvements at Betty Drive in Goshen, CA.

FIGURE G-5.1
MAJOR FLOWS BY TRUCK TO AND FROM CALIFORNIA



Note: Major flows include domestic and international freight moving by truck on highway segments with more than twenty five FAF trucks per day and between places typically more than fifty miles apart.
Source: U.S. Department of Transportation, Federal Highway Administration, Office of Freight Management and Operations, Freight Analysis Framework, version 4.3, 2017.

FIGURE G-6.1
TRUCK FLOWS IN THE SAN JOAQUIN VALLEY, 2040 (FAF3)



TCAG and local agencies will continue to work on ways to improve local goods movement corridors. Future goals include:

1. Improve roads that are key to local and regional goods movement.
2. Evaluate potential methods to reduce emissions caused by goods movement via truck.
3. Work with member agencies to encourage industrial development in appropriate areas.

RAIL

Three major rail lines are used for goods movement in Tulare County: Union Pacific Railroad, San Joaquin Valley Railroad (Short Line-Owned by Genessee & Wyoming Inc. (GWI)), and Burlington Northern and Santa Fe Railway Company.

Goods movement by rail has many advantages over goods movement by trucks. For example, most of the cargo shipped by rail is bulk items such as grains, food products, vehicles, and fuels (non-time sensitive commodities). Rail transport provides the option of

specialized rail cars such as flatbeds, refrigerated boxcars, fuel tankers, and piggyback cars. These specialized rail cars move a large variety of goods, giving rail an advantage over other modes of transportation for distances over 500 miles or more. Also, transportation by rail is typically less expensive for long hauls than trucks or air; however, rail is limited by speed and by the limitations due to a fixed rail track. Trains also have fewer negative impacts on air quality than trucks by volume that trains can carry (one train car can carry the contents of 3 and half 53-foot truck trailers).

The future CA rail system in 2040 is projected carry over 300 tons of freight inbound, outbound, and intra-regionally. This amounts to an increase of nearly 92% from 2013. By 2040, there are expected to be substantial shifts in the proportion of inbound and outbound tonnage, with outbound flows growing by nearly 72 million tons (139%) and inbound flows growing by 70 million tons (75%) (Figure G-7.1). Figure G-8.1 show that to be true in the short term as well with rail conveyed exports outpacing the growth in imports between the years 2012-2015.

FIGURE G-7.1
RAIL FREIGHT IN WEIGHT TO, FROM, THROUGH, AND WITHIN CALIFORNIA, 2013 AND 2040
2018 CALIFORNIA STATE RAIL PLAN

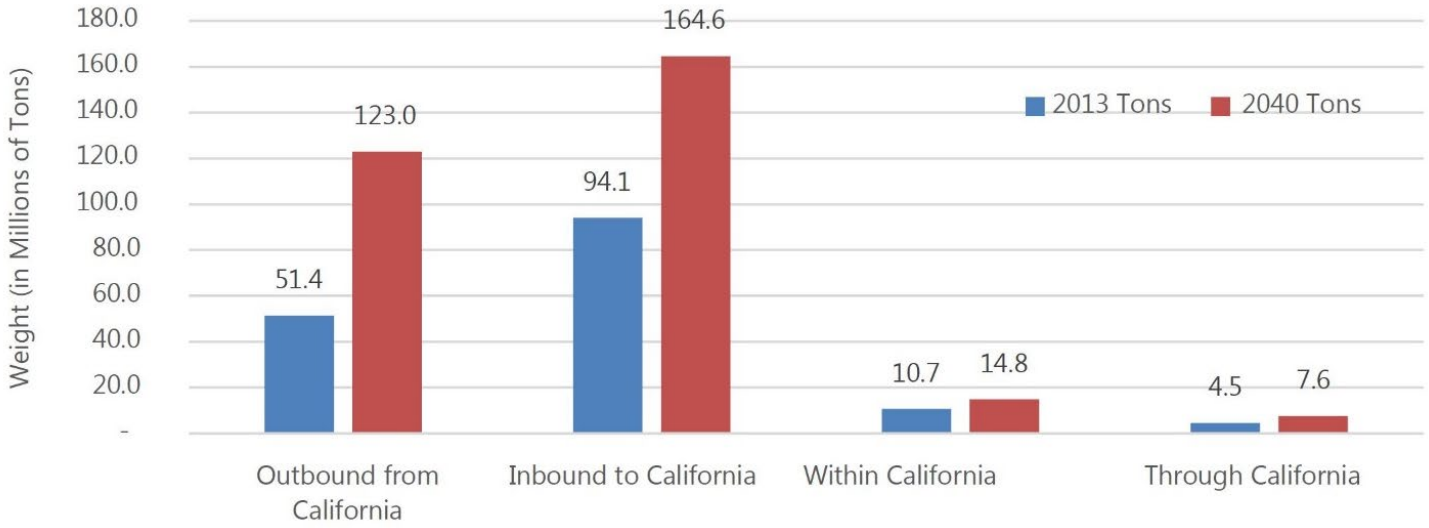


FIGURE G-8.1
2018 CALIFORNIA STATE RAIL PLAN: TOTAL INCREASE I NCALIFORNIA RAIL FREIGHT TONNAGE FLOWS
2012-2015 (IN MILLION TONS)

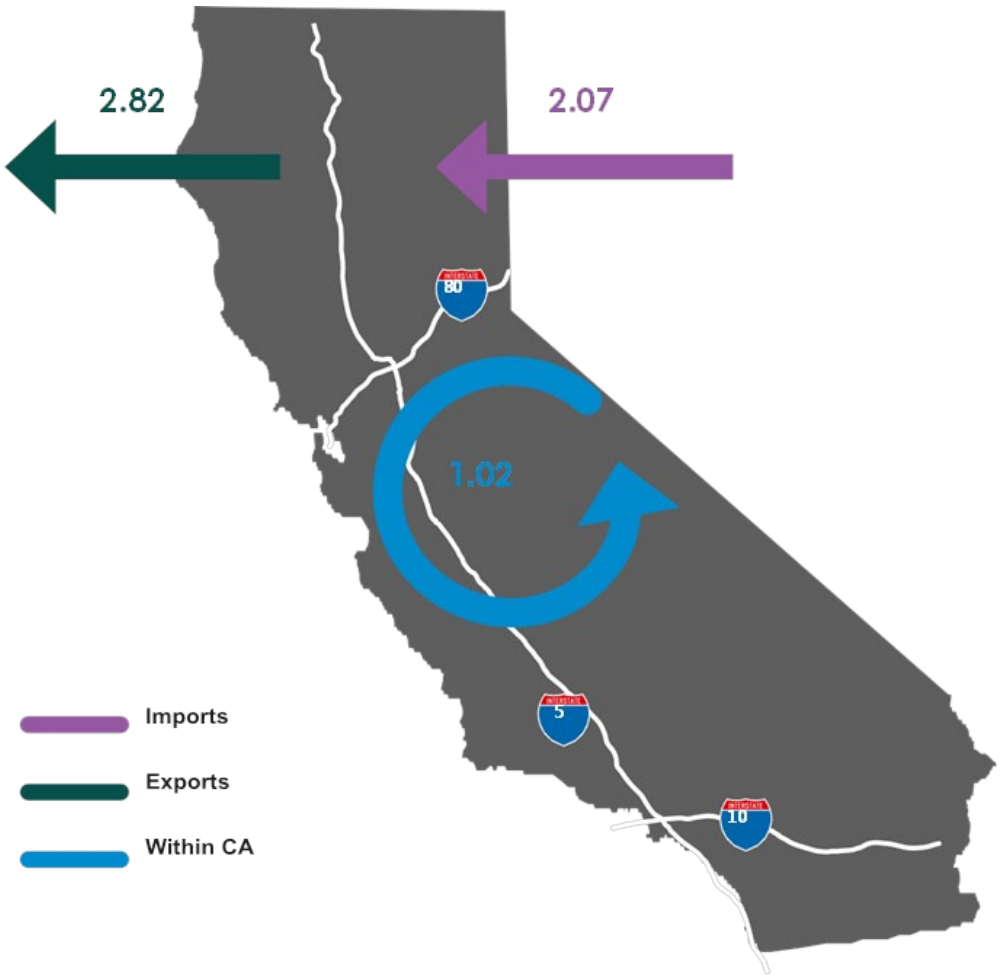


TABLE G-8.1
GROWTH IN INBOUND RAIL FLOWS BY DESTINATION COUNTY 2007-2040

Destination County	Rail Mode	2007 Tons	2040 Tons	Growth
San Joaquin	Carload	4,556,192	5,159,795	13%
Stanislaus	Carload	4,473,684	3,638,178	-19%
Tulare	Carload	3,711,968	2,994,166	-19%
Kern	Carload	3,553,198	4,178,512	18%
Kings	Carload	2,285,686	1,630,795	-29%
Fresno	Carload	1,728,756	1,971,966	14%
Merced	Carload	636,214	664,045	4%
Madera	Carload	613,998	562,118	-8%
Carload Total		**21,559,696**	**20,799,574**	**-4%**
San Joaquin	Intermodal	3,561,680	4,796,834	35%
Fresno	Intermodal	105,640	147,109	39%
Intermodal Total		**3,667,320**	**4,943,943**	35%

Source: California State Rail Plan – Freight Rail Market Assessment.

TABLE G-9.1
GROWTH IN OUTBOUND RAIL FLOWS BY DESTINATION COUNTY 2007 – 2040

Origin County	Rail Mode	2007 Tons	2040 Tons	Growth
Kern	Carload	3,075,460	5,349,555	74%
Stanislaus	Carload	1,493,056	3,605,931	142%
San Joaquin	Carload	941,844	1,572,383	67%
Fresno	Carload	616,632	2,203,074	257%
Merced	Carload	357,400	736,265	106%
Kings	Carload	136,652	365,228	167%
Tulare	Carload	109,960	303,627	176%
Madera	Carload	29,240	17,409	-40%
Carload Total		**6,760,244**	**14,153,473**	**109%**
San Joaquin	Intermodal	3,761,160	12,583,115	235%
Fresno	Intermodal	435,600	1,260,993	189%
Intermodal Total		**4,196,760**	**13,844,107**	**230%**

Source: California State Rail Plan – Freight Rail Market Assessment.

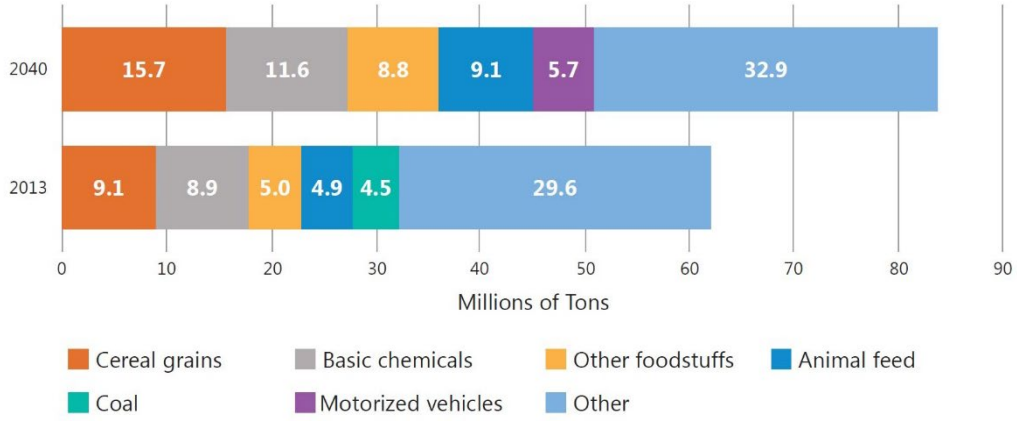
Consistent with 2007, carload service will continue to account for most rail flows but a smaller proportion in 2040 (about 65%, compared to almost 78% in 2007). There is growth projected in carload service, but it is marginal (about 20%). By contrast, intermodal service is expected to increase by 140%, and account for a full third of rail tonnage in 2040.

Inbound rail carload traffic (Table G-8.1) to Kern and San Joaquin Counties, account for nearly 50% of the future inbound carload rail flows. Rail carload tonnage to both Counties is expected to grow, along with tonnage to Fresno and Merced Counties. The remaining four Counties (Tulare County) expect a decline in inbound carload rail traffic.

Outbound rail carload traffic (Table G-8.1) is expected to increase over 100% by 2040 mostly related to food and agricultural products. Outbound intermodal business is handled at the BNSF and UP terminals in San Joaquin and Tulare County (176%) will grow substantially by 2040, due in part to growth in the cluster of distribution facilities.

The commodity profile for carload commodities remains similar between 2007 and 2040 (Table G-9.1) but tonnage of certain commodities will grow faster than others. Some major inbound rail carload commodities will decline, particularly grain and feed for the livestock industry. It is possible that some of this traffic will be carried by truck from more localized sources, a trend described previously in this report. Outbound prepared food products (including all kinds of canned, bottled, frozen, and packaged products), mixed freight, and other agricultural products are some key growth commodities by 2040, all increasing over 140% or more. Figure G-9.1 compares the tonnage of the top five commodities transported by rail in 2013 and 2040. Significant growth is expected in grains and feed with motorized vehicles replacing coal in the top five

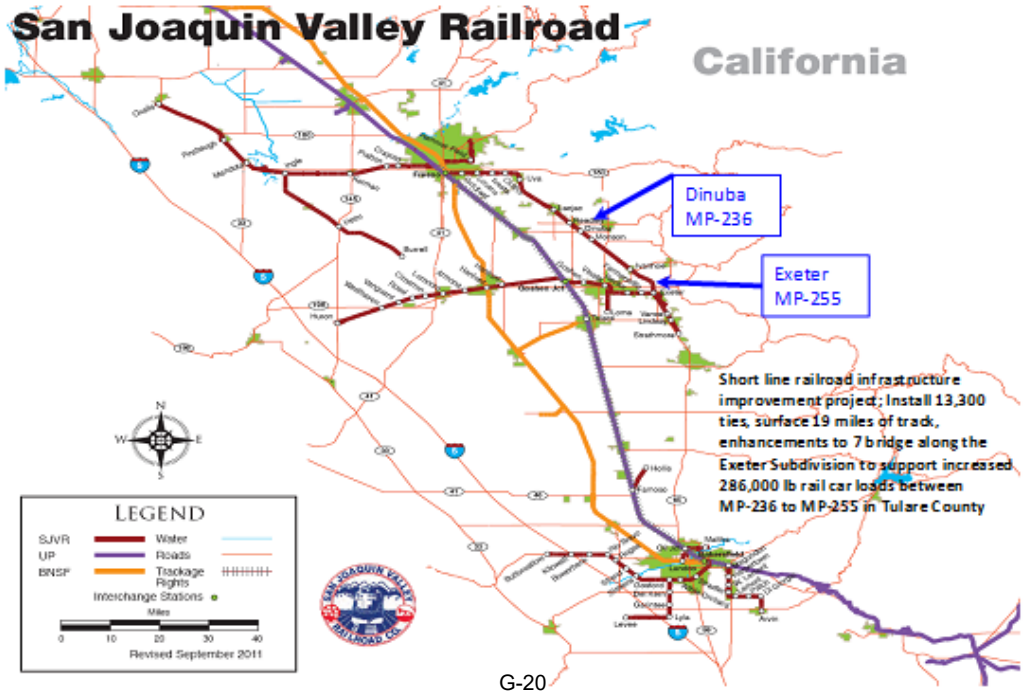
FIGURE G-9.1
2018 CALIFORNIA STATE RAIL PLAN: TOP 5 RAIL CARLOAD COMMODITIES (MILLIONS OF TONS)
2013 – 2040



In Tulare County it is projected for rail to continue to grow servicing Visalia's industrial park, packaging business in Exeter, soils in Ivanhoe, to trans-loading facilities in Dinuba. There is capacity (land and existing facilities available) for the development and improvements of railroad facilities in Tulare County. However, Tulare County Short Line rail lines are need of upgraded facilities and improvements for the system to accommodate future growth increases. TCAG is pursuing CMAQ funds to create a Public Private Partnership (PPP) between Tulare County and the San Joaquin Valley Railroad (SJVR).

The $1.5 million dollar project will upgrade the Railroad beds between Exeter to Ivory by replacing broken railroad ties, new ballast, and replace trusses to improve the Speed from 5 mph to 20 mph. Eventually TCAG would foresee the total improvement of the Short-Line rail from 75 lbs. rail to 115 lbs. rail which would increase rail speeds (20 mph to 70 mph) and capacity of the system. TCAG is currently working with the San Joaquin Valley Railroad (SJVR) to accomplish this long-term goal.

FIGURE G-10.1
SAN JOAQUIN VALLEY RAILROAD IMPROVEMENT PLANS

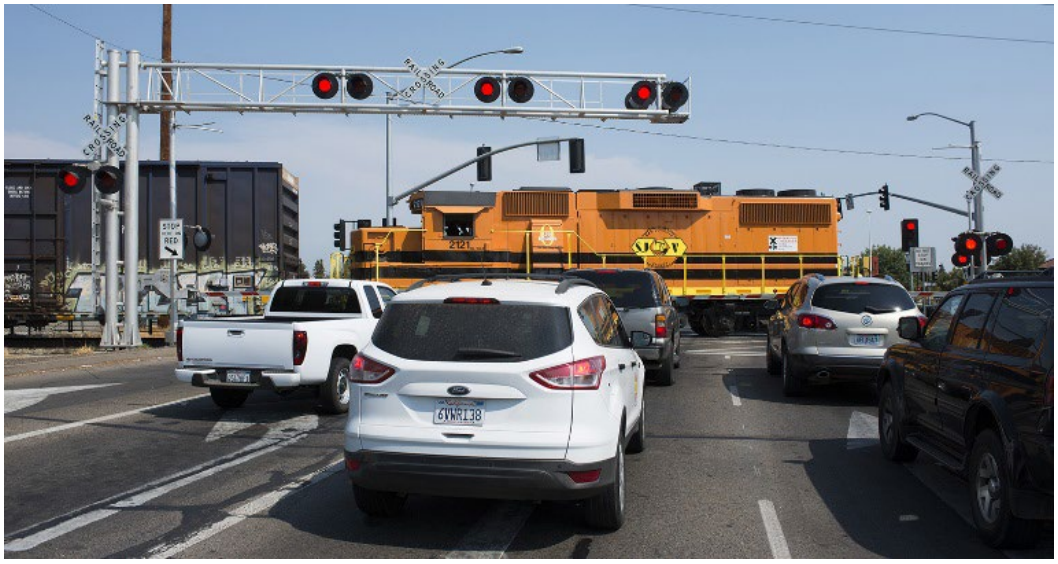


The **San Joaquin Valley Railroad (SJVR)** is one of several short line railroad companies and is part of the Pacific Region Division of Genesee & Wyoming Inc. (recently acquired as part of Rail America SJVR December 28, 2012). The SJVR is headquartered in Exeter, California and operates 347 miles of rail in the SJ Valley, with approximately 55 route miles of short line within Tulare County (SJVR March 2013). The trackage rights belong to /Genesee & Wyoming and the land is owned by Union Pacific (UP). Ivory to Exeter from MP 231.63 to MP 255, is a total 23.37 miles. Exeter to Strathmore is MP 255 to MP 268.6, for a total 13.6 miles (Strathmore to Jovista 30.57 miles was abandoned in 2010).

TCAG is monitoring and has concern that the remainder of this branch line is in jeopardy of abandonment filings by SJVR, which runs from Exeter to the Tulare County line and into Fresno. Tulare County, like many counties throughout California, has been faced with the issue of rail abandonment. Efforts to preserve rail and viable goods movement corridors along railways have been a focus of many agencies in Tulare County.

To encourage the future use of rail, areas along railways and near rail stations could be designating for industrial use to encourage businesses to expand and use rail to distribute their goods.

FIGURE G-11.1
SJV TRAIN CROSSES TRACKS IN TULARE COUNTY



TCAG and local agencies will continue to work on ways to make rail a more viable source of goods movement. Future goals include:

1. Identifying and preserving rail in areas critical to goods movement
2. Encouraging businesses to use rail to transport goods.
3. Identify potential industrial areas along railways which could provide businesses easier access to railways.
4. Improve and upgrade tracks when feasible.

AVIATION

Aviation is another method for goods movement. Currently, this mode of travel is fairly limited in Tulare County. There are seven public use airports in Tulare County. These include two lightly used privately operated airports (Eckert Field and Exeter Airport) and small publicly operated airports such as Woodlake Municipal, Sequoia Field, Mefford Field (Tulare Municipal), Porterville Municipal and Visalia Municipal. There are plans to upgrade and expand the publicly owned airports in the Capital Improvement Program (Table F-18.1 in the Financial Element) that may make goods movement by aviation more viable in Tulare County. In addition, the Tulare County Comprehensive Airport Land Use Plan (CALUP) is in the process of being updated.

NEXT STEPS

Goods movement is a vital part of Tulare County's economy and transportation system. Securing and improving the goods movement system is a key goal of TCAG. Future goods movement efforts will focus on reducing the impacts that goods movement has on traffic, roads, and air quality. As part of that effort, TCAG will further evaluate the benefits of improving goods movement along rail corridors. TCAG will continue to encourage local agencies to take actions to prevent the future abandonment of rail rights-of-way. TCAG also supports the use of rail as a measure to alleviate conditions resulting from truck transport.

By pursuing best suited solutions and collaborating with stakeholders, TCAG will continue working to develop a better future for the Tulare County goods movement system.