CAMBRIDGE SYSTEMATICS

Task 3

Rural Priority Corridors

Technical Memorandum

prepared for

San Joaquin Valley Council of Governments

prepared by

Cambridge Systematics, Inc.

February 2017

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date

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1.0 Introduction

Task 3 of the San Joaquin Valley Goods Movement Sustainable Implementation Plan is to identify Priority Rural Corridors. As initially conceived, this task was to identify and update information on California's priority network and key rural corridors as identified in the San Joaquin Valley Goods Movement Plan, and then establish criteria for designating priority corridors in the region. The passage of the FAST Act in December 2015 has altered this approach slightly. This Task and the routes identified are part of the overall system of roads important to the movement of goods as identified in Task 1 (Connectors) and Task 2 (Truck Routes).

One initial challenge in this Task was defining a priority rural corridor and differentiating them from connectors (Task 1) and truck routes (Task 2). For purposes of this report, *State and U.S. routes in rural areas* (defined as outside of U.S. Census designated Urbanized Areas) *form the backbone of the priority rural corridor system.* These routes are designed to move goods on a regional, state, and national level. Select county and local routes that provide vital redundancy and act as long distance corridors between freight attractors/generators on the state and Interstate network are also included. Rural corridors provide a complement to the connectors and truck routes identified in Tasks 1 and 2 of the study. Table 1.1 provides an overview of proposed rural corridors for the San Joaquin Valley Region. These corridors represent a subset of corridors based on initial feedback from stakeholders, Federal guidance, and connectivity to the region's freight network based on Tasks 1 and 2 findings.

Table 1.1 Proposed Central Valley Critical Rural Freight Corridors (CRFC)

Route	From	To	County	Potential CRFC?	Notes (FAST Act Criteria, AADT, Other)
SR 99	Entire Region		All	No-already on PHFN	G. ITSP/CFMP Corridor
SR 58	West edge of urbanized Bakersfield		SR 33 (Buttonwillow)	Kern	Yes (Section W of SR 99/Bakersfield)
SR 58 (new route Mohawk St-Westside Pkwy-Stockdale Hwy to I-5)	Westside Parkway (west edge of urbanized Bakersfield)	I-5 at Stockdale Hwy	Kern	Yes	Non-urban, non PHFN section, New parallel freeway partially constructed to be designated SR 58 and rescind current route (I-5 to Mohawk St) in 2018. B. access to energy production area, C, improved linkage between I-40 & Port of Oakland via I-5/580, G. ITSP/CFMP corridor
SR 4	Contra Costa County	Calaveras County	San Joaquin	Yes	Non-urban, non PHFN section
SR 14	L.A. County	US 395	Kern	Yes	Non-urban, non PHFN section, G. ITSP/CFMP Corridor
SR 33	I-5	SR 166	San Joaquin, Stanislaus, Merced, Fresno, Kings, Kern	Yes	A. Truck AADT, D. access to agriculture, B. energy, mining
SR 41	SR 99	San Luis Obispo border (SR 46)	Kings, Fresno, Kern	Yes	A. Truck AADT,[a] G. ITSP Corridor

Route	From	To	County	Potential CRFC?	Notes (FAST Act Criteria, AADT, Other)
SR 43	SR 99	I-5	Fresno, Kings, Tulare, Kern	Yes	A. Truck AADT, B. energy, D. access to agriculture, mining, F. Shafter container yard and major freight distribution cluster
SR 46	SR 99	San Luis Obispo border (U.S. 101)	Kern	Yes	A. Truck AADT, B. access to energy/mining and D. agriculture, G. ITSP/CFMP Corridor
SR 65	SR 99	SR 190	Tulare	Yes	D. Access to agriculture and B. energy
SR 119	SR 33	SR 99	Kern	Yes	B. Energy production
SR 120	I-5	SR 108	San Joaquin, Stanislaus	Yes	Non-urban, non PHFN section
SR 132	I-5	SR 99 or Toulumne border	San Joaquin, Stanislaus	Yes	A. Truck AADT, D. access to agriculture
SR 152	SR 99	Santa Clara border	Merced, Madera	Yes	A. Truck AADT, D. access to agriculture, G. ITSP corridor
SR 166	SR 99	San Louis Obispo Boarder (U.S. 101)	Kern	Yes	Alternate truck route for when the grapevine is shut down and connects to SR 33. D. agriculture access
SR 184	SR 223	SR 178	Kern	Yes	D. Access to agriculture
SR 198	SR 99	I-5	Tulare, Kings, Fresno	Yes	D. Access to agriculture
SR 223	I-5	SR 58	Kern	Yes	D. Access to agriculture
Houston/Caldwell Ave	SR 43	SR 198	Tulare, Kings	Yes	D. Access to agriculture
W Main St/E Las Palmas Ave/Sperry Ave	SR 99	I-5	Stanislaus	Yes	A. Truck AADT, F. Warehousing
W Nees Ave/Ave 7 1/2/Firebaugh Blvd/Ave 12	I-5	SR 99	Fresno, Madera	Yes	D. Access to agriculture
Santa Fe Ave/Dr	SR 132	SR 59	Stanislaus, Merced	Yes	D. Access to agriculture
7th Standard Rd	I-5	SR 65	Kern	Yes	B. Energy production area C. 50k+ TEUs per day, F. Shafter container yard and major freight distribution cluster
Tehachapi-Willow Springs Rd/Oak Creek Rd	SR 58	SR 14	Kern	Yes	B. Energy, D. Mining
Wheeler Ridge Rd	I-5/Tejon Industrial Drive	SR 184/223	Kern	Yes	D. Agriculture, F. Warehousing

[a] Southern section has higher AADT and majority of the mining, energy, and agricultural activity.

Many of the above rural corridors connect with urban corridors. Here is a listing of urban corridors Valley MPOs have identified in urbanized areas. Fresno and Kern have urbanized areas larger than 500k population and have lead in requesting FHWA to designate urban corridors in those areas. The state has the lead on designating urban corridors in urbanized areas between 50k and 500k population, in consultation with MPOs.

Table 1.2 Proposed Central Valley Critical Urban Freight Corridors (CUFC)

Route	From	To	County	Potential CUFC?	Notes (FAST Act Criteria, AADT, Other)
SR 99	Entire Region		All	No-already on PHFN	ITSP Corridor
SR 58 (Centennial Connector)	SR 99 at existing SR 58 freeway to freeway interchange	Westside Pkwy (west edge of urbanized Bakersfield)	Kern	Yes	I. route SR 58 on the PHFS provides an important highway option. K. important freight corridor as determined by the MPO. New parallel freeway under construction, scheduled to be complete in 2021 and to be designated SR 58. Mohawk St and Rosedale Hwy to SR 99 north to retain SR 58 route status.
SR 119	SR 99	I-5	Kern	Yes	J. serves major energy production area. K. important freight corridor determined by the MPO. STAA route
SR 184	SR 178	SR 223	Kern	Yes	J. serves energy and ag, K. important freight corridor determined by the MPO. STAA route
SR 204	SR 99	SR 58	Kern	Yes	I. portion of the route on the PHFS provides an important highway goods movement option. K. important freight corridor as determined by the MPO. STAA route
7th Standard Rd/Merle Haggard Dr	SR 65	Santa Fe Wy,	Kern	Yes	J. Serves a major freight generator (Shafter) K. important freight corridor as determined by the MPO.

The following sections describe Critical Urban and Rural Freight Corridor Criteria, and how FAST Act guidance can be applied to the San Joaquin Valley Region.

2.0 Critical Rural Freight Corridors

In order to identify the State and U.S. routes that are the most critical to moving goods in the region, as well as identify strategic county and local corridors that also enhance the regional movement of goods, routes were analyzed based on their ability to meet FAST Act requirements for Critical Rural Freight Corridors (CRFCs).

The FAST Act establishes criteria that a route must meet in order to be designated a Critical Urban Freight Corridor or Critical Rural Freight Corridor. Routes so designated will join routes on the Primary Highway Freight System (PHFS) and any remaining Interstate portions to become the National Highway Freight

Network (NHFN).[1] Projects on the NFHN, or that impact goods movement on these routes, are eligible to receive freight formula funding allocated to each state under the National Highway Freight Program (NHFP), and also qualifies the project to seek USDOT's Fostering Advancements in Shipping and Transportation for the Long-Term Achievement of National Efficiencies (FASTLANE) Grant program funding.[2]

Caltrans will ultimately be responsible for designating California's CUFC and CRFCs, but they will likely rely on regional input, and in the case of CUFC must consult with the MPOs. The discussion below pertains to the designation of CRFCs, as priority rural corridors are by definition found outside of Urbanized Areas. Due to the mileage cap, it is unlikely that many local routes will be chosen by the state as CRFCs, but the below discussion and identification of potential routes positions the region to advocate for such routes if they choose.

The FAST Act establishes criteria that a route must meet in order to be designated a Critical Rural Freight Corridor (CRFC). To qualify under this designation, the following conditions must be met. The route *cannot* be in an urbanized area AND must meet one or more of the following criteria:

CRFC Conditions for Proposing Corridors and Facilities[3]

A. Be a rural principal arterial roadway with trucks equaling 25% or more of AADT (FHWA vehicle class 8 to 13);

B. Provide access to energy exploration, development, installation, or production areas;

C. Connect the Primary Highway Freight System (PHFS) or the Interstate system to facilities that handle: 1) 50,000 or more 20-foot equivalent units (TEU) per year; 2) 500,000 tons bulk commodity per year; and 3) provide access to grain elevators, agricultural facility, mining facility, forestry facility or intermodal facility;

D. Provides access to a grain elevator, an agricultural facility, a mining facility, a forestry facility, or an intermodal facility

E. Connects to an international port of entry;

F. Provides access to significant air, rail, water or other freight facility; or

G. Is determined by the state to be vital to improving efficient movement of freight of importance to the state's economy

CUFC for Proposing Conditions and Facilities

Corridors and facilities in urbanized areas 50,000 to 500,000 are proposed by the State DOT in consultation with the MPOs. MPOs with urbanized areas larger than 500,000 population can propose corridors and facilities to FHWA for urbanized areas directly, in consultation with the State DOT. Fresno and Bakersfield

[1] http://ops.fhwa.dot.gov/freight/infrastructure/nfn/index.htm.

[2] This is the same as the Nationally Significant Freight and Highway Projects (NSFHP) Program identified in the FAST Act legislation.

[3] See FHWA FAST Act CRFC/CUFC guidance: http://ops.fhwa.dot.gov/fastact/crfc/sec_1116_gdnce.htm.

are the only two urbanized areas in the San Joaquin Valley greater than 500,000. Routes that are in urbanized areas must meet the following criteria:

H. Connects an intermodal facility to PHFS, the Interstate System, or an intermodal freight facility

I. Located within a corridor or route on the PHFS and provides an alternative highway option important to goods movement

J. Serves a major freight generator, logistic center, or manufacturing and warehouse industrial land

K. Corridor that is important to the movement of freight within the region as determined by the MPO or state.

A discussion of each of these criteria and maps showing where such criteria may exist are shown in the sections below. California may designated up to 623.54 miles of roads as CRFCs and 311.77 miles of CUFC.[4]

2.1.1 FHWA Non-Urbanized Areas

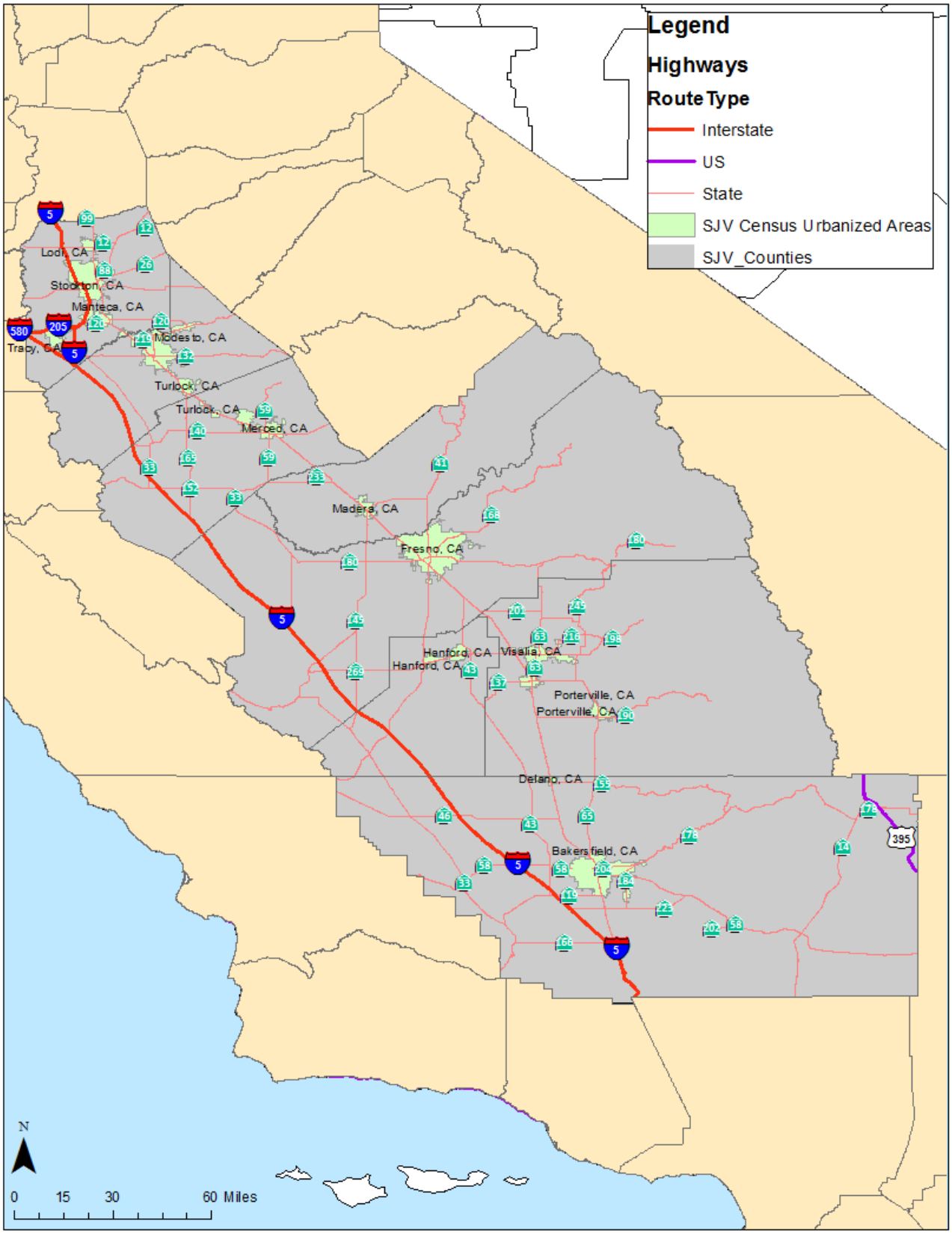
FHWA uses the U.S. Census definition of an Urbanized Area as the basis for differentiating between Critical Urban Freight Corridors and Critical Rural Freight Corridors. Urbanized Areas consist of 50,000 or more people in an urban area, which is defined as a settled core of census tracts and/or census blocks that meet minimum population density requirements and adjacent territory containing non-residential urban land uses as well as territory with low population density included to link outlying densely settled territory to the core.[5] Routes within these areas can qualify as Critical Urban Freight Corridors, routes outside these areas can qualify as Critical Rural Freight Corridors. Urbanized Areas in the San Joaquin Valley include: Bakersfield, Delano, Fresno, Hanford, Lodi, Madera, Manteca, Merced, Modesto, Porterville, Stockton, Tracy, Turlock, and Visalia

These areas are shown in Figure 2.1 below.

[4] http://ops.fhwa.dot.gov/freight/infrastructure/nfn/maps/nhfn_mileage_states.htm.

[5] https://www.census.gov/geo/reference/ua/urban-rural-2010.html.

Figure 2.1 Central Valley California Census Designated Urbanized Areas



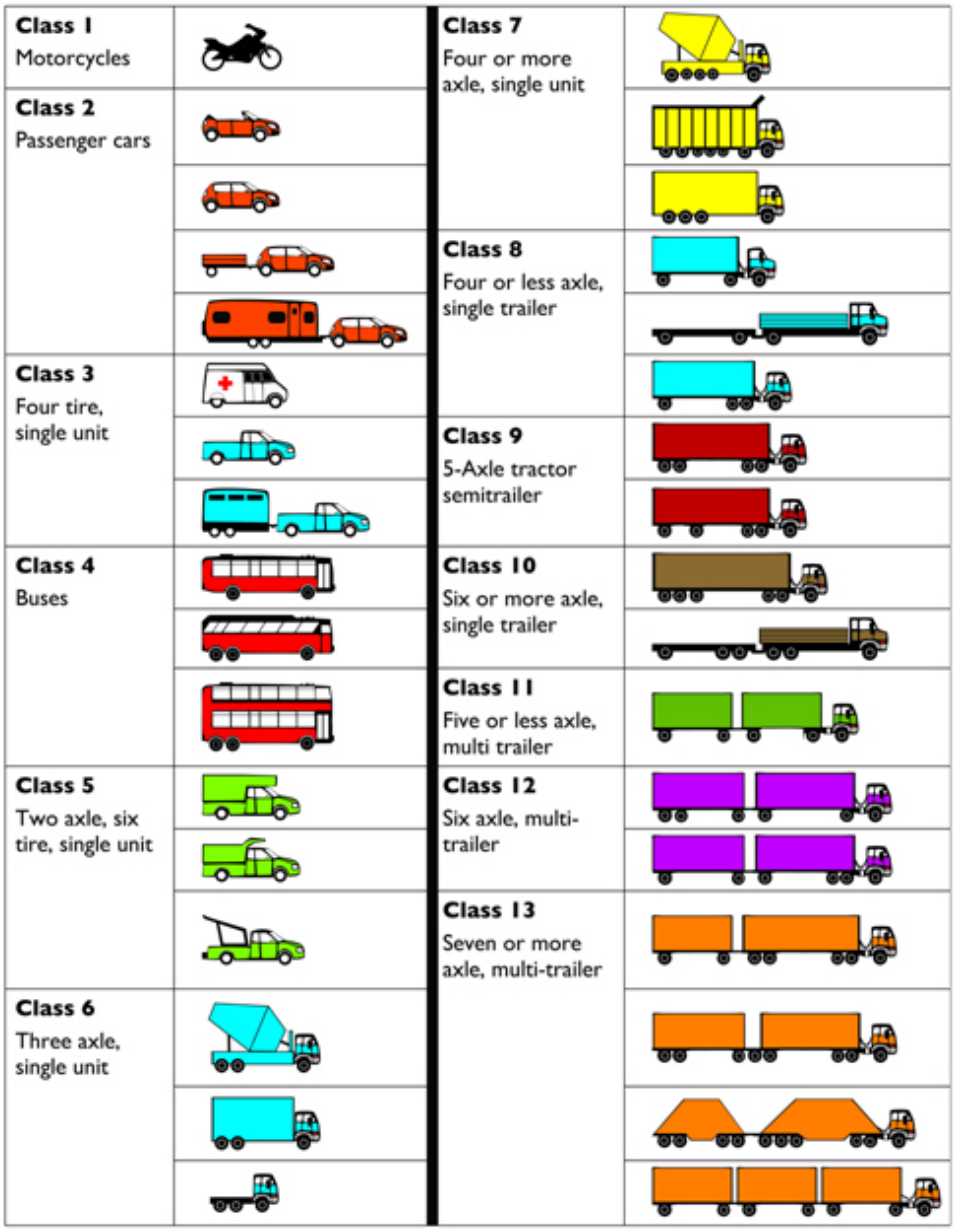
Source: U.S. Census, FHWA.

2.1.2 Rural Principal Arterials with Commercial Annual Average Daily Traffic 25%+

In order to qualify under this criteria, two conditions must be met. First, the route must be a Principal Arterial as defined by FHWA under the Functional classification system. FHWA describes these as "roadways with high traffic volumes are frequently the route of choice for intercity buses and trucks."[6]

The second condition is that 25% of the annual average daily traffic must be trucks in FHWA vehicle Class 8 to 13. Examples of these vehicles are shown in Figure 2.2 below.

Figure 2.2 FHWA Vehicle Classes



Source: http://www.fhwa.dot.gov/policyinformation/tmguide/tmg_2013/vehicle-types.cfm.

[6] https://www.fhwa.dot.gov/planning/processes/statewide/related/highway_functional_classifications/fcauab.pdf

Caltrans records AADT at various locations on state, U.S., and Interstate routes in California. These sites also measure truck traffic and can provide a truck percent of AADT. Although the data is only available at specific points instead of corridor segments, the data does reveal locations where truck traffic is higher than 25 percent of annual average daily traffic.

Table 2.1 provides a description of the locations identified above as well as the actual AADT, Truck AADT and truck percent. Locations on I-5, SR 58, and SR 99 are not included in Table 2.1 as these routes are already part of the National Highway Freight Network (NHFN). Traffic count locations in *italics* are those that are also located on a Principal Arterial. There are 12 locations in the region on principal arterials where trucks account for 25 percent or more of average annual daily traffic.

Table 2.1 Central Valley Locations with Truck Traffic Greater than 25% AADT, 2014

Route	District	County	Postmile	Leg[a]	Description	Vehicle AADT	Truck AADT	Truck % of Total AADT
033	06	FRE	R39.853	A	North Jct. Rte. 5	1,850	625	33.78
198	06	FRE	34.66	A	Jct. Rte. 269	3,500	1,106	31.60
033	06	KER	34.285	A	Jct. Rte. 58 East	1,850	581	31.43
046	06	KER	57.785	B	Famoso, Jct. Rte. 99	7,200	2,192	30.44
033	10	MER	R13.238	A	West Jct. Rte 152	8,700	2,646	30.40
058	06	KER	23.748	B	Lokern Rd (West of Urbanized Bakersfield to Rte. 33)	5,700	1,709	30.00
046	06	KER	50.904	B	Wasco, Jct. Rte. 43 South	8,900	2,670	30.00
046	06	KER	51.215	A	Wasco, Jct. Rte. 43 North	9,700	2,910	30.00
223	06	KER	1.85	A	Jct. Rte. 5	1,400	414	29.57
166	06	KER	0.01	A	Maricopa, Jct. Rte. 33	2,850	838	29.40
166	06	KER	2.96	A	Pentland Rd	2,600	764	29.38
046	06	KER	32.533	A	Jct. Rte. 5	6,100	1,779	29.17
223	06	KER	R10.536	B	Jct. Rte. 99	3,850	1,117	29.00
033	10	MER	R16.643	B	Jct. Rte. 5	12,900	3,664	28.40
166	06	KER	22.797	B	Jct. Rte. 5	2,500	697	27.88
223	06	KER	31.92	B	Jct. Rte. 58	1,250	340	27.20
395	06	KER	R29.64	B	Jct. Rte. 14 South	2,750	707	25.71
046	06	KER	32.533	B	Jct. Rte. 5	10,200	2,609	25.58
043	06	KER	8.112	A	Jct. Rte. 58 East	5,600	1,424	25.45
046	06	KER	20.543	A	Blackwells Corner, Jct. Rte. 33	6,800	1,728	25.41
065	06	KER	23.186	B	Jct. Rte. 155	6,500	1,640	25.25
033	06	KER	17.889	A	Taft, Jct. Rte. 119 East	2,550	639	25.08
223	06	KER	R16.014	A	Jct. Rte. 184 North	7,050	1,764	25.00

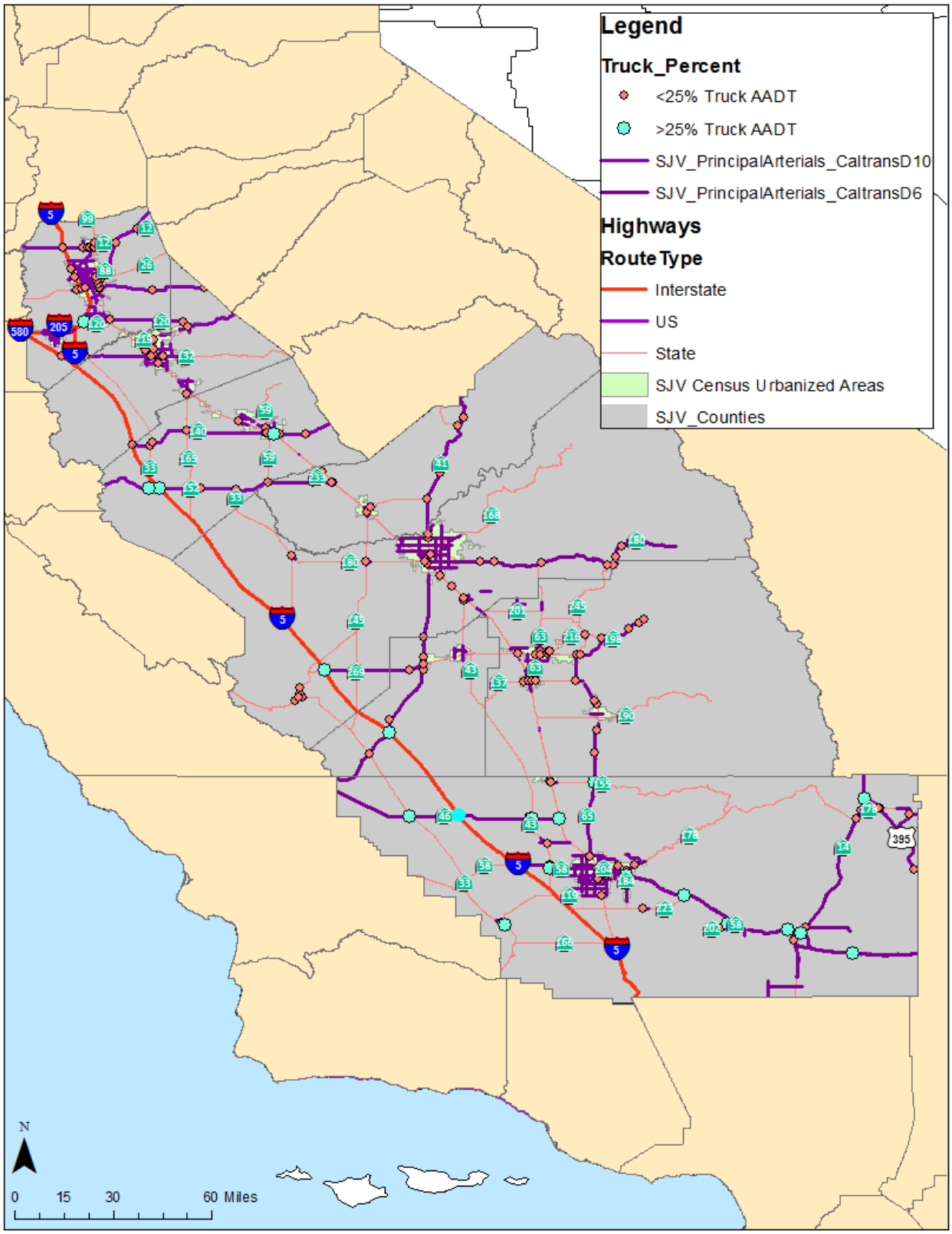
Source: Caltrans.

Note: Each highway intersection or interchange has two legs. According to ascending post miles (route direction) and a post mile reference at the center of the intersection or interchange, A= ahead leg, B= back leg.

[a] Two locations are within Urbanized Areas.

All locations in the region with more than 25% Truck AADT are shown in Figure 2.3 below along with the Principal Arterials.

Figure 2.3 Central Valley Principal Arterials and Intersections/Interchanges with 25%+ Truck AADT, 2014



Source: http://www.dot.ca.gov/hq/tsip/gis/datalibrary/Metadata/TruckAADT.html.

In addition, Table 2.2 below shows all locations in the Central Valley (other than on the Interstate System or on SR 99) where truck AADT is 2,000 or more. The top 20 locations are all on SR 58, SR 120, SR 4, SR 198, or SR 41.

Table 2.2 Central Valley State Routes with 2,000 or more Truck AADT

Route	District	County	Postmile	Leg*	Description	Vehicle AADT	Truck AADT	Truck % of Total AADT
058	06	KER	R55.404	A	Cottonwood Rd	76,000	19,000	25.00
058	06	KER	R52.36	A	Bakersfield, South Jct. Rte. 99	79,000	17,379	22.00
120	10	SJ	R0.493	A	Mossdale, Jct. Rte. 5	79,000	14,536	18.40
004	10	SJ	R19.44	B	South Jct. Rte. 99	92,000	11,775	12.80
058	06	KER	51.807	B	Bakersfield, Real Rd	49,500	10,891	22.00
004	10	SJ	R16.059	A	Stockton, North Jct Rte 5	79,000	7,584	9.60
004	10	SJ	R17.052	B	Stanislaus Rd	79,000	7,584	9.60
058	06	KER	R59.44	A	Jct. Rte. 184	27,500	7,321	26.62
058	06	KER	R107.465	B	Randsburg Cut-Off Rd	20,100	6,779	33.72
198	06	TUL	R8.753	B	Visalia, Jct. Rte. 63 South	60,000	6,600	11.00
058	06	KER	75.63	B	Jct Rte 223	20,100	6,569	32.68
058	06	KER	R90.717	A	Jct. Rte. 202 Southwest	20,700	6,495	31.38
058	06	KER	75.63	A	Jct Rte 223	19,700	6,305	32.00
058	06	KER	R127.636	A	California City Blvd	17,000	6,291	37.00
058	06	KER	R94.19	A	Summit Overhead	20,900	6,268	30.00
058	06	KER	R90.717	B	Jct. Rte. 202 Southwest	19,700	6,181	31.38
041	06	FRE	R24.527	A	Fresno, Jct. Rte. 180S	141,000	5,640	4.00
041	06	FRE	R25.266	A	Fresno, McKinley Ave	140,000	5,600	4.00
198	06	TUL	R8.753	A	Visalia, Jct. Rte. 63 South	61,000	5,490	9.00
041	06	FRE	R30.447	B	Fresno, Herndon Ave	105,000	5,250	5.00
204	06	KER	R0	A	Bakersfield, Jct. Rte. 58	43,000	5,160	12.00
058	06	KER	M111.13	B	Jct Rte 14	14,050	4,918	35.00
198	06	TUL	R4.796	A	Alta Ave; County Rd 80	51,000	4,692	9.20
178	06	KER	0	A	Jct. Rtes. 99/58	52,000	4,681	9.00
152	10	MER	13.848	A	Jct. Rte. 5	27,000	4,589	17.00
198	06	TUL	R9.967	A	Visalia, Jct. Rte. 63 North	50,000	4,500	9.00
190	06	TUL	R15.241	A	Porterville, Jct. Rte. 65	23,700	4,267	18.00

Route	District	County	Postmile	Leg*	Description	Vehicle AADT	Truck AADT	Truck % of Total AADT
120	10	SJ	T6.87	B	South Jct. Rte. 99	67,000	4,019	6.00
152	06	MAD	15.634	B	Califa, Jct. Rte. 99	15,900	3,816	24.00
120	10	STA	3.16	A	Valley Home Rd	24,300	3,810	15.68
041	06	FRE	R30.447	A	Fresno, Herndon Ave	75,000	3,751	5.00
041	06	FRE	R23.736	B	Fresno, Divisadero Rd	93,000	3,720	4.00
041	06	KIN	R39.962	B	Jct RTE 198	12,000	2,219	18.49
041	06	KIN	R39.962	A	Jct RTE 198	16,100	2,977	18.49
041	06	KIN	R42.148	A	Belli Corner, Hanford-Armona Rd	18,000	3,328	18.49
041	06	KIN	R48.283	B	Excelsior Ave: Kings/Fresno County Line	17,000	2,719	16.00
043	06	KIN	18.429	B	Lacey Blvd	11,500	2,070	18.00
152	06	MAD	10.799	B	Jct. Rte. 233 northwest	15,500	3,720	24.00
198	06	TUL	R11.719	B	Lovers Lane	41,000	3,690	9.00
033	10	MER	R16.643	B	Jct. Rte. 5	12,900	3,664	28.40
204	06	KER	3.087	B	Bakersfield, California Ave	32,500	3,575	11.00
152	06	MAD	R0	A	Merced/Madera County Line	16,100	3,381	21.00
198	06	TUL	R3.835	A	Jct. Rte. 99	49,250	3,380	6.86
033	10	MER	16.643	A	Jct. Rte. 5	14,200	3,280	23.10
178	06	KER	R2.009	A	Bakersfield, Jct. Rte. 204	54,000	3,239	6.00
065	06	KER	R0	A	Jct. Rte. 99	15,700	3,139	20.00
004	10	SJ	15.912	B	Stockton, South Jct. Rte. 5	18,900	3,119	16.50
198	06	TUL	R11.719	A	Lovers Lane	31,000	3,060	9.87
152	10	MER	21.272	A	Los Banos, Jct. Rte. 165	33,500	3,021	9.02
152	06	MAD	10.799	A	Jct. Rte. 233 Northwest	12,400	2,976	24.00
152	10	MER	R32.366	B	Dos Palos Wye, East Jct. Rte. 33	18,800	2,934	15.60
204	06	KER	3.087	A	Bakersfield, California Ave	32,500	2,925	9.00
046	06	KER	51.215	A	Wasco, Jct. Rte. 43 North	9,700	2,910	30.00
198	06	TUL	R14.653	B	County Rd 164	25,500	2,839	11.13
014	06	KER	L17.384	B	Jct. Rte. 58	15,700	2,827	18.00
152	10	MER	21.272	B	Los Banos, Jct. Rte. 165	28,000	2,790	9.96
198	06	TUL	R18.761	A	Jct. Rte. 65 South	15,000	2,700	18.00
198	06	KIN	R15.745	B	Hanford/Armona Rd	34,000	2,865	8.43

Route	District	County	Postmile	Leg*	Description	Vehicle AADT	Truck AADT	Truck % of Total AADT
198	06	KIN	R15.745	A	Hanford/Armona Rd	32,000	2,997	9.37
198	06	KIN	R17.912	B	Hanford/11TH Ave	29,500	2,655	9.00
198	06	KIN	R17.912	A	Hanford/11TH Ave	23,700	3,318	14.00
198	06	KIN	R20.975	B	Jct. RTE 43	22,500	3,375	15.00
198	06	KIN	R20.975	A	Jct. RTE 43	25,000	2,446	9.78
046	06	KER	50.904	B	Wasco, Jct. Rte. 43 South	8,900	2,670	30.00
033	10	MER	R13.238	A	West Jct. Rte 152	8,700	2,646	30.40
137	06	TUL	17.511	A	Tulare, Jct. Rte. 63 North	12,500	2,625	21.00
046	06	KER	32.533	B	Jct. Rte. 5	10,200	2,609	25.58
132	10	SJ	3.24	A	Jct. Rte. 5	14,100	2,594	18.40
198	06	TUL	R14.653	A	County Rd 164	20,300	2,530	12.46
152	10	MER	23.915	B	Los Banos, Santa Fe Rd	18,700	2,524	13.50
178	06	KER	R5.641	B	Bakersfield, Oswell Rd	40,500	2,430	6.00
178	06	KER	R5.641	A	Bakersfield, Oswell Rd	30,000	2,400	8.00
204	06	KER	4.235	A	Bakersfield, Jct. Rte. 178	26,500	2,385	9.00
132	10	SJ	0	A	Jct. Rte. 580	13,200	2,377	18.00
132	10	SJ	3.24	B	Jct. Rte. 5	13,000	2,341	18.00
120	10	STA	5.116	B	Oakdale, West Jct. Rte. 108	18,000	2,340	13.00
012	10	SJ	10.167	A	Jct. Rte. 5	15,000	2,295	15.30
063	06	TUL	7.98	A	Visalia, East Jct. Rte. 198	25,500	2,295	9.00
012	10	SJ	10.167	B	Jct. Rte. 5	16,400	2,280	13.90
041	06	FRE	R0	A	Excelsior Ave; Kings/Fresno County Line	14,100	2,256	16.00
012	10	SJ	16.931	A	Lodi, South Hutchins Rd	23,900	2,248	9.40
026	10	SJ	1.11	A	Jct. Rte. 99	20,000	2,220	11.10
046	06	KER	57.785	B	Famoso, Jct. Rte. 99	7,200	2,192	30.44
065	06	TUL	18.163	A	Jct. Rte. 190	26,000	2,158	8.30
152	10	MER	R32.366	A	Dos Palos Wye, East Jct. Rte. 33	16,400	2,132	13.00
012	10	SJ	16.44	B	South Ham Lane	23,600	2,124	9.00
012	10	SJ	0	O	Sacramento/ San Joaquin County Line	15,000	2,115	14.10
012	10	SJ	17.95	B	Lodi, Cherokee Lane	21,500	2,107	9.80
012	10	SJ	15.155	A	Lower Sacramento Rd	23,500	2,092	8.90
120	10	SJ	6.197	A	Manteca, North Jct.	14,100	2,073	14.70

Route	District	County	Postmile	Leg*	Description	Vehicle AADT	Truck AADT	Truck % of Total AADT
					Rte. 99			
198	06	TUL	R3.835	B	Jct. Rte. 99	44,000	2,013	4.58

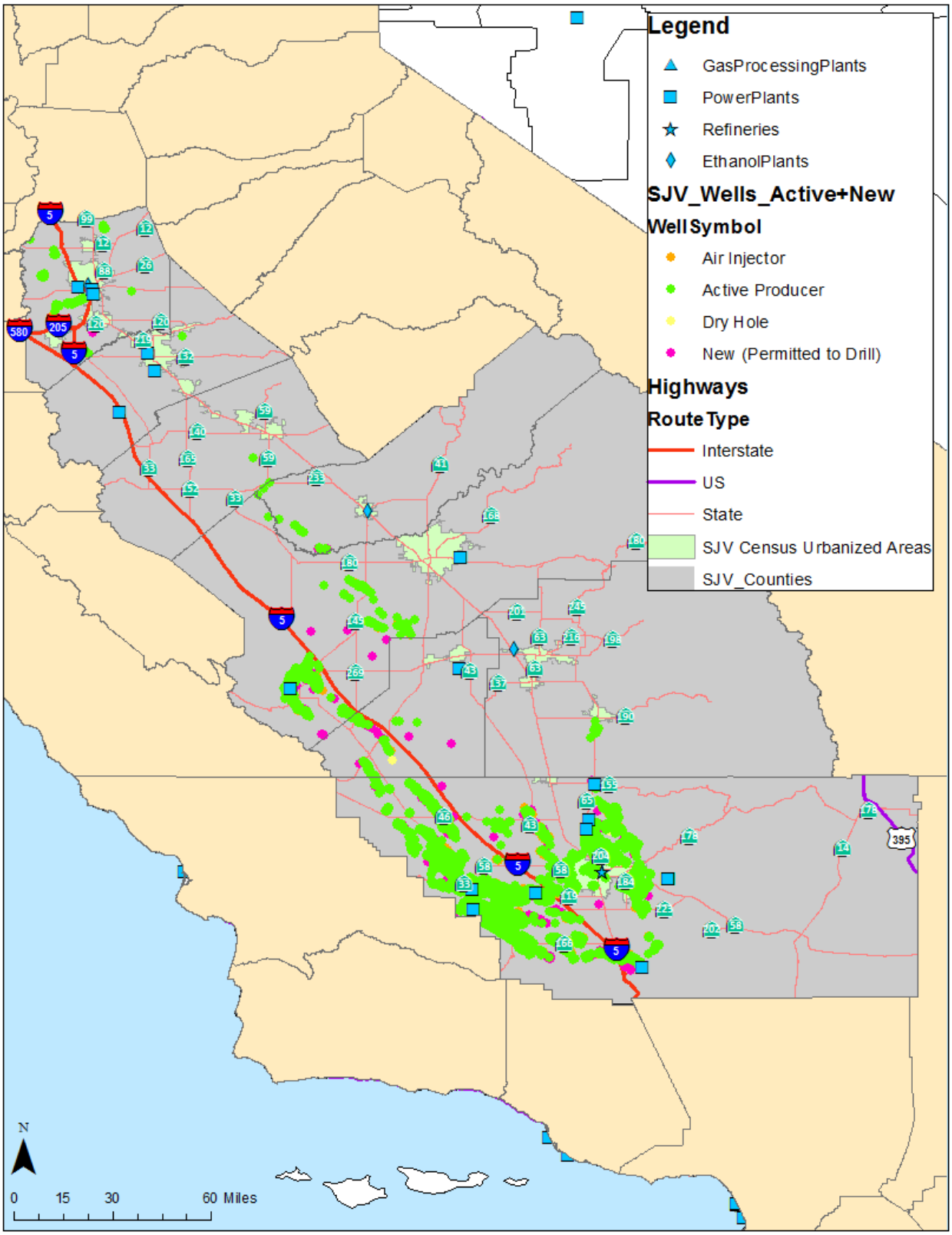
Source: Caltrans.

2.1.3 Provide Access to Energy Exploration, Development, Installation, or Production Areas

The second qualifying criteria for a Critical Rural Freight Corridor under the FAST Act is that the route provides access to energy exploration, development, installation, or production areas. The map distinguishing between refineries and power plants which would be the processing centers and well heads which are where the oil and natural gas are drawn from. Figure 2.4 below shows the locations of facilities meeting this description in the Central Valley. Although FHWA has not provided guidance on how to interpret “provides access,” it is likely that routes that connect these locations to the PFHS or Interstates will be accepted.

Figure 2.4 Central Valley California Energy Exploration, Development, Installation, and Production Sites[7]

[7] A complete list is available at: http://energyalmanac.ca.gov/electricity/



Source: UC Berkley GIS, California Department of Conservation Division of Oil, Gas and Geothermal Resources.

2.1.4 Connect the Primary Highway Freight System or Interstate to:

The Primary Highway Freight System (PHFS) is one of the components of the National Highway Freight Network. This system was identified under MAP-21 and includes the following routes in the Central Valley:

- I-5;
- I-205 from I-580 to I-5;
- SR 99 from I-5 to I-305;
- SR 58 from 5.7 miles west of SR 99 to I-15;
- SR 120 from I-5 to SR 99;
- SR 14 from I-5 to 23.45 miles northeast of I-5; and
- SR 4 from I-5 to SR 99.

There are also a number of routes identified as PHFS Intermodal Connectors in the region. However, the majority of these are within Urbanized Areas and thus routes that connect to them are not eligible for designation as a Critical Rural Freight Corridor. One exception is part of Roth Road and Airport Way in Lathrop and French Camp. However, this route acts as a connector, and is included as such in Task 1. The remaining Interstate system includes all other Interstates within the region. To obtain NHFP funding through this criteria, the suggested route must connect from the PHFS or Interstate to a facility that: 1) handles 50,000 TEU per year, 2) handles 500,000 tons of bulk commodity a year, or 3) is a grain elevator, agricultural facility, mining facility, forestry facility, or intermodal facility.

50,000 TEU

Twenty-foot Equivalent Units (TEU) are a common way to measure the flow of goods in a supply chain. Typical international shipping containers are either 20 feet long or 40 feet long. A 20 foot unit is 1 TEU, a 40-foot unit is 2 TEU. The study team does not currently have access to TEU volumes in the valley region.

Handles 500,000 Tons Bulk Commodity

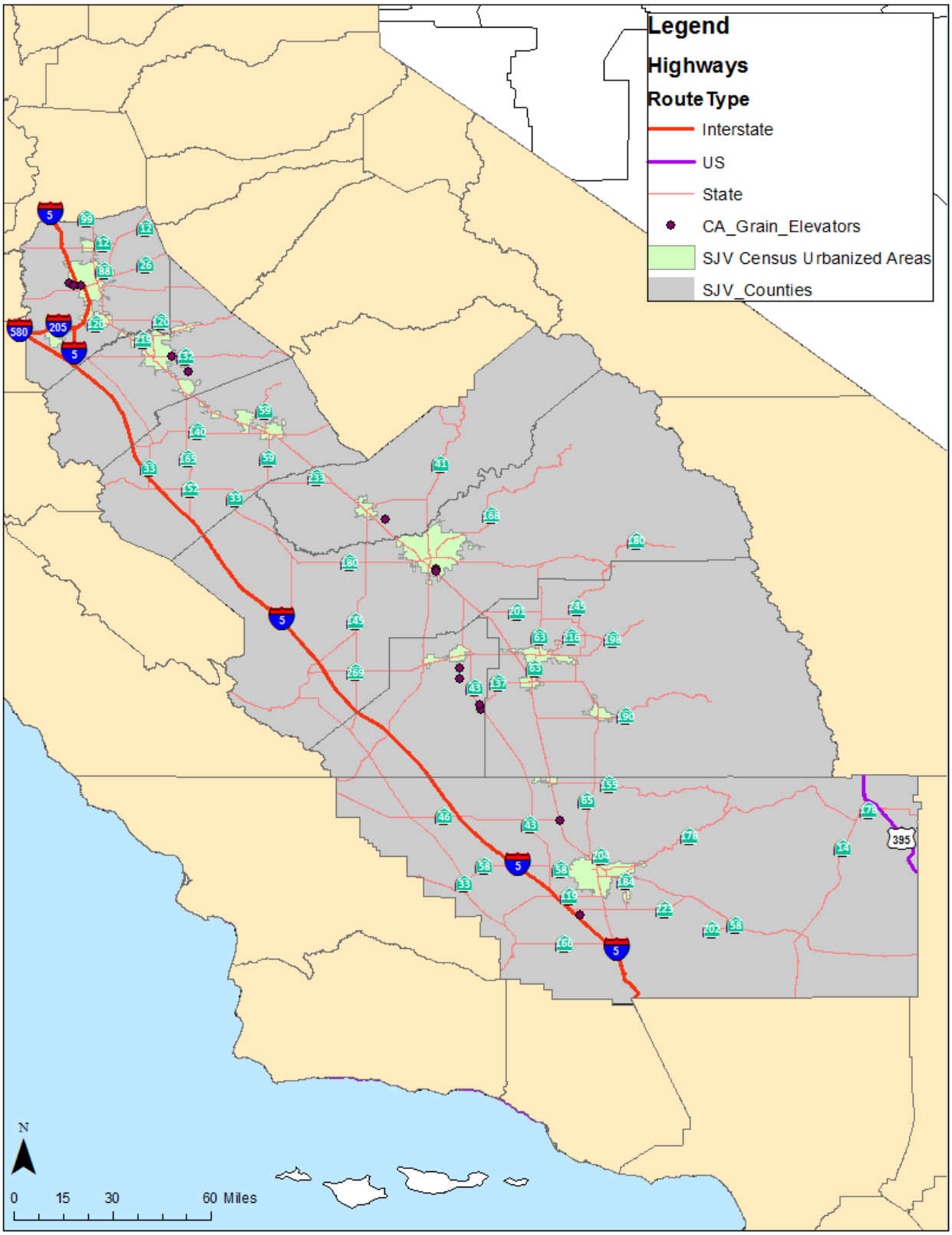
Routes that connect the PHFS or Interstate to a facility handling 500,000 tons or more of bulk commodities a year are also eligible. The study team does not currently have access to comprehensive bulk product volume data in the valley region.

2.1.5 Provide Access to Grain Elevators, Agricultural, Mining, Forestry, or Intermodal Facility

Grain Elevators

Grain elevators are locations where grain is transferred from ground level to a storage area higher up in the facility. This facility also typically serves as a transfer point between two modes of transportation – rail and truck. Figure 2.5 shows the location of the 14 grain elevators active in the Central Valley region. Eight of them are operated by BNSF, three by the Central California Traction Company (Port of Stockton), two by the San Joaquin Valley Railroad, and one by the Modesto and Empire Traction Company.

Figure 2.5 Grain Elevators in Central Valley California



Source: BNSF.

Finally, routes that connect the PHFS or Interstates to one of the identified facility types are eligible for designation as a Critical Rural Freight Corridor.

Agricultural and Processing Facilities

The Central Valley is one of the richest agricultural areas in the world. Thousands of farms, orchards, and other agricultural facilities are spread throughout the eight counties in the study area, with accompanying processing and packaging facilities. Routes that connect these sites to the PHFS or Interstates are eligible for designation as a CRFC. Figure 2.6 below shows the locations of facilities that are included in the Environmental Protection Agency's Facility Registry Service (FRS). This service is a centrally managed database that identifies sites subject to environmental regulations or of environmental interest.[8]

The majority of farming locations are located between I-5 and SR 99 or immediately east of the SR 99 corridor. There are three distinct clusters in the Central Valley—one south of Stockton to Modesto, one near Hanford and Visalia, and a smaller cluster south of Bakersfield. In total, slightly more than 3,600 facilities are included in this definition.

Mining Facilities

Figure 2.7 below shows the location of mining facilities or companies in the Central Valley based on the EPA FRS database. The largest cluster of sites is located around Bakersfield with another significant grouping along I-5 through Kern County.

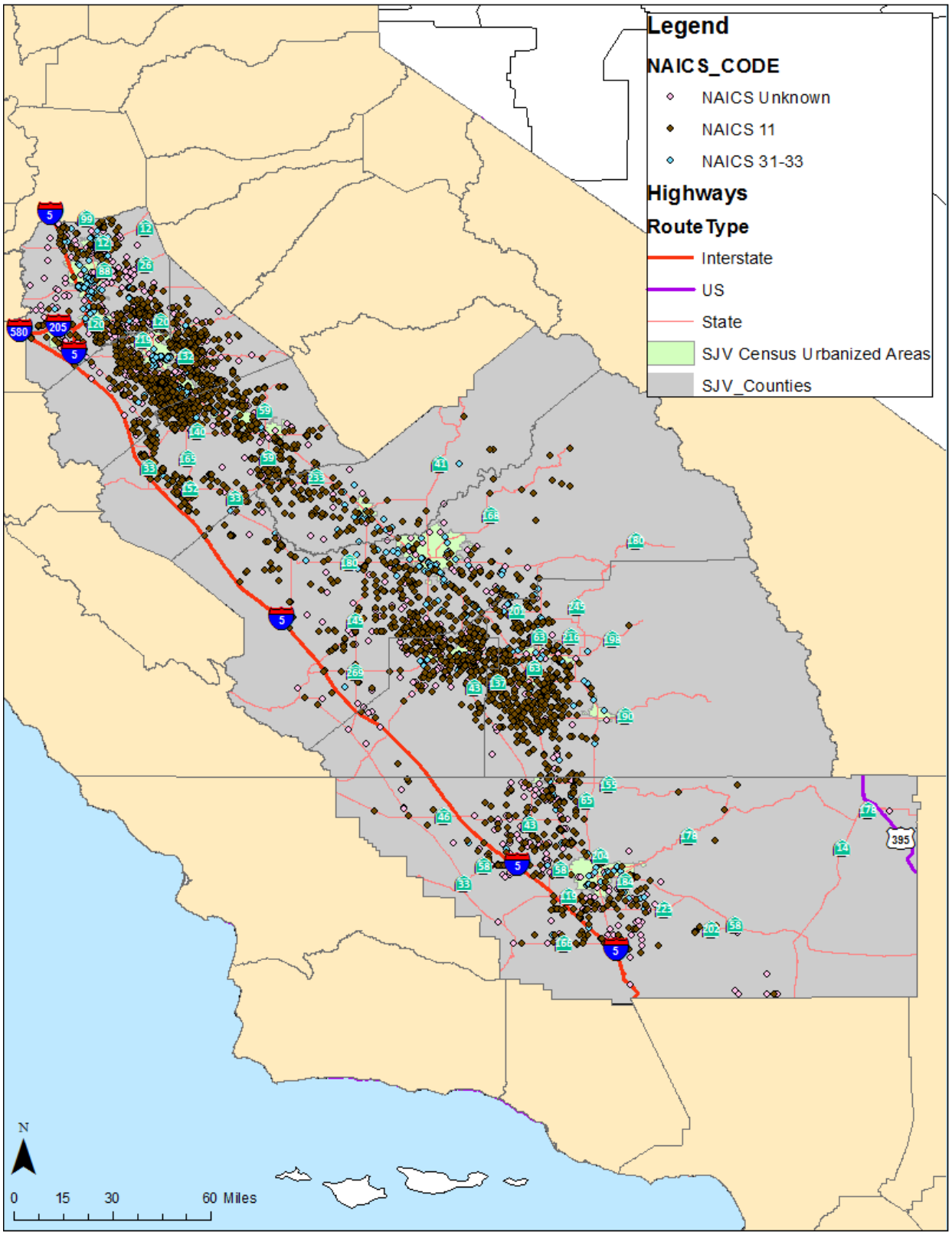
Forestry Facilities

Logging operations occur in Kern, Fresno, Tulare, and Madera counties. These sites are identified through Timber Harvesting Plans for industrial-scale operations and Non-Industrial Timber Management Plans for landowners with less than 2,500 acres and no plans for sustained logging. These plans must be filed with California Department of Forestry and Fire Protection (CAL FIRE).[9] Sites in the Central Valley are identified in Figure 2.8. These locations are all in non-urbanized areas with clusters near SR 168 in the Sierra National Forest and north of SR 90 in eastern Tulare County, and a cluster south of SR 202 near Tehachapi Mountain Park in southern Kern County.

[8] The FRS contains many industries outside of agriculture. To develop this list, a query was run to select locations with associated NAICS or SIC codes in the agriculture or food manufacturing categories. Additional screening was conducted using company names and business information found through internet searches and Google Earth.

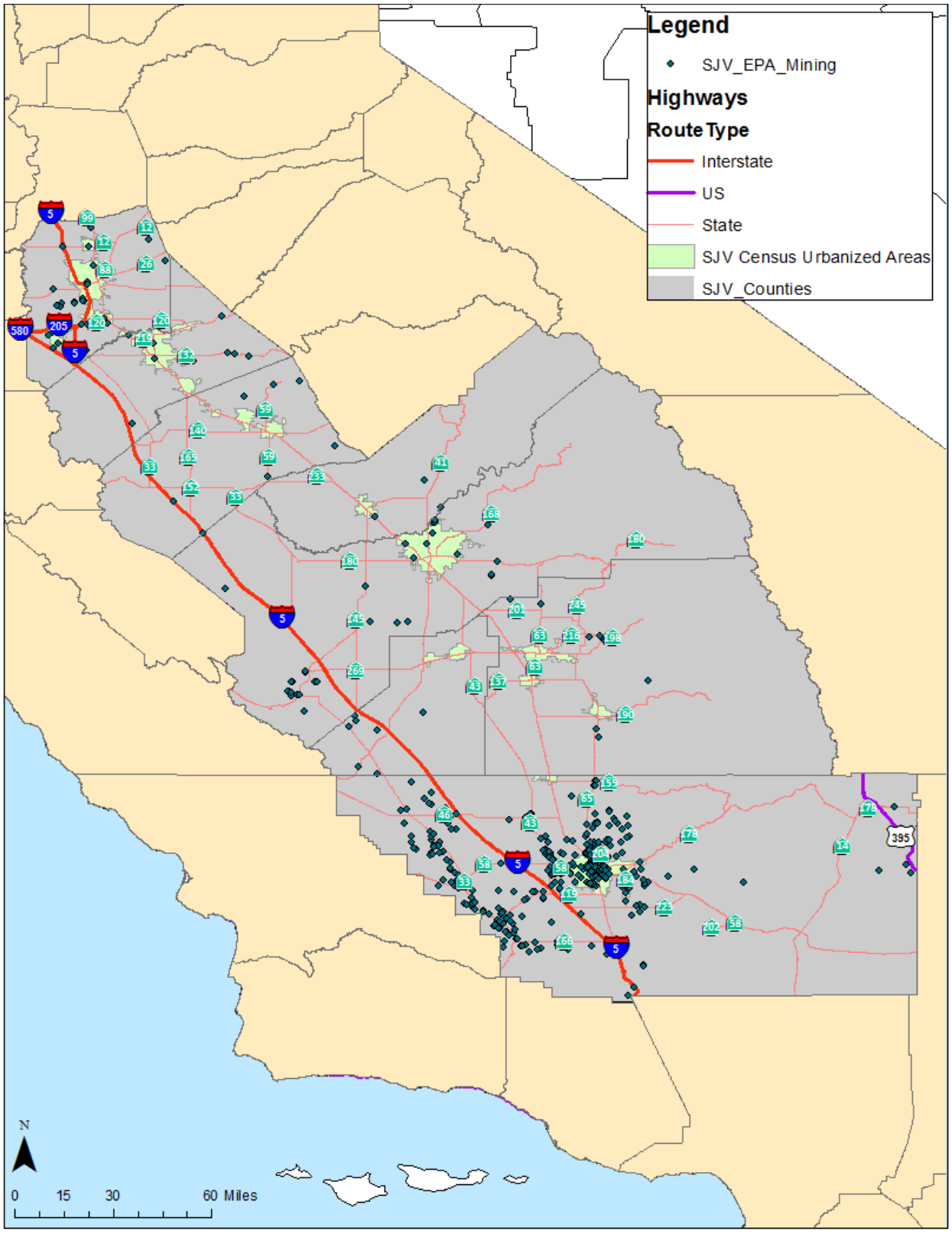
[9] http://calfire.ca.gov/resource_mgt/resource_mgt_forestpractice

Figure 2.6 Central Valley California EPA Monitored Agriculture and Agriculture Processing Sites



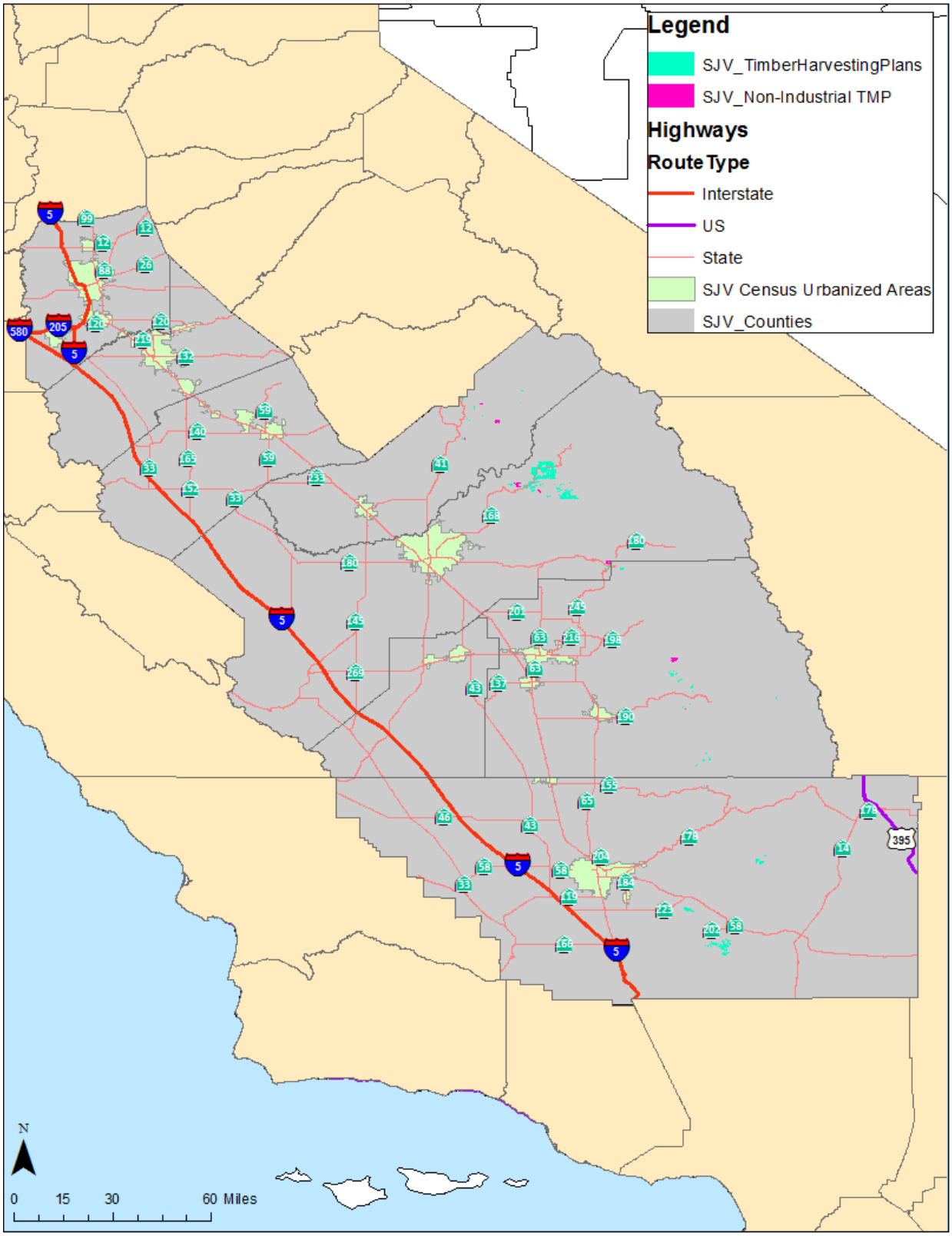
Source: EPA, Cambridge Systematics

Figure 2.7 Central Valley California EPA Facilities-Mining



Source: EPA FRS.

Figure 2.8 Central Valley California Logging Operations



Source: CAL FIRE.

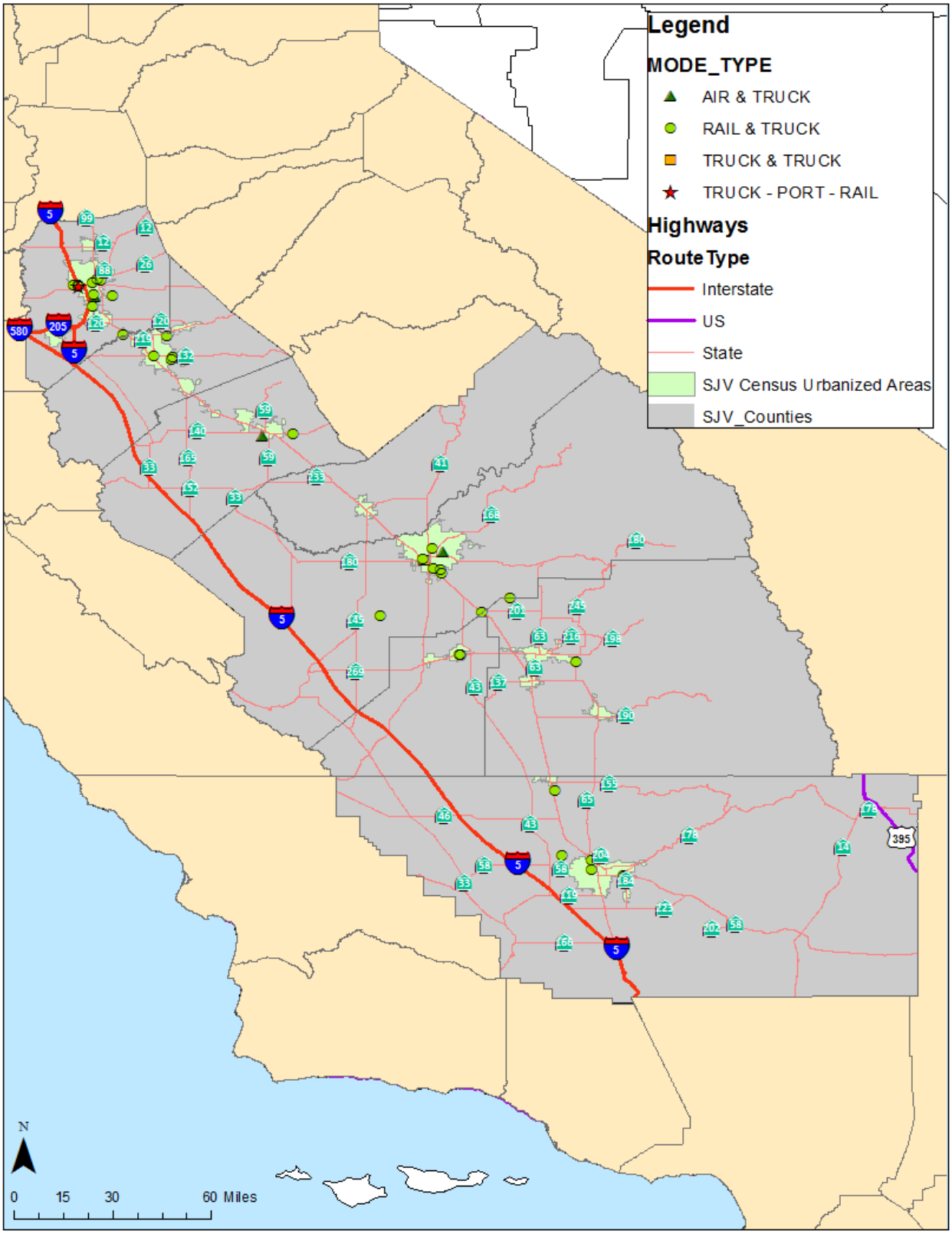
Intermodal Facilities

This study identified 38 intermodal facilities that transfer goods from one mode of transportation to another. Most of these locations transfer goods between rail and truck. The majority of these are located in Urbanized Areas, though there may be roads that link non-Urbanized Areas to these sites. Eight locations are outside of Urbanized Areas including:

- Foster Feed Mill in Burrell;
- Nutrius Inc. in Kingsburg;
- Bakersfield Quality Distribution Center in Shafter;
- RailEx in Delano;
- Savage Industries in Wasco;
- Wallace Transport/Cascade Drayage in Merced;
- Lathrop Terminal in French Camp;
- West Coast Warehousing in Stockton;
- Stockton Intermodal Facility in Stockton; and
- Richard Best T Transfer Inc. in Reedley.

These 38 sites are shown in Figure 2.9 below.

Figure 2.9 Central Valley California Intermodal Facilities



Source: Cambridge Systematics.

2.1.6 Connect to International Ports of Entry

The Central Valley is home to two International Ports of Entry as defined by U.S. Customs and Border Protection.[10] These are locations within the United States that can process the entry of foreign goods. One location is the Fresno Yosemite Airport in Fresno, the second is Meadows Field International Airport in Bakersfield. Both are located within Urbanized Areas, thus any immediate connecting routes would not be eligible for designation as a CRFC. All other International Ports of Entry in California would be reached using an Interstate or major State Route such as SR 99. The only possible exception is for goods in southwestern Kern County which could use SR 166/SR 33 to reach Port Hueneme in Oxnard.

2.1.7 Provides Access to Significant Air, Rail, Water, or Other Freight Facility

Another possible selection criteria is that the route provides access to significant air, rail, water, or other freight facility. No thresholds have been established to define what constitutes a "significant' facility, so the state has some latitude in deciding what sites and connecting roads qualify.

2.1.8 Deemed Vital by State

The final criteria under the FAST Act is that the route is, "determined by the State to be vital to improving the efficient movement of freight of importance to the economy of the State."[11] This provides the State with some flexibility to designated routes that do not meet one of the more prescriptive criteria described above. Caltrans has not yet established a method for identifying such routes. Note: The State of California began discussing these facilities in the spring of 2016.

3.0 Priority Rural Corridors – State and U.S. Routes

One initial challenge in this Task was defining a priority rural corridor and differentiating them from connectors (Task 1) and truck routes (Task 2). For purposes of this report, State and U.S. routes in rural areas (defined as outside of U.S. Census designated Urbanized Areas) form the backbone of the priority rural corridor system. These routes are designed to move goods on a regional, state, and national level.

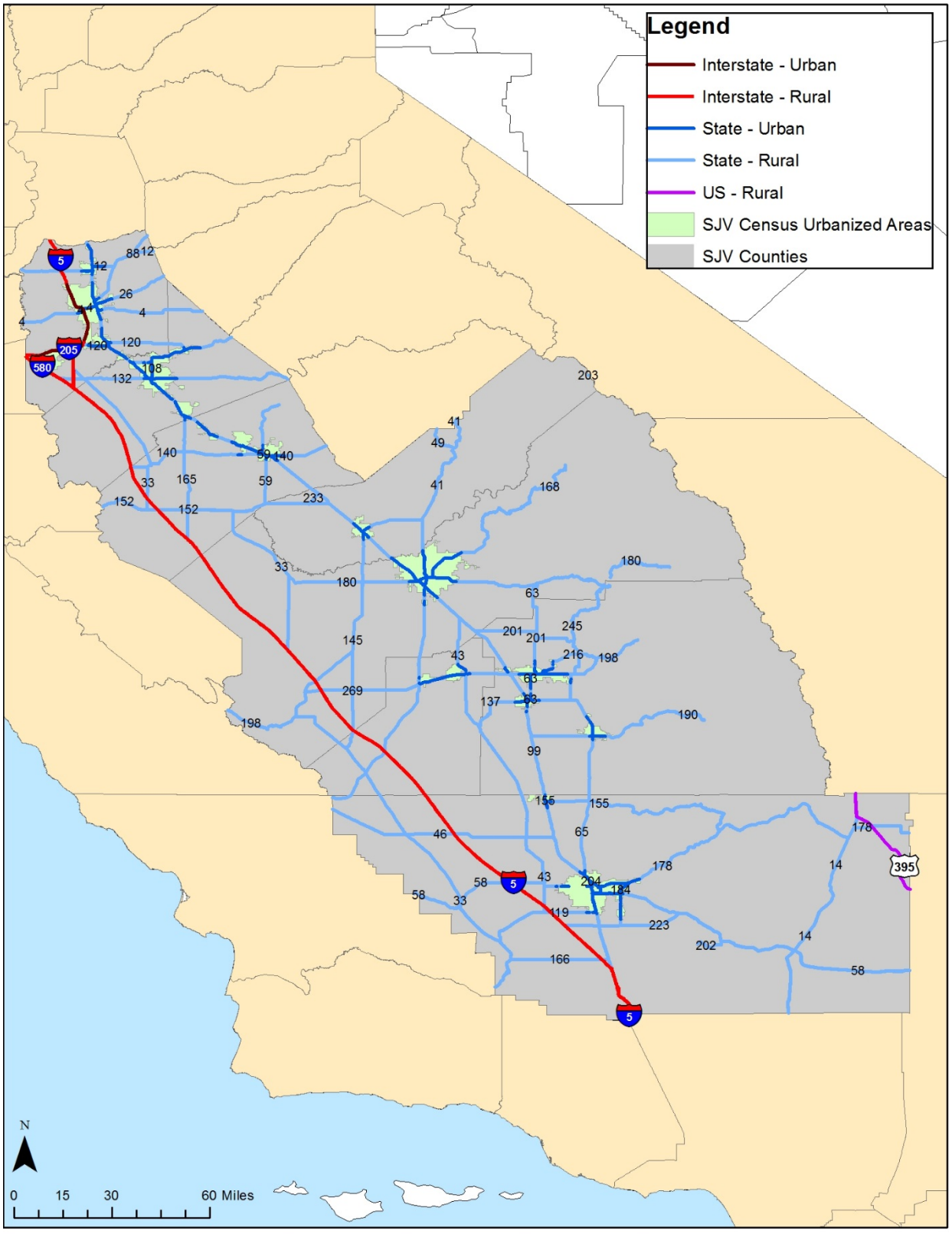
3.1 State and U.S. Routes

Figure 3.1 shows the U.S. and State route system in the region, and identifies if the road is inside or outside an Urbanized Area. State routes in Urbanized Areas are still important corridors that will be included in the analysis and development of Truck Routes as part of Task 2, but they do not fit the description of Priority Rural Corridors. These routes are also identified in Table 3.2 below.

[10] https://www.cbp.gov/contact/ports/ca.

[11] http://ops.fhwa.dot.gov/fastact/crfc/sec_1116_gdnce.htm.

Figure 3.1 Interstate, U.S., and State Routes in SJV



Source: FHWA, Caltrans.

Table 3.1 California's U.S. and State Routes

Route	Rural (Miles)	Rural (Percent)	Urban (Miles)	Urban (Percent)	Total (Miles)
Total US	35.50	100%	–	0%	35.50
US 395	35.50	100%	–	0%	35.50
Total State	2,043.58	87%	317.04	13%	2,360.62
CA 4[a]	40.47	86%	6.79	14%	47.26
CA 12	22.60	83%	4.72	17%	27.33
CA 14[a]	65.53	100%	–	0%	65.53
CA 26	15.31	79%	4.06	21%	19.37
CA 33	218.58	100%	–	0%	218.58
CA 41	117.94	88%	15.44	12%	133.39
CA 43	94.96	98%	2.37	2%	97.33
CA 46	57.85	100%	–	0%	57.85
CA 49	9.18	100%	–	0%	9.18
CA 58[a]	125.18	92%	11.07	8%	136.25
CA 59	30.93	91%	3.21	9%	34.14
CA 63	30.42	79%	7.89	21%	38.31
CA 65	56.49	88%	8.00	12%	64.49
CA 88	24.61	97%	0.84	3%	25.44
CA 99[a]	156.97	57%	117.57	43%	274.54
CA 108	0.47	3%	15.29	97%	15.76
CA 119	28.12	95%	1.47	5%	29.59
CA 120	28.67	73%	10.77	27%	39.44
CA 132	50.42	86%	8.45	14%	58.86
CA 137	24.19	82%	5.27	18%	29.46
CA 140	44.51	89%	5.54	11%	50.06
CA 145	62.33	94%	4.31	6%	66.64
CA 152	58.36	100%	–	0%	58.36
CA 155	61.60	96%	2.28	4%	63.88
CA 165	37.46	98%	0.79	2%	38.25
CA 166	24.58	100%	–	0%	24.58
CA 168	56.01	83%	11.88	17%	67.88
CA 178	90.42	89%	11.11	11%	101.53
CA 180	101.51	89%	12.24	11%	113.75
CA 184	2.77	20%	11.32	80%	14.09
CA 190	52.70	93%	3.67	7%	56.37
CA 198	93.50	82%	21.19	18%	114.69
CA 201	25.27	100%	–	0%	25.27

Route	Rural (Miles)	Rural (Percent)	Urban (Miles)	Urban (Percent)	Total (Miles)
CA 202	8.57	100%	–	0%	8.57
CA 203	0.07	100%	–	0%	0.07
CA 204	0.00	0%	4.78	100%	4.78
CA 216	15.16	83%	3.14	17%	18.30
CA 219	3.20	67%	1.60	33%	4.80
CA 223	30.24	100%	–	0%	30.24
CA 233	4.10	100%	–	0%	4.10
CA 245	41.95	100%	–	0%	41.95
CA 269	30.37	100%	–	0%	30.37
Total All	**2,079**	**87%**	**317**	**13%**	**2,396**

Source: Caltrans.
[a] Routes (or portions) already included as part of NHFN.

3.2 Criteria for Identifying Most Important State Routes

3.2.1 Analytical Analysis

All of the state highways have published truck counts that can be used to establish daily truck volumes and truck percentages but the data for many of these sites may be estimated and the accuracy of the counts may be questionable. Where possible, if there are additional counts available at the local level (even nonclassified counts) that can be used to check and verify the published counts, these will be used along with Valleywide truck model data. There may also be limited data on truck tonnage flows and commodities available for some of the routes. We will examine the possibility of using estimates of tonnage flows through adaptation of the Valleywide model to route commodity flows (tonnage by commodity) by adjusting the model procedures to assign a "trip table" of the FHWA's Freight Analysis Framework (FAF) commodity flow data that has been disaggregated to zones within counties prior to converting the tonnage flows to daily truck trips. This procedure would also rely on the use of the disaggregation procedures that are built into the Valleywide truck model to develop this commodity-based "trip table." This will provide a crude estimate of the tonnage flows on each of the rural corridors that are being evaluated.

3.2.2 Identification in Previous Planning Documents

The San Joaquin Valley Interregional Goods Movement Plan

The San Joaquin Valley Interregional Goods Movement Plan did not systematically identify corridors or routes in rural areas that are important to goods movement. However, it did create a list of 50 priority projects for the region. Although not all of these projects are highway focused, the list of projects does provide a glimpse at the most important goods movement locations and corridors in the region. Projects were divided in to seven categories: 1) Regional Highway Capacity; 2) East-West Connectors; 3) Local "Last Mile" Access; 4) Modal Capacity for Expected Flows; 5) Economic Development; 6) Inland Ports; and

7) Strategic Programs. Routes that could potentially qualify as Critical Rural Freight Corridors[12] based on their location outside of Urbanized Areas (see discussion below) from the Priority Highway Capacity and Priority East-West Connector categories are identified in Table 3.2. The other categories either did not include any highway projects or all of the projects are located in Urbanized Areas and thus ineligible for inclusion as Critical Rural Freight Corridors.

Table 3.2 Potential Critical Rural Freight Corridor Projects Identified in the San Joaquin Valley Interregional Goods Movement Plan

Project Type	Route	From	To	Notes
Highway Capacity	SR 65	Tulare County Line	SR 190	Widen corridor
East-West Connector	SR 41	King County Line	Elkhorn Ave	Northern section likely part of Fresno UA. Widen to 4 lane expressway
	SR 120	I-5	SR 99	Widen corridor and new Interchange. Western portion only is outside UA (Manteca and Stockton)
	SR 132	SR 99	I-580	Widen corridor. Eastern portion in Modesto UA
	SR 152			Bypass City of Los Banos
	SR 12	I-5	SR 99	Widen corridor. Eastern portion in Lodi UA
	SR 58	I-5	SR 99 and east	New Centennial Corridor. Section in Bakersfield UA
	SR 137	Lindsay	Tulare	Widen corridor
	SR 198	I-5	Lemoore NAS	Widen corridor from 2 to 4 lanes

Source: Table 3.2 and Table 3.3. San Joaquin Valley Interregional Goods Movement Plan.

California Freight Mobility Plan

The California Freight Mobility Plan relied heavily on information developed in the San Joaquin Valley Interregional Goods Movement Plan. It identified critical corridors in the Central Valley as follows:[13]

North-South Routes

- Interstate 5;
- Interstate 580;
- SR 99; and
- SR 41.

[12] Not including the Interstate system, SR 99, and SR 58 east of Bakersfield as they are already part of the NFHN.

[13] http://www.dot.ca.gov/hq/tpp/offices/ogm/CFMP/Dec2014/Appendices/Appendices/Appendix_B_Fact_Sheets/Dec2014/Appendix_B-6-5_SanJoaquinValley_090814.pdf#zoom=75.

East-West Routes

- Interstate 205;
- SR 4, SR 12, SR 26, SR 46, SR 58;
- SR 108, SR 120, SR 132, SR 140; and
- SR 152, SR 180, SR 198, SR 219.

In addition, Interstate 580, Interstate 5, and SR 99 are identified as Tier 1 freight facilities. These are routes with the highest truck volumes that provide essential connectivity to and between key freight gateways and regions. The plan also highlights a number of trucking issues including significant congestion at the intersection of SR 99 and Arch Road and Airport Way and Roth Road in Stockton – these are key access routes to intermodal rail facilities. Both these intersections are in Urbanized Areas.

Interregional Transportation Strategic Plan

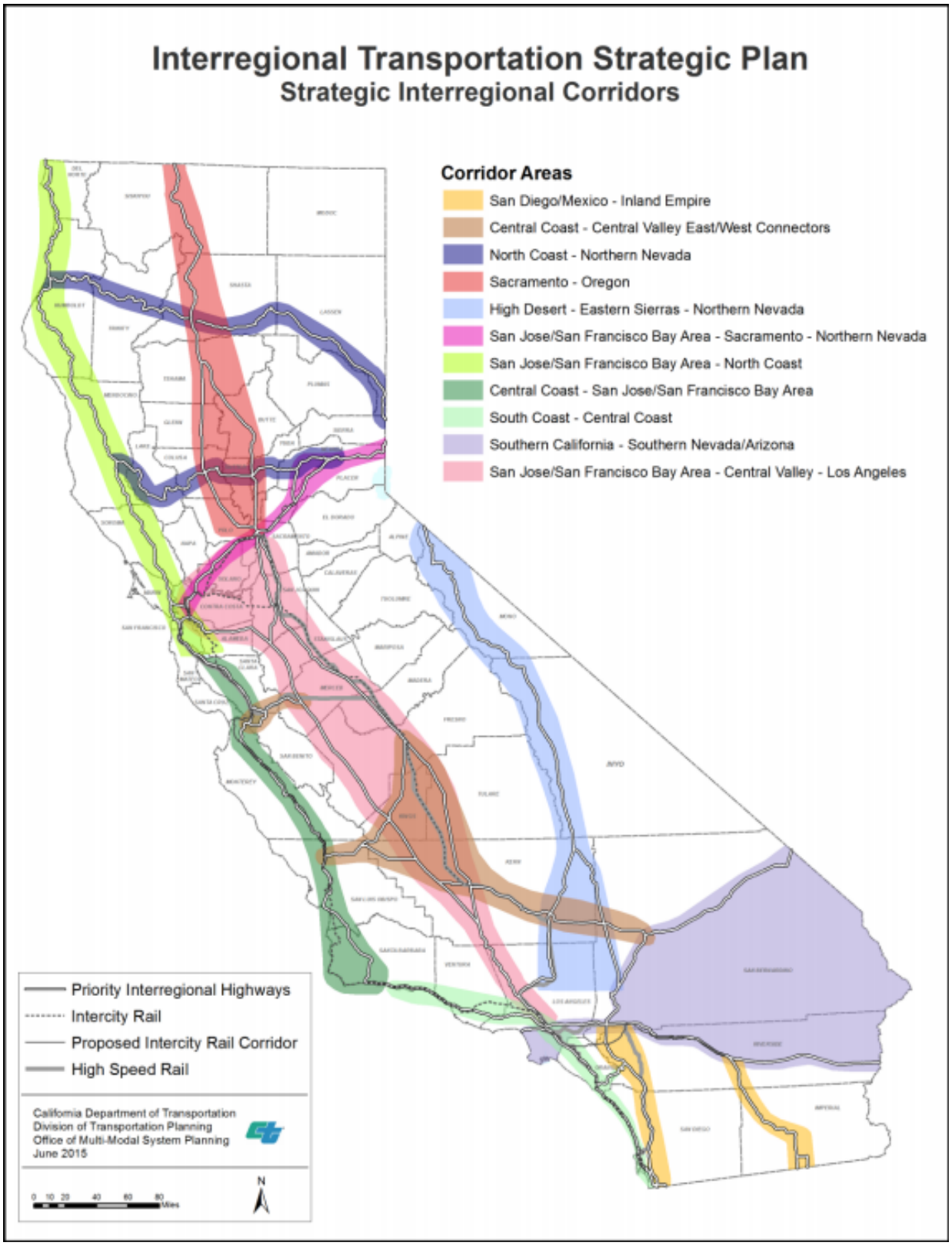
Last updated in 2015, this document identifies routes that are considered by Caltrans to be most critical in supporting interregional transportation. As shown in Figure 3.2, The Interregional Transportation Strategic Plan (ITSP) identifies 11 Strategic Interregional Corridors in the state, these corridors include multimodal facilities that link major regions of the State and support economic and social needs. Two Corridors include routes under consideration as part of this plan.[14] These are the San Jose/San Francisco Bay Area – Central Valley – Los Angeles Corridor running North-South and the Central Coast – Central Valley East/West Connectors Corridor running East-West.

The San Jose/San Francisco Bay Area – Central Valley – Los Angeles Corridor runs north and south connecting the San Francisco Bay Area to Los Angeles. The two key routes in the corridor are Interstate 5 and SR 99. The document notes an essential difference between the routes in that I-5 primarily carries high-speed, long-distance truck and auto trips whereas SR 99 serves a wide variety of industries and carries significant amounts of local and regional traffic. Interstate 580 is also an important east-west link within the Corridor. Preservation of these three routes are included as highest priorities.

State Routes 41, 46, 58, 152 and 156 are included in the "Central Coast and San Joaquin Valley East-West Connections" Corridor. SR 58 is a critical link between I-5 and SR 99 in the southern portion of the Central Valley, while SR 41 connects the two routes through Kings and Fresno counties. SR 152/156 connects I-5 and SR 99 through Merced and Madera counties. These routes also link I-5 to the Central Coast region further west and provide access to the agricultural and transportation/warehousing sectors along U.S. 101. SR 58 and SR 152 are Tier 2 freight facilities under the California Freight Mobility Plan and SR 41 and 46 are identified as Tier 3 freight facilities. Funding priorities in the Corridor that will impact freight movement include completing SR 41, 46, and 156 to expressway standards, completing an interchange at SR 41 and 46, and making safety improvements along SR 41.

[14] A third, the "High Desert – Eastern Sierras – Northern Nevada" Corridor travels through eastern Kern County.

Figure 3.2 Strategic Intermodal Corridors, 2015[a]



[a] Interregional Transportation Strategic Plan 2015. Available at: http://www.dot.ca.gov/hq/tpp/offices/omsp/system_planning/documents/Final_2015_ITSP.pdf.

3.3 List of Best State and U.S. Routes

Table 3.3 below shows the subset of state and U.S. routes in the region that are the most critical Rural Corridors and are best positioned to seek freight funding through the PRFC designation under the FAST Act. Subset of all state/U.S. routes that best meet the above criteria.

Table 3.3 Recommended Priority Rural Corridors – State and US Routes

Route	From	To	County	CRFC?	Notes (FAST Act criteria, AADT, Other)
SR 99			All	No-already on PHFN	
SR 58			Kern		Non-urban, non PHFN section
SR 120			Stanislaus, San Joaquin		Non-urban, non PHFN section
SR 14			Kern		Non-urban, non PHFN section
SR 4			Stanislaus, San Joaquin		Non-urban, non PHFN section
SR 46	SR 99	San Luis Obispo border	Kern	Yes	Truck AADT, Access to mining, ag, etc.
SR 41	SR 49	San Luis Obispo border	Fresno, Kings		
SR 198	I-5	Naval Air Station	Fresno, Kings		
SR 152	SR 99	San Benito border	Merced, Madera		

4.0 Priority Rural Corridors – Local Routes

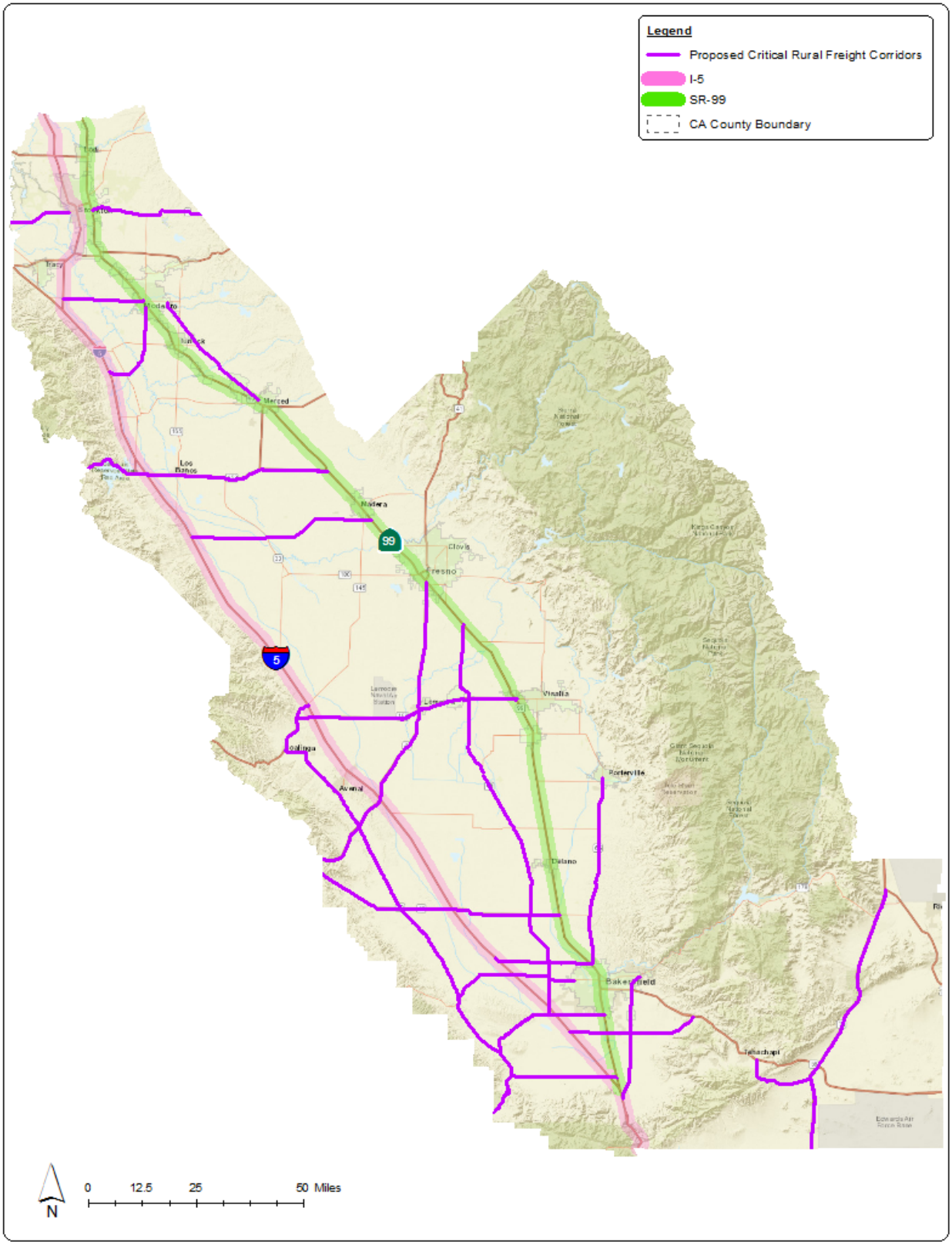
In addition to the U.S. and state routes identified in Section 2, there are a limited number of local roads that should be included as Priority Rural Corridors. These routes provide redundancy, capacity, and connectivity in the region. In addition, they meet one or more of the needed criteria to be designated as CRFCs, so could compete for funding should Caltrans seek to identify local routes or more funding becomes available in the future.

Table 4.1 Recommended Primary Rural Corridors – Local Roads

Route	To	From	County	Total Miles[a]
Santa Fe Ave/Dr	SR 132	SR 59	Stanislaus and Merced	31.7
W Main St/E Las Palmas Ave/Sperry Ave	SR 99	I-5	Stanislaus	18.4
W Nees Ave/Ave 7 1/2/ Firebaugh Blvd/Ave 12	I-5	SR 99	Fresno and Madera	43.5
7th Standard Rd	I-5	SR 99	Kern	23.0

[a] Includes miles in urbanized areas.

Figure 4.1 Priority Rural Corridors – Local Roads



Source: Google Earth.

5.0 Feedback from Stakeholder Groups

Once an initial evaluation of the priority rural corridors has been conducted and the top priority corridors have been determined from the data, the results will be shared with the Technical Working Group established for this project and the Stakeholder Advisory Committee in order to take into account qualitative considerations or to get input where data are more limited. Using the input of these two stakeholder groups, final adjustments will be made and a set of recommended priority rural corridors will be designated.