2-1 California's Freight Transportation Assets

Overview/Introduction

California has the most extensive, complex, low impact, interconnected freight system in the nation. The system is the result of more than a century of innovative and cooperative, private and public investment. The Transcontinental Railroad's golden spike that was driven during the midst of the Civil War solidified California's link to the rest of the nation. Since then, the connection has strengthened to create an un-paralleled freight system that in 2011 transported approximately 167.5 million tons of freight valued at $696.8 billion between California and the rest of the United States, and effectively delivered approximately 93.1 million tons of United States freight exports valued at $182.5 billion through California's international gateways to markets throughout the world (FHWA – FAF 3).

California's current-day core freight system is composed of 12 deep-water seaports, 12 cargo airports, 2 Class 1 and 26 short line railroads operating over approximately 6,000 miles of railroad track, approximately 5,800 miles of Interstate and State highways, 3 existing and 1 future commercial land border ports of entry (POE), intermodal transfer facilities, approximately 19,370 miles of hazardous liquid (includes crude oil, refined petroleum products, and other highly volatile liquids) pipelines and natural gas gathering and transmission pipelines, a vast warehousing and distribution sector, and numerous local connector roads that complete the "last mile." This enormous freight system requires continuous investment to maintain and modernize its every aspect. The demands are enormous. Ports and their navigation channels must be dredged for ever larger ships; railroad track must be upgraded to handle heavier loads and faster trains; highway pavement has to be strengthened to handle more trucks with more cargo; airports must balance passenger and air-freight demands; and innovative technologies must be developed and applied across the entire industry to improve efficiency, and reduce costs. These daunting needs must be met at the same time that community and environmental impacts are reduced. Doing all of this while maintaining California's international competiveness and retaining millions of freight related jobs is a challenge that must be met.

California's freight assets include a deep inventory of infrastructure that is essential for supporting the multitude of freight dependent industries within the State. The smooth functioning of California's complex freight system depends on a series of interconnected facilities working in concert with one another. Each system component is typically owned and operated by a different public or private organization, often in competition with other organizations that have similar facilities. Seaports compete against each other for domestic and international business. The Class 1 railroads are the nation's two largest and are very competitive with each other while also sometimes sharing the

same track. Each trucking company is in competition with many other trucking and logistics firms, and owner/operators. Still the whole system works remarkable well due to a web of cooperative relationships and partnerships. There are many opportunities to identify efficiencies in operating this system and applying new data and information tools, as well as innovative equipment and system management, to reduce time and costs in moving freight.

Map-21 and the National and Primary Freight Networks

The U.S. DOT's Federal Highway Administration (FHWA) is in the process of establishing a National Freight Network (NFN) that consists of Interstate, state highway routes, and local roads. The NFN uses centerline miles for calculation; however, it is not yet clear what the totality of the network will be. A less extensive Primary Freight Network (PFN) (see figure 2-1.1) is being established based on statutory criteria that will consist of approximately 30,000 centerline miles of the most critical freight roadways. In part, MAP-21 requires the designation of this network to "assist States in strategically directing resources toward improved system performance for efficient movement of freight on highways, including the national highway system, freight intermodal connectors, and aerotropolis transportation systems" (MAP-21).

The NFN components are described as a three tiered network that includes:

1. the PFN, described as the most critical to the movement of freight;
2. the portions of the Interstate System not designated as part of the primary network; and
3. critical rural freight corridors, described as rural principal arterial roadways that have a minimum of 25 percent of the annual average daily traffic (AADT) of the road measured in passenger vehicle equivalent units from trucks (FHWA vehicle class 8 to 13); that provide access to energy exploration, development, installation, or production areas; that connect to the primary freight network or Interstate System, and handle more than 50,000 20-foot equivalent units (TEUs) per year or 500,000 tons of bulk commodities per year.

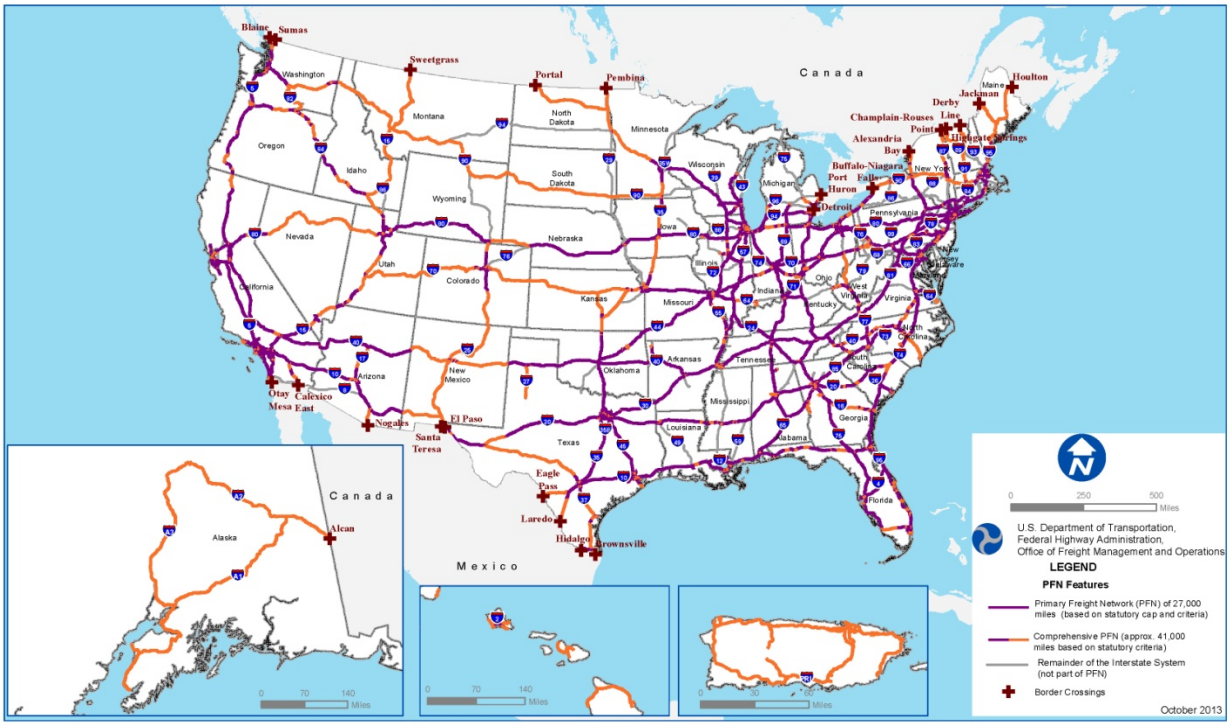
The NFN may also include critical urban freight corridors that are yet to be identified following pending guidance from FHWA. The NFN seeks to identify the priority freight infrastructure that is essential to supporting the nation's domestic movement of freight and provides connections for exports to and imports from world markets. The network is the first of its kind within the United States and demonstrates the current national emphasis on freight transportation. Significant intermodal facilities, freight rail facilities, seaports, airports, and international land ports of entry have been acknowledged as key national facilities by FHWA; however, these facilities are not included in the PFN or the NFN. It is expected that future federal authorizations of the Surface Transportation

Program will expand the network to not only include a corridor approach with more critical highway and local road freight corridors, but will also reflect the full multi-modal nature of the freight system to include all relevant non-highway components such as rail, port, and intermodal facilities. FHWA identified a draft comprehensive 41,000 centerline mile PFN network, based on the same statutory criteria and methodology but without a mileage cap, that includes intermodal connections to critical freight facilities (see Intermodal Connections section, pg. 25) and closes most of the network gaps identified within the 27,000 (ultimately 30,000) centerline mile network (see Figure 2-1.1).

The PFN was designated based on the following statutory criteria:

1. origins and destinations of freight movement within the United States;
2. total freight tonnage and value of freight moved on highways;
3. percentage of annual average daily truck traffic (AADTT) in the average daily traffic on principal arterials;
4. AADTT on principal arterials;
5. land and maritime ports of entry;
6. access to energy exploration, development, installation, or production areas;
7. population centers; and
8. network connectivity (MAP-21).

Figure 2-1.1: Draft National Highway Primary Freight Network



Source: FHWA

California's Portion of the National Freight Network

California's Department of Transportation (Caltrans), as well as other state departments of transportation (DOTs), promoted the inclusion of its significant freight roadway facilities into the NFN, specifically for inclusion into the PFN. It is unknown at this time what the total amount of centerline miles for California's freight facilities will be included in the final PFN, or ultimately the final NFN. The network will include all of California's current Intestate facilities; a subset of California's State Highway System (SHS) designated to the PFN; and some of California's critical rural freight corridors.

For the draft PFN, California has approximately 2,790 centerline miles along all or portions of 43 routes (see Table 2-1.1 and Figures 2-1.3 through 2-1.6). This total includes 1,274 centerline miles located within 23 urban areas of the State with populations of 200,000 or greater, and 1,515 centerline miles outside of those urban areas (FHWA-27k PFN Tables). Due to the very large freight volumes transported on the State's highways and the State's geographic extent, California received the nation's largest share of the draft PFN mileage, resulting in approximately 10 percent of the total draft PFN. The draft PFN also recognizes two of California's commercial land border POEs, Otay Mesa in San Diego County and Calexico East in Imperial County, although they are not specifically included in the PFN.

Table 2-1.1: California's Primary Freight Network (PFN) Routes

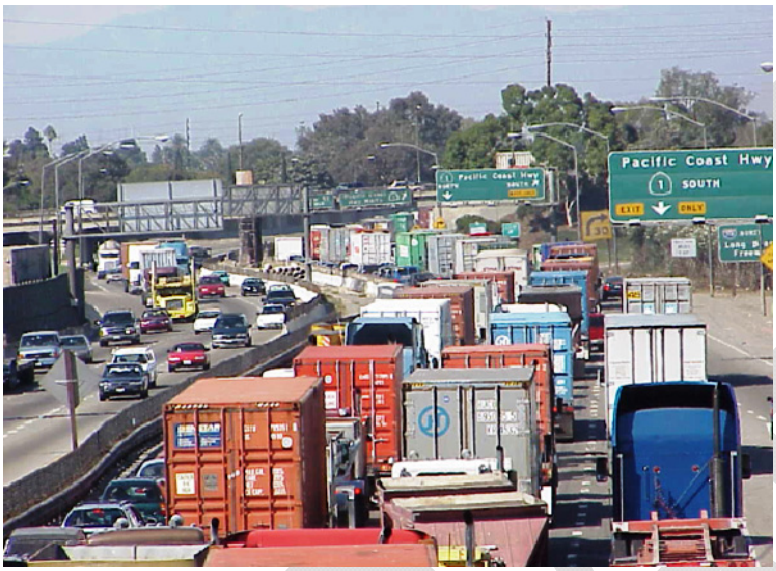
Route	Centerline Miles	Route	Centerline Miles
State Highway/Interstate Routes			
I-10	234.74	SR 118	8.19
I-105	12.97	SR 120	5.59
I-110	17.4	SR 134	2.39
I-15	288.47	SR 14	23.45
I-205	12.96	SR 170	5.96
I-210	48.38	SR 22	9.88
I-215	41.1	SR 23	6.6
I-238	2.16	SR 4	3.37
I-305	2.95	SR 47	1.89
I-40	148.17	SR 55	9.32
I-405	70.73	SR 57	19.34
I-5	716.73	SR 58	101.45
I-580	32.24	SR 60	61.32
I-605	27.46	SR 71	3.63
I-680	27.4	SR 710	2.11
I-710	20.55	SR 78	1.24
I-8	13.96	SR 86	24.27
I-80	156.87	SR 91	58.74
I-805	26.67	SR 99	298.14
I-880	41.78	US 101	168.81
SR 111	12.55	US 50	12.53
Local Roads			
Miramar	5.15		
Totals		**Centerline Miles**	
State Highway/Interstate		2,784.46	
Local Road		5.15	
California		2,789.61	

Source: FHWA - Draft 27K PFN Table

The California freight facilities that are represented in the draft PFN include major south/north and west/east freight corridors traversing much of the State. While the draft PFN is expansive in California, it does not reach all of the State's primary freight regions or major freight facilities, and includes numerous gaps and missing segments throughout the state. Specifically, the network is absent from the North Coast, Central Coast, and the Eastern Sierras (see Figure 2-1.3). The draft PFN also stops just short of many of California's major freight facilities, including the POEs in San Diego and Imperial Counties. The draft expanded 41,000 centerline mile PFN includes

intermodal connections to most of California's critical freight facilities and closes many of the network gaps identified within the 27,000 (ultimately 30,000) centerline mile network (see Figure 2-1.1). The freight facilities located in California's primary freight regions which are absent in the draft PFN, along with the statewide gaps and missing segments within the draft PFN, are represented in the California State Highway Freight Network (see State Highway Freight Network section, pg. 10).

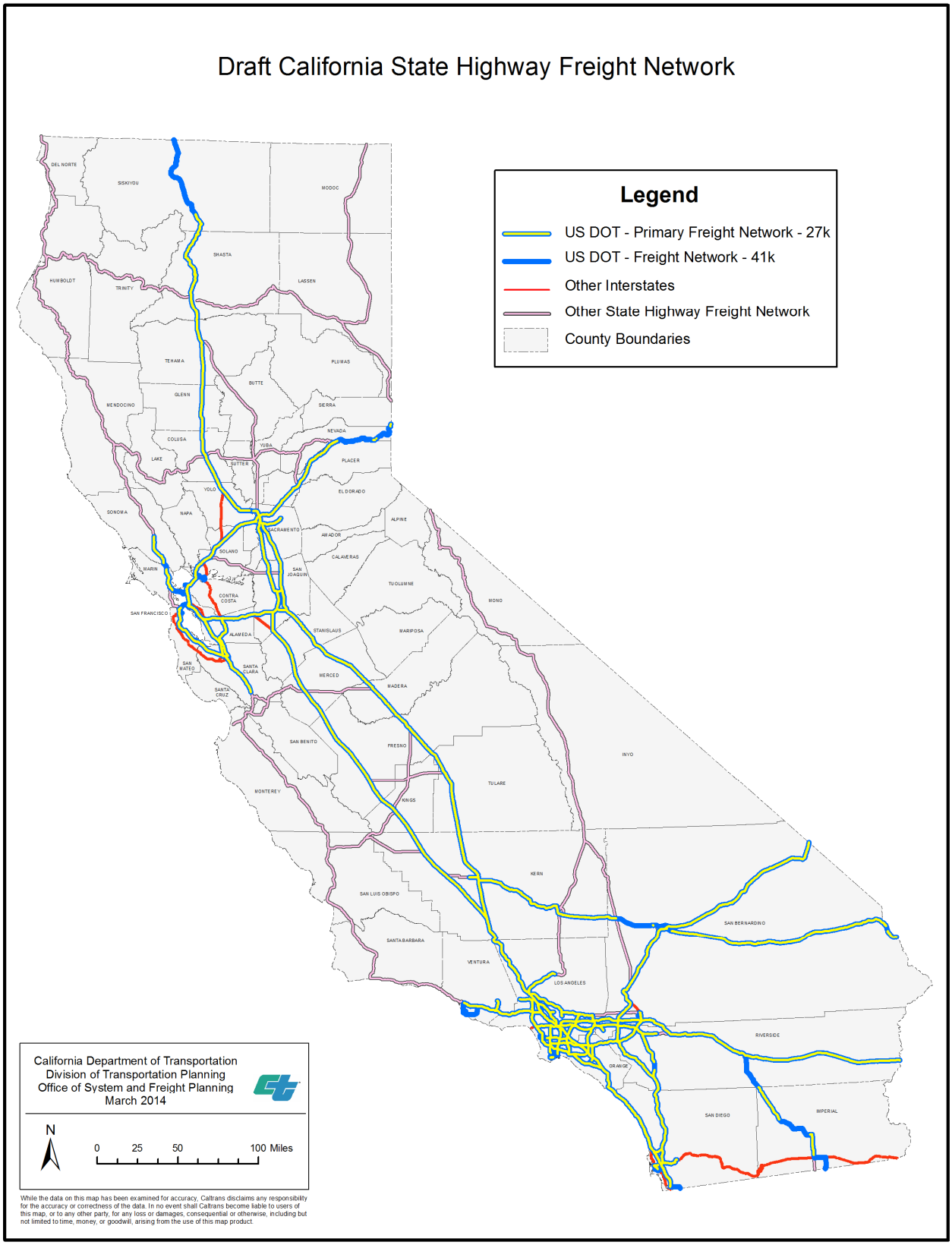
Figure 2-1.2: Congested Freight Corridor



Source: Caltrans DOTP

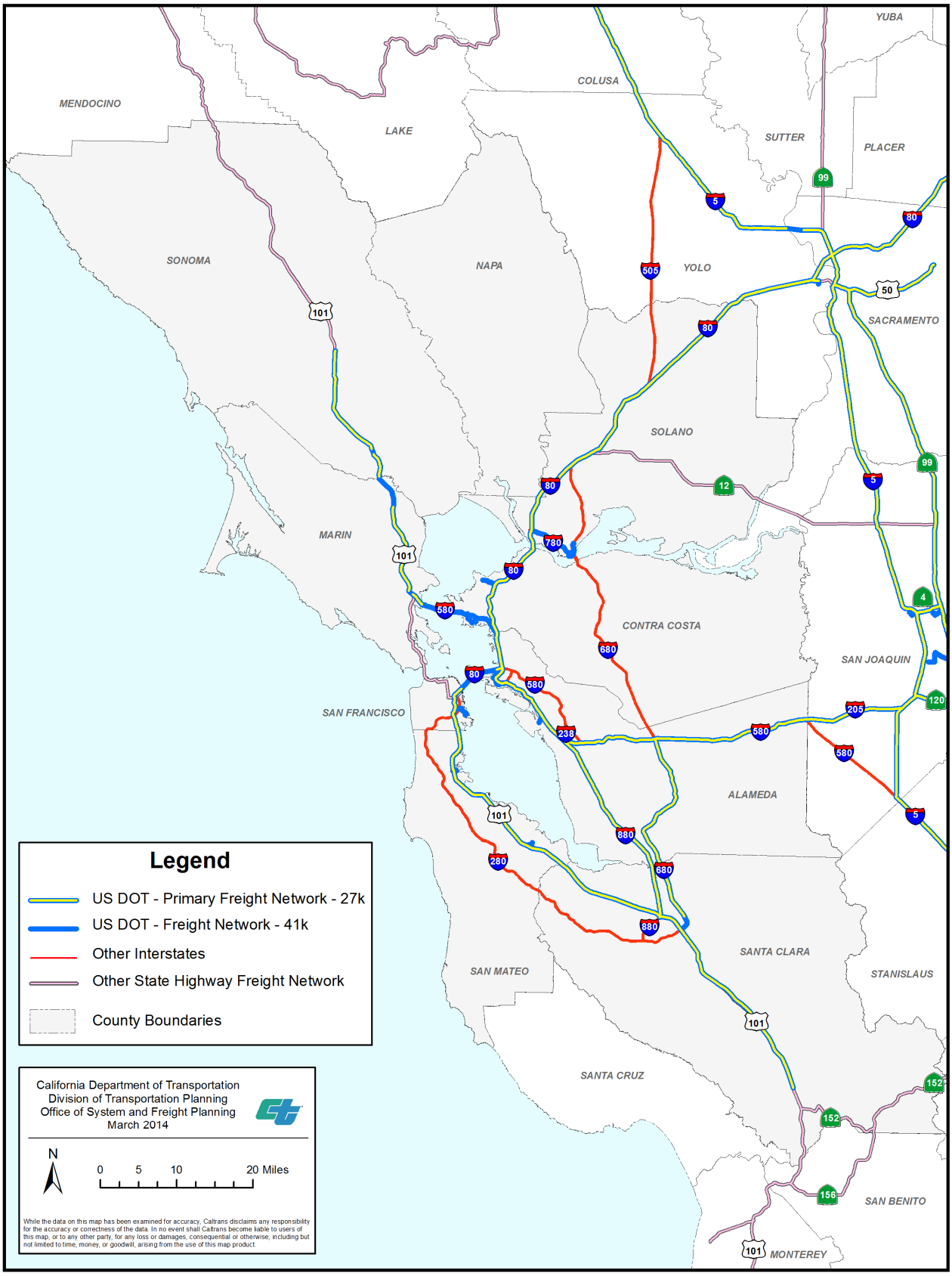
The short-term benefit to inclusion of California's freight infrastructure is an increase of federal funding shares for freight projects to 90% and 95% for projects that are on the network and located within a state freight plan. The anticipated long-term benefit of California's freight infrastructure being included in the PFN is that the State will be in a position to articulate the need of freight transportation improvements on these routes if future federal surface transportation authorizations include federal funds for freight. Also, these higher volume freight facilities could be prioritized and given support for transitioning to more efficient and lower polluting corridors by employing new engines, fuels, and operational strategies along those corridors.

Figure 2-1.3: California State Highway Freight Network



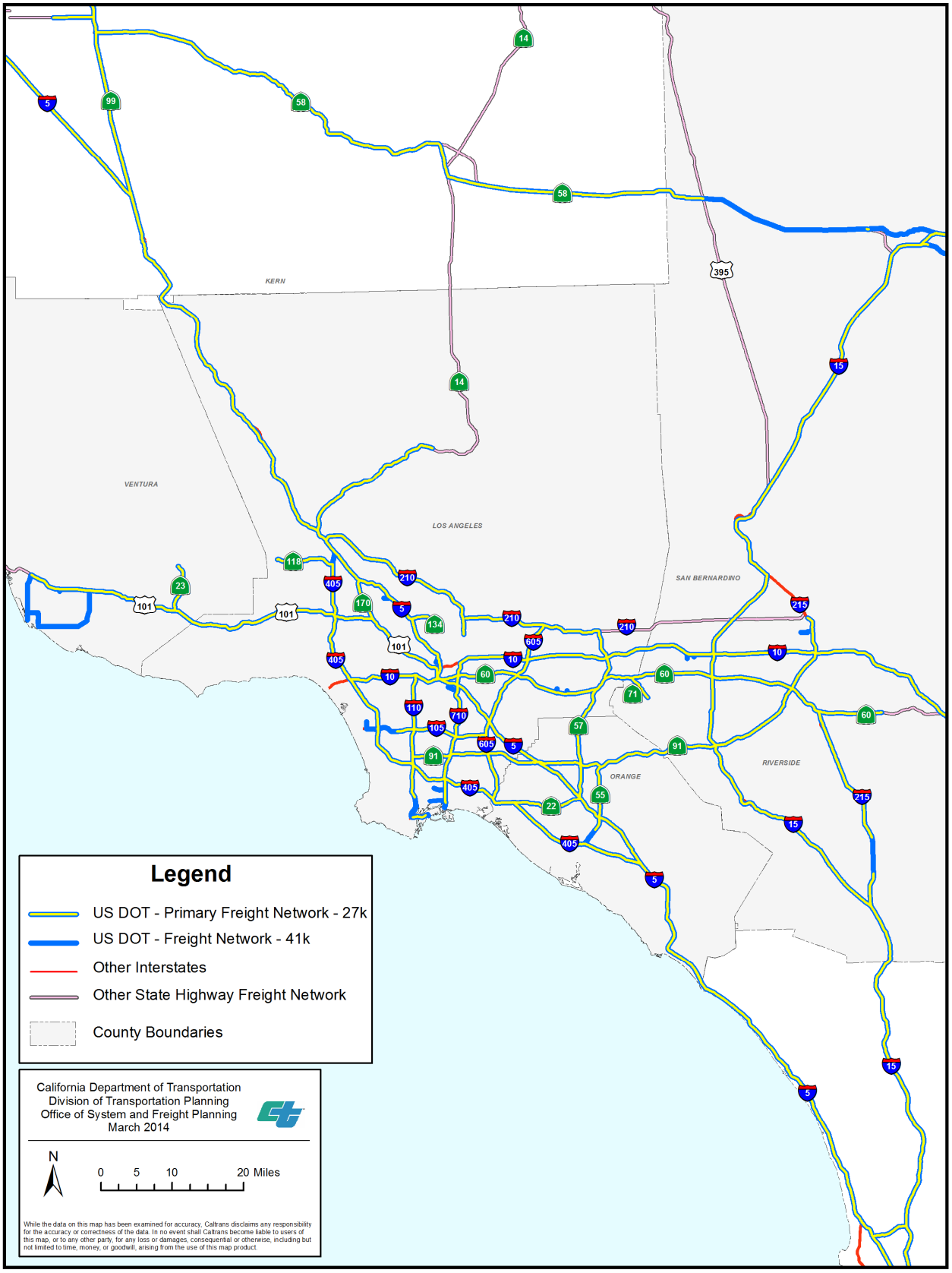
Source: Caltrans DOTP

Figure 2-1.4: California State Highway Freight Network – San Francisco Bay Area and Delta



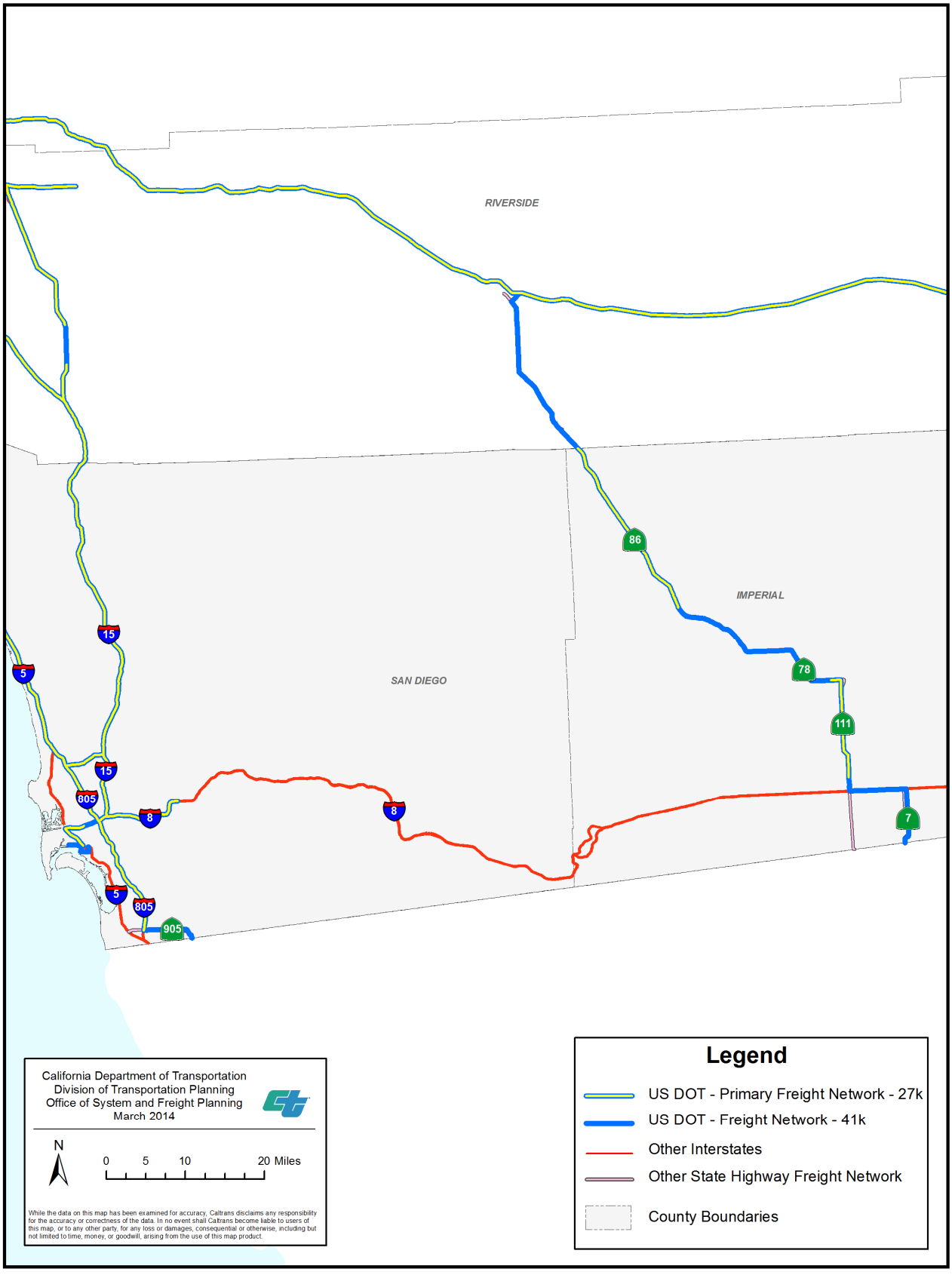
Source: Caltrans DOTP

Figure 2-1.5: California State Highway Freight Network – Southern California



Source: Caltrans DOTP

Figure 2-1.6: California State Highway Freight Network – Border



Source: Caltrans DOTP

California's Multimodal State Freight System

State Highway Freight Network

In 2013, California's State Highway System (SHS) included approximately 15,133 centerline highway miles, of which 2,453 are Interstate and 12,680 are Non-Interstate, and a total of 50,486 lane miles (Mile Marker 2013, Executive Fact Book 2013). The State Highway Freight Network is a subset of the SHS that includes all of California's existing Interstate facilities (excluding those Interstate facilities where trucks are not allowed such as a portion of I-580 in Alameda County), the Interregional Transportation Strategic Plan (ITSP) "Focus Routes", and a subset of the SHS that experience overall volumes of 3 to 5+ axel trucks in excess of 3,000+ Average Annual Daily Truck Traffic (AADTT).

Table 2-1.2: California's State Highway Freight Network Routes

Route	Centerline Miles	Route	Centerline Miles
State Highway/Interstate Routes			
I-10	238.30	SR 152	83.68
I-105	17.55	SR 156	24.15
I-110	20.63	SR 170	6.09
I-15	288.47	SR 198	47.71
I-205	14.33	SR 20	155.95
I-210	74.50	SR 22	10.00
I-215	54.98	SR 23	6.83
I-238	2.23	SR 29	30.86
I-280	57.51	SR 299	138.19
I-380	2.06	SR 36	10.16
I-40	154.63	SR 4	4.12
I-405	72.52	SR 41	81.33
I-5	796.23	SR 44	106.73
I-505	32.98	SR 46	63.63
I-580	76.46	SR 47	2.24
I-605	27.64	SR 49	22.66
I-680	70.50	SR 53	7.45
I-710/SR 710	24.81	SR 55	11.87
I-780	6.88	SR 57	24.12
I-8	170.07	SR 58	141.50
I-80	204.08	SR 60	71.39
I-805	28.73	SR 66	0.74
I-880	45.87	SR 7	7.36
I-980	2.03	SR 70	52.54
SR 1	1.04	SR 71	3.69
SR 103	1.59	SR 78	6.30
SR 111	21.89	SR 86	69.97
SR 118	8.19	SR 905	8.54
SR 112	48.97	SR 91	59.46
SR 120	6.38	SR 99	359.77
SR 134	2.61	US 101	807.99
SR 14	117.96	US 395	556.83
SR 149	5.54	US 50/I-305	18.15
Local Roads			
Miramar Road	5.15	Figueroa Street	0.17
Dillon Road	1.51	W. Willow Street	0.89
Intermodal Connectors			
Intermodal Connector Mileage*			64.01

Totals	Centerline Miles
State Highway/Interstate	5,700.15
Local Road	7.72
Intermodal Connectors	64.01
California	5,771.88

*For specific routes see Intermodal Connections section, pg. 25.

Source: Caltrans DOTP, FHWA Draft 27K and 41K Tables

The State Freight Highway Network also includes highway corridors that serve agricultural regions that have high seasonal truck traffic that do not, when averaged throughout the year, reach the 3,000 AADTT thresholds. However, during the agricultural season, these corridors experience truck counts that typically exceed the 3,000+ count on a daily basis. The network includes rural routes that connect to the primary freight network for the interregional movement of freight, serve mining and timber production areas, or that provide access to energy exploration, development, installation, or production areas. Taken together, this set of highways represents the routes of the most critical importance to the movement of freight within and through the state.

The State Highway Freight Network incorporates all of the freight facilities that FHWA has determined to have significance for freight movement at the national level, including both the draft 27,000 PFN and the draft expanded 41,000 PFN (see California's Portion of the National Freight Network section, pg. 4), as well as facilities that are significant to the movement of freight within the state. The network includes a total of approximately 5,772 centerline highway miles along all or portions of 68 Interstate and SHS routes, significant local roadways, and intermodal connectors (see Table 2-1.2 and 2-1.9, and Figures 2-1.3 through 2-1.6). For the SHS, these facilities represent the freight network that is able, or would be able at build-out, to accommodate 3 to 5+ axel trucks consistent with the configurations outlined within the Federal Surface Transportation Assistance Act of 1982 (STAA). "STAA truck routes and associated terminal access routes (which allow access to industrial and warehouse concentrations from major STAA routes) are the only roads that allow the largest combination (tractor-trailer trucks that are allowed in operation in California" (SJVGMP) without special permit. For maps that depict the locations of California's STAA routes, please see the District Factsheets contained in Appendix X.

The ten ITSP Focus Route corridors included in the State Highway Freight Network are comprised of a subset of legislatively designated interregional routes, known as the Interregional Road System (IRRS), for California that are essential to the movement of freight and people within the State, and are Caltrans' priority for the allocation of interregional funds. The Focus Route Corridors identified within the ITSP are:

- US 101 – Los Angeles to Oregon Border;
- SR 99 – Junction with I-5 in Kern county to junction with I-5 in Tehama County (Includes SR 70 from the Sutter 99/70 junction to SR 149 in Butte County);
- US 395 – Hesperia in San Bernardino County to Oregon State Line;
- Mexico Gateway Routes – State Routes 7, 11, 111, 78, 86, and 905;
- SR 58;
- SR 198;
- SR 41 and 46;
- SR 152 and 156;
- SR 20 (includes portions of SR 29, 53, and 49); and
- SR 299 (includes portions of SR 44 and 36).

Figure 2-1.7: Truck with Oversized Load

Source: DOTP Caltrans

Trucking is the most commonly used mode for California's freight transportation and almost all freight and services are transported by truck during some point within the

supply chain. For this reason the trucking industry is one of California's most valuable freight assets. California must continue to develop, maintain, and operate a safe, efficient, and reliable freight transportation network to accommodate the truck volumes necessary to move freight within the state. Please see Appendix X for the California Trucking Factsheet.

While not specifically outlined in this section, California's State Freight System includes significant local arterials and intermodal connectors that are essential to connecting intermodal freight facilities with the State's Highway and Freight Rail Networks (see Intermodal Connections section, pg. 25). In creating the NFN, FHWA has solicited advice from States on how to designate these urban freight routes. The urban freight routes will be added to this plan, via an amendment, once the federal designation process is completed.

Freight Rail Network

Figure 2-1.8: Cajon Summit

Source: Courtesy BNSF Railway Company

The freight railroad system in California is comprised of two Class I railroads and 26 short line railroads. "This freight rail network supports the operations of industries throughout the State and links California with domestic and interregional markets" (CSRP 123). This freight rail system is depicted in Figures 2-1.10 through 2-1.12. Railroads are grouped into three classes: Class I; Class II, and Class III, based on their annual operating revenue. Class I railroads generate an excess of $399 million in annual operating revenues. There are no Class II railroads operating in California at this time. Class III railroads are commonly referred to as "short line" railroads. Class III railroads generate less than $31.9 million in operating revenue.

The two Class 1 railroads operating in California are the Union Pacific Railroad (UPPR) and the BNSF Railway Company (BNSF). "UPPR is the largest railroad in California by number of employees, payroll, and track-miles operated." "UPRR operates an expansive network of rail lines that serves diverse regions of California, including the agriculturally rich San Joaquin Valley, the Port of Oakland, the San Francisco Bay Area, and the Los Angeles metropolitan area" (CSRP 127). "For its carload services, UPRR

operates two system classification yards at West Colton in Southern California and Roseville in Northern California, and three regional yards in Lathrop (San Joaquin County), Commerce (Los Angeles County), and Yermo (San Bernardino County)." "UPRR also has shared use of the on-dock rail terminals at the Port of Los Angeles (POLA) and Port of Long Beach (POLB) with BNSF" (CSRP 127). UPPR operates nearly 3,288 miles of track within California and handled nearly three million carloads in California in 2011 (CSRP 127). Table 2-1.3 includes the key operating statistics for UPPR. For additional information please see the California Railroad Factsheet located in Appendix X.

The BNSF Railway Company is the largest intermodal carrier in the United States and is the product of mergers and acquisitions of nearly 400 different railroad lines, including two major railroads (Burlington Northern Railroad and the Atchison, Topeka and Santa Fe Railway). Within California, BNSF operates on more than 2,000 track miles. In 2011 there were over 1.6 million BNSF carloads originating in the State and another 1.6 million terminating in the State. "Major BNSF freight hubs include 11 carload yards (including its major facility at Barstow), 5 dedicated intermodal terminals, and the shared on-dock rail facilities at the POLA and POLB" (CSRP 129). Along with the on-dock terminals at the POLA and POLB, significant BNSF's intermodal facilities in California include off-dock terminals at the Hobart Yard near downtown Los Angeles, the San Bernardino Intermodal Yard, and the OIG near-dock terminal in Oakland, CA. "California serves as a gateway to BNSF's Transcontinental Corridor, which links the POLA and POLB with Chicago" (CSRP 131). Table 2-1.3 includes the key operating statistics for BNSF.

Table 2-1.3: Class 1 Railroad Operating Characteristics in California

Name	Employees	Payroll (Millions of Dollars)	Track Miles Owned	Track Miles w/Trackage Rights	Total Miles Operated	Originating Carloads	Terminating Carloads
BNSF	2,983	$210	1,155	975	2,130	1,636,623	1,669,449
UPRR	4,741	$400	2,773	515	3,288	1,423,857	1,510,030

Source: 2013 California State Rail Plan and other listed sources

California has 26 active short line railroads (two of which are primarily operating passenger trains). This includes 18 short line and 8 switching and terminal railroads which operate over 823 route-miles (CSRP 131). Figures 2-1.10 through 2-1.12 depict California's freight rail network, including the short line railroads that currently provide freight service in California. For additional information please see the California Short Line Railroad Factsheet located in Appendix X.

The freight rail network also accommodates the operation of passenger trains throughout the State. In the past, the main freight rail lines had excess capacity to allow the use of passenger trains with little impact to the freight service. Passenger service volumes along these shared-use rail corridors has expanded, along with expansion of freight volumes and "mounting freight and passenger volumes have resulted in a primary railroad network that is operating with far less slack capacity" (CSRP 177). "The majority of current shared-track operations involve passenger services operation over tracks owned by BNSF and UPRR. These operations include all three state-supported routes (portions of the *Pacific Surfliner*, *San Joaquin* and *Capitol Corridor*) and the four Amtrak long-distance trains operating in the State" (CSRP 178).

Figure 2-1.9: Intermodal Rail Activity

Source: Caltrans DOTP

The freight rail network in California includes a number of significant intermodal rail terminals. "Intermodal rail terminals are established to facilitate transfer of containers and trailers between modes (ship to rail, truck to rail, and vice versa). In California, the majority of intermodal rail traffic is associated with the Port of Oakland, POLA, and POLB; a sizeable but smaller volume is related to wholly North American Free Trade Agreement (NAFTA) traffic" (CRSP 137). "Intermodal service is typically described as either container-on-flat car or trailer-on-flat car (TOFC)." "In California, all primary intermodal corridors have sufficient vertical clearances for double-stack service. Double stacking is not possible with TOFC" (CSRP 137). This inability to double-stack is due to the lack of structural strength of truck trailers. Table 2-1.4 identifies the facility characteristics for the intermodal terminals within California.

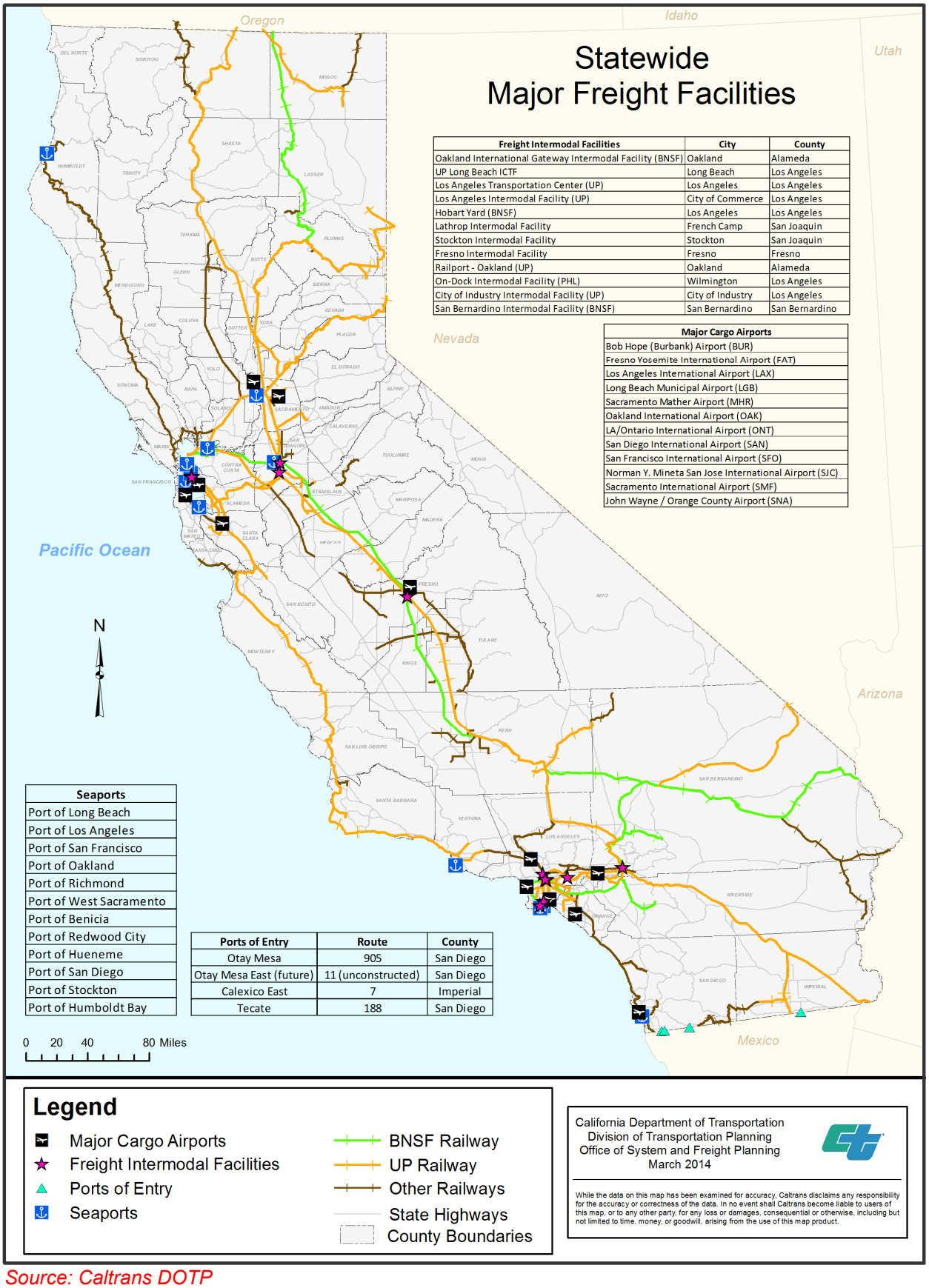
Table 2-1.4: Intermodal Rail Facility Characteristics

Name	Facility Type	Railroad	Data Year	Yard Capacity (Lifts)
Southern California				
City of Industry	Off-Dock	UPRR	2010	232,000
East Los Angeles	Off-Dock	UPRR	2010	650,000
Hobart	Off-Dock	BNSF	2010	1,700,000
Intermodal Container Transfer Facility (ICTF)	Near-Dock	UPRR	2010	822,200
Los Angeles Transportation Center (LATC)	Off-Dock	UPRR	2010	340,000
POLA/POLB On-Dock Intermodal Facilities	30 feet	BNSF/UPRR	N/A	N/A
San Bernardino	Off-Dock	BNSF	2010	660,000
Northern California				
Fresno (FRESCA)	Inland	BNSF	N/A	N/A
Lathrop	Inland	UPRR	Design Capacity	730,000
Oakland International Gateway (OIG)	Near-Dock	BNSF	Current	300,000
Railport-Oakland	Near-Dock	UPRR	Current	450,000
Stockton/Mariposa	Inland	BNSF	Design Capacity	300,000

Source: 2013 California State Rail Plan and other listed sources

Positive train control (PTC) is an advanced technology designed to automatically stop or slow a train to avoid collision accidents. The Rail Safety Improvement Act of 2008 (RSIA) set a major infrastructure safety mandate, by December 2015, for the installation of PTC rail technology on Class I railroads that handle poisonous-inhalation hazardous (PIH) materials, as well as main lines where commuter rail or intercity passenger services are regularly provided (USDOT – FRA) . This emerging technology provides benefits in terms of train separation and collision avoidance, line speed enforcement, temporary speed restrictions, and rail worker wayside safety. However, due to the high cost and complexity of installing PTC, rail operators are seeking delay for installation of PTC beyond the 2015 deadline.

Figure 2-1.10: California Statewide Major Freight Facilities



Freight Intermodal Facilities	City	County
Oakland International Gateway Intermodal Facility (BNSF)	Oakland	Alameda
UP Long Beach ICTF	Long Beach	Los Angeles
Los Angeles Transportation Center (UP)	Los Angeles	Los Angeles
Los Angeles Intermodal Facility (UP)	City of Commerce	Los Angeles
Hobart Yard (BNSF)	Los Angeles	Los Angeles
Lathrop Intermodal Facility	French Camp	San Joaquin
Stockton Intermodal Facility	Stockton	San Joaquin
Fresno Intermodal Facility	Fresno	Fresno
Railport - Oakland (UP)	Oakland	Alameda
On-Dock Intermodal Facility (PHL)	Wilmington	Los Angeles
City of Industry Intermodal Facility (UP)	City of Industry	Los Angeles
San Bernardino Intermodal Facility (BNSF)	San Bernardino	San Bernardino

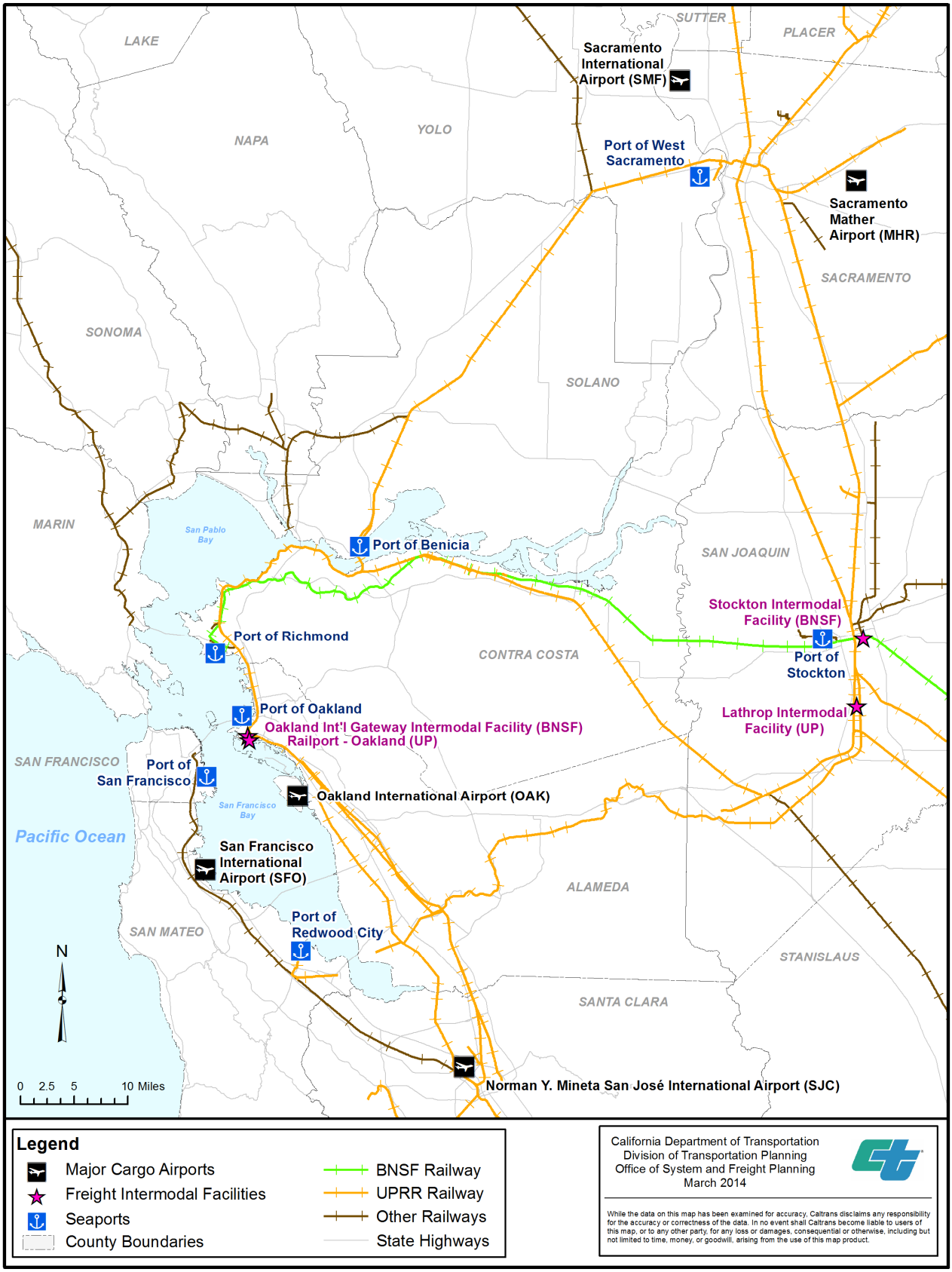
Major Cargo Airports
Bob Hope (Burbank) Airport (BUR)
Fresno Yosemite International Airport (FAT)
Los Angeles International Airport (LAX)
Long Beach Municipal Airport (LGB)
Sacramento Mather Airport (MHR)
Oakland International Airport (OAK)
LA/Ontario International Airport (ONT)
San Diego International Airport (SAN)
San Francisco International Airport (SFO)
Norman Y. Mineta San Jose International Airport (SJC)
Sacramento International Airport (SMF)
John Wayne / Orange County Airport (SNA)

Seaports
Port of Long Beach
Port of Los Angeles
Port of San Francisco
Port of Oakland
Port of Richmond
Port of West Sacramento
Port of Benicia
Port of Redwood City
Port of Hueneme
Port of San Diego
Port of Stockton
Port of Humboldt Bay

Ports of Entry	Route	County
Otay Mesa	905	San Diego
Otay Mesa East (future)	11 (unconstructed)	San Diego
Calexico East	7	Imperial
Tecate	188	San Diego

Source: Caltrans DOTP

Figure 2-1.11: California Major Freight Facilities – San Francisco Bay Area and Delta Region



Source: Caltrans DOTP

Figure 2-1.12: California Major Freight Facilities – Southern California

Source: Caltrans DOTP

Seaports

Seaports are the lynchpin of California's international trade. They are California's freight gateways to the world. The State Multimodal Freight System includes all 12 deepwater seaports that can accommodate transoceanic vessels, including two inland ports that have access to the ocean via the Sacramento/San Joaquin Delta: the Ports of Stockton and West Sacramento (see Table 2-1.5 and Figures 2-1.10 though 2-1.12). Each port has different navigable channel and berth depths so the sizes of ships and ship draft that can be accommodated vary by port. Eleven of the ports are publically owned and one, the Port of Benicia, is privately owned. All of the ports, with the exception of the Port of Humboldt, utilize on-dock or near-dock rail infrastructure in conjunction with their terminal operations.

Table 2-1.5: California's 12 Deepwater Seaports

Seaport	Channel Depth	Acres	Rail Access	Highest Value Exports	Highest Value Imports
San Diego	42 feet	6,000*	On-Dock	Machinery, Metals, Autos/Parts, Heavy Equipment, Food Products	Vehicles, Perishables, Construction Materials, Heavy Equipment
Long Beach (POLB)	76 feet	3,200	On-Dock	Petroleum Coke and Bulk, Waste Paper, Chemicals, Scrap Metal	Crude Oil, Electronics, Plastics, Furniture, Clothing
Los Angeles (POLA)	53 feet	4,200	On-Dock	Wastepaper, Animal Feeds, Scrap Metal, Cotton, Resins	Furniture, Apparel, Automobile Parts, Electronic Products
Hueneme	35 feet	375	Near-Dock	Autos, Produce, General Cargo	Autos, Produce, Liquid Fertilizer, Bulk Liquid
Redwood City	30 feet	120	On-Dock	Iron Scrap	Aggregates, Sand, Gypsum
San Francisco	38-40 feet	1,000+	Near-Dock	Tallow, Vegetable Oil	Steel Products, Boats/Yachts, Wind Turbines, Project Cargo, Aggregate, Sand
Oakland	50 feet	1,210	Near-Dock	Fruits and Nuts, Meats, Machinery, Wine and Spirits	Machinery, Electronics, Apparel, Wine and Spirits, Furniture
Richmond	38 feet	200	Near-Dock	Vegetable Oils, Scrap Metal, Coke, Coal, Aggregate, Zinc, Lead	Autos, Petroleum (crude/refined), Bauxite, Magnetite, Vegetable Oils
Stockton	35 feet	2,000	On-Dock	Iron Ore, Sulfur, Beet Pellets, Coal, Wheat	Liquid Fertilizer, Molasses, Bulk Fertilizer, Cement, Steel Products, Ammonia
Benicia	38 feet	645	On-Dock	Petroleum Coke	Automobiles
West Sacramento	30 feet	480	On-Dock	Agricultural and Industrial Products	Agricultural and Industrial Products
Humboldt Bay	38 feet	-----	N/A	Logs, Wood Chips	Logs, Petroleum, Wood Chips

*Acreage includes land and water.

Source: DOTP California Port Factsheets and SCAG Regional Goods Movement Plan

Figure 2-1.13: Container Ship at Port

Source: Caltrans DOTP

The four largest deepwater seaports in California are Los Angeles, Long Beach, Oakland, and San Diego. Of these four seaports, only the Port of San Diego is not considered a container port as it specializes in other cargo including break bulk, bulk, heavy equipment, and roll-on/roll-off cargos. All four seaports are included within the top 30 United States Containership Ports in 2011 (see Table 2-1.6).

Table 2-1.6: California's Four Top Ranking Containership Ports for North America 2011
(Thousands of TEUs)

Port	Rank	Total	Export	Import
Los Angeles	1	6,011	1,954	4,057
Long Beach	2	4,318	1,294	3,024
Oakland	5	1,539	799	740
San Diego	26	52	2	49
Total Top-4		11,920	4,049	7,870

Source: Rita Freight Statistics 2013

The Port of Los Angeles, number one in national container volume, and the Port of Long Beach, number two in national container volume, together make up the largest container port complex in the United States. They are often referred to as the San Pedro Bay Ports. In 2010, these two ports, combined, were the world's eighth busiest port complex by container volume (SCAG 3-17). These seaports have sufficient depths to accommodate the largest vessels currently in operation and even larger vessels that are being developed. The remaining eight deepwater seaports are smaller in size and scale, specializing in the transport of specific types of sea cargo such as dry bulk, break bulk, liquid bulk, construction materials,

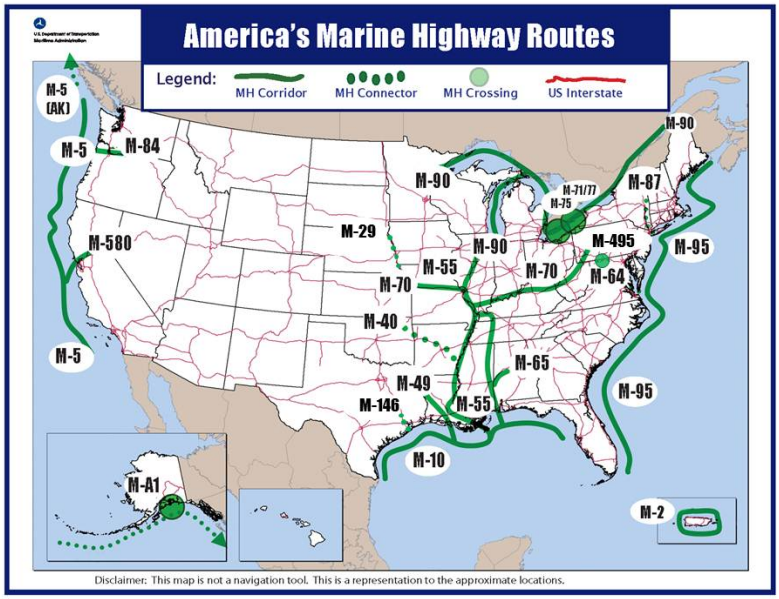
Figure 2-1.14: Ports of Los Angeles and Long Beach

Source: Caltrans DOTP

fresh fruit and produce, automobiles, or other commodities. Table 2-1.5 contains some key characteristics of each seaport.

California's seaports are extraordinary multimodal places that have a tremendous mix of public and private entities, each with its own set of industry responsibilities. This requires efficient interaction between the public and private sectors to meet the needs of the port as a whole. The strength of California's seaports depends on a complex public private partnership approach for investment in both capital and operational improvements within the seaport complex, including consistency with many of the environmental mitigations that are required by the California Air Resources Board (CARB) and other control agencies (see Chapter 1-4). Generally, these seaports are owned by public port authorities, with long term leases given to terminal operators who act as the third party between freight shippers and landside freight trucking and freight rail operations. This requires a tremendous amount of coordination among all of the parties involved, and all parties must work together toward improvements in efficiency and productivity to minimize delays in the supply-chain, stay competitive in both the national and global economies, and to seek to eliminate the environmental and community impacts of freight from these critical freight facilities. For detailed information about each seaport please see the Port Factsheets contained in Appendix X.

Figure 2-1.15: Marine Highway Routes



Source: U.S. DOT, Maritime

Consistent with the America's Marine Highway Program developed by the United States Department of Transportation's Maritime Administration (MARAD), California has been exploring the use of Marine Highways which allow freight to be shipped between ports and harbors using navigable waterways instead of landside Interstate and highway facilities. Utilizing these marine highways will ultimately reduce the amount of truck trips on already congested parallel highways, and further reduce freight related greenhouse gas (GHG) emissions in order to help meet California's GHG reduction targets set by CARB (see Chapter 1-4). Within California there are two Marine Highways, the M-580 and the M-5 (see Figure 2-1.15). The M-580 Marine Highway Corridor is already in use and carries shipments of

containers and bulk goods between the Ports of Oakland, Stockton, and West Sacramento. MARAD, along with the western states of California, Oregon, and Washington, is working with the seaports, harbors, and a variety of freight stakeholders to fully develop the M-5 Marine Highway Corridor to help alleviate freight movements and congestion along Interstate 5 from the California–Mexico border region in San Diego to the United States–Canada border north of Seattle, Washington.

Airports

There are more than 200 airports that participate in the movement of airfreight in the state of California. Air cargo is shipped both domestically within the United States and internationally to global markets. Air cargo is usually high-value and time sensitive. The amount and value of freight transported through each airport differs dramatically. The California Multimodal State Freight system includes the 12 busiest cargo airports by volume as detailed in Table 2-1.7 and depicted in Figures 2-1.10 through 2-1.12.

Table 2-1.7: 12 Leading Cargo Airports in California by Volume (Metric Tons)

Code	Airport	City	Total Cargo Tonnage 2011	Total Cargo Tonnage 2010	Percent Change
LAX	Los Angeles International Airport	Los Angeles, CA	1,688,351	1,819,344	-7.2%
OAK	Oakland International Airport	Oakland, CA	499,365	510,598	-2.2%
SFO	San Francisco International Airport	San Francisco, CA	381,887	432,488	-11.7%
ONT	Ontario International Airport	Ontario, CA	378,727	379,486	-0.2%
SAN	San Diego International Airport	San Diego, CA	128,282	120,453	6.5%
SMF	Sacramento International Airport	Sacramento, CA	65,326	66,659	-2.0%
BUR	Burbank (Bob Hope) Airport	Burbank, CA	46,259	45,131	2.5%
SJC	Mineta San Jose International Airport	San Jose, CA	39,946	44,783	-10.8%
MHR	Sacramento Mather Airport	Sacramento, CA	37,331	37,481	-0.4%
LGB	Long Beach Airport	Long Beach, CA	25,609	25,816	-0.8%
SNA	Santa Ana (John Wayne) Airport	Santa Ana, CA	14,296	13,474	6.1%
FAT	Fresno Yosemite International Airport	Fresno, CA	10,000	8,749	14.3%
	Total - Top 12		3,315,379	3,504,462	-5.4%

Source: California Air Cargo Groundside Needs Study and listed sources

Figure 2-1.16: Loading of Air Cargo

Source: Caltrans DOTP

As indicated in Table 2-1.7 above, many of California's largest cargo airports saw negative growth from 2010 to 2011. The exceptions were SAN, BUR, SNA, and FAT. The total cargo tonnage transported by the top 12 cargo airports declined by 5.4 percent overall. "The key challenges facing California's air cargo include modal shifts to trucking, addressing the air freight leakage to other states, the shifting of manufacturing from Asia back to North America (and Europe), and the Panama Canal expansion"(Air Cargo Study). Four of California's busiest airports are listed in the top 30 cargo airports for North America. Table 2-1.8 identifies these airports and their rankings:

Table 2-1.8 California's Four Top Ranking Cargo Airports for North America 2011

Airport	Rank	Airport Code	City	Total Cargo (tons)
Los Angeles International Airport	5	LAX	Los Angeles, CA	1,681,611
Oakland International Airport	13	OAK	Oakland, CA	483,375
San Francisco International Airport	17	SFO	San Francisco, CA	382,019
LA/Ontario International Airport	18	ONT	Ontario, CA	378,782

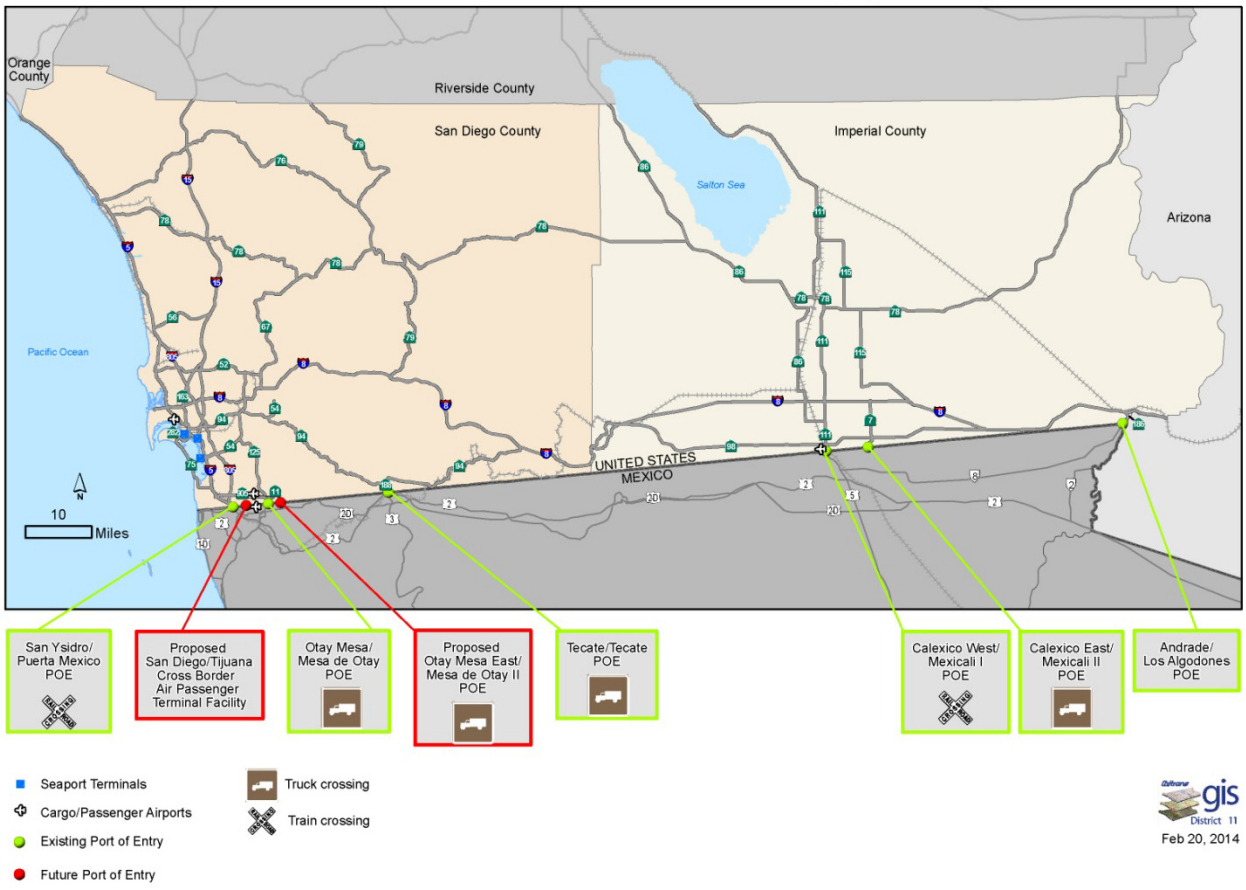
Source: California Air Cargo Groundside Needs Study and listed sources

"The numbers indicate that the 12 airports at which cargo activities are currently focused should have the individual capacity to address their own future cargo growth. Although some new development or redevelopment will eventually be needed, there are no specific projects currently identified by the airports as critical to accommodating long-term cargo growth" (Air Cargo Study). While the capacity of California's largest cargo airports appears to be able to handle modest increases in freight movement in the near-term, the importance of ground transport of freight to and from the cargo airports is a key consideration. Access to airport cargo facilities and transportation to nearby cargo handling and transloading facilities is accomplished via local roads. Many of these roads were not designed to accommodate 53 foot trailers and are located in dense, high traffic areas. It is expended that the most critical of these access roads will be included in the urban freight corridors which are set to be identified, pending FHWA guidance. For detailed information about each air cargo airport please see the Airport Factsheets contained in Appendix X and the Air Cargo Groundside Needs Study is posted on the Caltrans Freight Planning Website.

International Border Crossings

California and Mexico share over 130 miles of international border consisting of the southernmost portions of San Diego and Imperial Counties. According to the United States Census Bureau, in 2013, Mexico was California's top trading partner and the United States' 3rd largest trading partner (U.S. Census Bureau). The commercial land border points of entry (POEs) are the main arteries for freight movements between the two nations. California's multimodal state freight system includes all of the existing and proposed commercial land border POEs between California and Mexico, which include Otay Mesa (SR 905), Otay Mesa East (SR 11) a future commercial land border POE that is being developed, and Tecate (SR 188 and SR 94) in San Diego County; and Calexico East (SR 7) in Imperial County (see Figures 2-1.10 through 2-1.12 and 2-1.17).

Figure 2-1.17: California – Mexico Land Border Ports of Entry



Source: Caltrans District 11 GIS

The Otay Mesa POE in San Diego County and the Calexico East POE in Imperial County are the two main California-Mexico freight gateways. The Otay Mesa POE is the third busiest commercial land border POE on the United States-Mexico border by trade value and the busiest commercial land port in California. Some of the

commodities transported between the California and Mexico through the POE include pulp, paper, and allied products; electrical machinery, equipment, and supplies; automobiles and light duty trucks; and food and farm products. The future Otay Mesa East POE will be accessed on the California side by a tolled highway (SR 11) and is scheduled to be open in 2017. This new POE will help reduce freight and passenger traffic congestion at the Say Ysidro, Otay Mesa, and Tecate POE's, as well as provide additional capacity for future growth by providing a new alternative for freight operators traversing the California-Mexico border. These commercial land border POEs are discussed in more detail in Chapter XX of this report.

Intermodal Connections

Intermodal connections are an important consideration in the discussion of freight movement within California. These connections provide access to intermodal facilities where transloading of freight occurs between multiple modes, allowing for the least amount of handling and overall delay. Intermodal connectors are generally associated with airports, seaports, rail yards, and warehousing facilities where the transfer of freight is completed on-site. The access to and from these intermodal facilities is typically located along local roadways which connect to Interstate and State Highway freight corridors, and serve as the "last mile" for freight movement.

Often times these local arterials and roadways have not been designed to accommodate the largest combination vehicles and are not designated STAA routes, nor are they engineered to accommodate the amount of AADTT that exists on the roadway. Some of roadways have the highest AADTTs in the State. Many of the environmental and community impacts from freight can be most prevalent along these local intermodal connectors (see Chapter 1-4). There are approximately 29 freight intermodal connectors included in the draft expanded 41,000 PFN, and these intermodal connectors have been included in the Multimodal State Freight System (see Table 2-1.9). A table of the federally recognized National Highway System (NHS) intermodal connectors (including non-freight) within California is included in Appendix X.

Table 2-1.9: California's Primary Freight Network Intermodal Connectors

ID	Facility Name	Description	Centerline Miles
CA1A	Burbank - Glendale Airport	Thornton Ave. (Airport to Buena Vista), Buena Vista St. (Thornton to I-5).	0.88
CA29P	Port of Long Beach	Ocean Blvd (Port to SR-710), 9th/10th St (Santa Fe to Pico), Pico Ave (9th/10th to Ocean Blvd), Santa Fe (Anaheim to 9th), Anaheim St (Santa Fe to Alameda).	3.38
CA30P	Port of Los Angeles	Seaside Ave/Rte 47: LB City limit e/o Navy Way to beginning of Rte 47. N Front St: Rte 47 to John S Gibson Blvd. Harry Bridges Blvd/B: Figueroa St to Alameda St; Alameda St: Harry Bridges Blvd. ('B' St) to Anaheim St.	2.85
CA31P	Port of San Francisco	Cargo Way (Jennings to 3rd), 3rd St (Cargo Way to Cesar Chaez), Cesar Chavez St (3rd St to Rt 101) - (Cargo Way proposed). . .	2.10
CA32P	Port of Oakland	Maritime St (7th to W Grand Ave), W Grand Ave (Maritime to I-880), 7th St (Maritime to I-880). . .	1.96
CA33P	Port of Richmond	Harbour Way (Terminal to I-580). Canal Blvd (Terminal to I-580). .	1.85
CA34P	Port of Sacramento	Enterprise Blvd (Industrial Rd to I-80), Industrial Blvd (Enterprise Blvd to Harbor Blvd), Harbor Blvd (Industrial Blvd to US50). . .	0.40
CA35P	Port of Redwood City	Seaport Blvd. (Port to Rt. 101). Bloomquist St (seaport Blvd to Maple), Maple St (Bloomquist to Facility). .	1.26
CA36P	Port Hueneme	Hueneme Rd (Port to Los pasos), Los pasos (Hueneme to US 101). Ventura Rd (Hueneme to Channel Island), channel Island Blvd (Ventura to Victoria), Victoria Ave (Channel Island to US 101). .	20.45
CA37P	Port of San Diego	Pacific Hwy (Laurel to NSC Compound), Grape St (Pacific Hwy to I-5), Hawthorne St (Pacific Hwy to I-5), Broadway (Pacific Hwy to 11th), 11th St. (Broadway to I-5). .	3.13
CA39P	Channel Islands Harbor	Victoria Ave (Terminal to Rt. 101) mileage include in CA36P. . .	1.02
CA3A	Los Angeles Intl. Airport	Century Blvd (Sepulveda to I-405), Aviation Blvd (Century Blvd to I-105), La Cienega Blvd (Century to I-105), Imperial Hwy (La Cienega to Sepulveda), Sepulveda Blvd (Century to I-105), 104th St . . .	1.02
CA40P	Port of Benicia	Bayshore Rd. (Port to Park), Park Rd. (Bayshore to Industrial), Industrial Way (Park to I-680). . .	2.30
CA41P	Port of Stockton	Harbor St (Terminal to Fresno), Fresno Ave (Harbor to Navy), Navy Dr (W Washington to Charter Way), Charter Way (Navy to I-5), @ Washington St (Navy to Fresno). . .	1.28
CA4A	Oakland International Airport	Airport Dr (Hegenberger to Doolittle), Hegenberger Dr (Doolittle to I-880), 98th Ave (Airport Dr to I-880). . .	1.04
CA5A	Ontario International Airport	Archibald Ave (Airport to Rt. 10). Vineyard Ave (Airport to Rt. 10). .	1.06
CA60R	Fresno TOPC Rail Yard	North Ave. (Facility to Rt.99). . .	0.50
CA61R	Long Beach (Carson) Rail Yard	Sepulveda Blvd. (Facility to Rt. 47). . .	0.70
CA62R	Oakland Rail Yard	Middle Harbor Rd (7th St to I-880). . .	1.18
CA63R	Lathrop Rail Yard	E Roth Rd (Lathrop Rail Yard IFC Airport Way to I-5), Airport Way (E Roth Rd to French Camp Rd), French Camp Rd (Airport Way to Rte 99). . .	4.21
CA64R	LA (Nr. Union Station)	Lamar St (Station to N Main), N Main St (Lamar to Daly), Daly St (N Main to N Mission), Mission Rd (Daly to I-5). Ave 20 (N Main to N Broadway), N Broadway (Ave 20 to I-5). .	1.54
CA65R	Richmond Rail Yard	Canal Blvd. (Facility to Rt. 580). . .	0.18
CA66R	LA ATSF Rail Yard	Washington Blvd (Hobart Yard to I-710). Shelia St (Arrowmile to Atlantic), Atlantic Blvd (Shelia to Bandini), Bandini Blvd (S Downey to I-710) - Connector 2 is proposed). .	1.41
CA67R	Stockton Rail Yard	Anderson St (Facility to Diamond St), Diamond St (Anderson to Mariposa Rd), Mariposa Rd (Diamond St to Rte 99), Charter Way (Diamond St to Rte 99). . .	1.59
CA68R	San Bernardino Rail Yard	2nd St (I-215 to Mt Vernon), Mount Vermont (4th St to Rialto), 4th St (Mt Vernon to 5th), Rialto Ave (Mt Vernon to Sidewinder Mountain Rd). . .	1.73
CA69R	City of Industry Rail Yard	Azusa Ave (Anaheim-Puente Rd to SR 60), (Anahein - Puneta Rd to Arenth Ave). Fullerton Rd (Arenth Ave to SR 60). .	0.99
CA78R	UPS - Richmond Terminal	Atlas Rd (Facility to Richmond Pkwy), Richmond Pkwy (Atlas to I-80). . .	1.83
CA7A	Lindburgh Field - San Diego	N. Harbor Dr. (Terminal to W. Laurel St.), W. Laurel St (N. Harbor Dr to I-5). . .	1.56
CA8A	San Francisco Intl. Airport	San Bruno Ave (US 101 to Airport Entrance). . .	0.61
Totals			
Intermodal Connectors		Centerline Miles	
28		64.01	

Source: FHWA 41K PFN Intermodal Connectors Table

Native American Roadway Network

The 2010 United States Census reported 362,801 American Indians residing in California (includes Alaska Natives) (US Census, 2010). This includes notable populations in every county within the State. There are 110 federally recognized Tribes in California. These are sovereign nations with jurisdiction over their respective Tribal lands. The Indian Reservation Roads (IRR) program, established in 1928, funds maintenance, construction, and improvement of IRR routes that do not receive state funding through federal-aid funding (CA IRR Tech Report).

Currently, FHWA is assigned oversight of the IRR program and is responsible for determining available funding to allocate to the Bureau of Indian Affairs (BIA) for projects on the IRR system (CA IRR Tech Report). Many of California's Tribal lands are accessed from or served directly by the SHS, including routes identified within the State Highway Freight Network. Future study is needed to determine what role the IRR system plays in the movement of freight to and from the Tribal lands of California, identify which IRR routes, or portions of routes, are already on California State Freight Highway Network, to collect goods movement data on the IRR system, and to determine how the IRR system supports freight movement within the California as a whole. For more information regarding the Tribal freight issues please see Chapter 1-5 of this report.

Pipeline Network

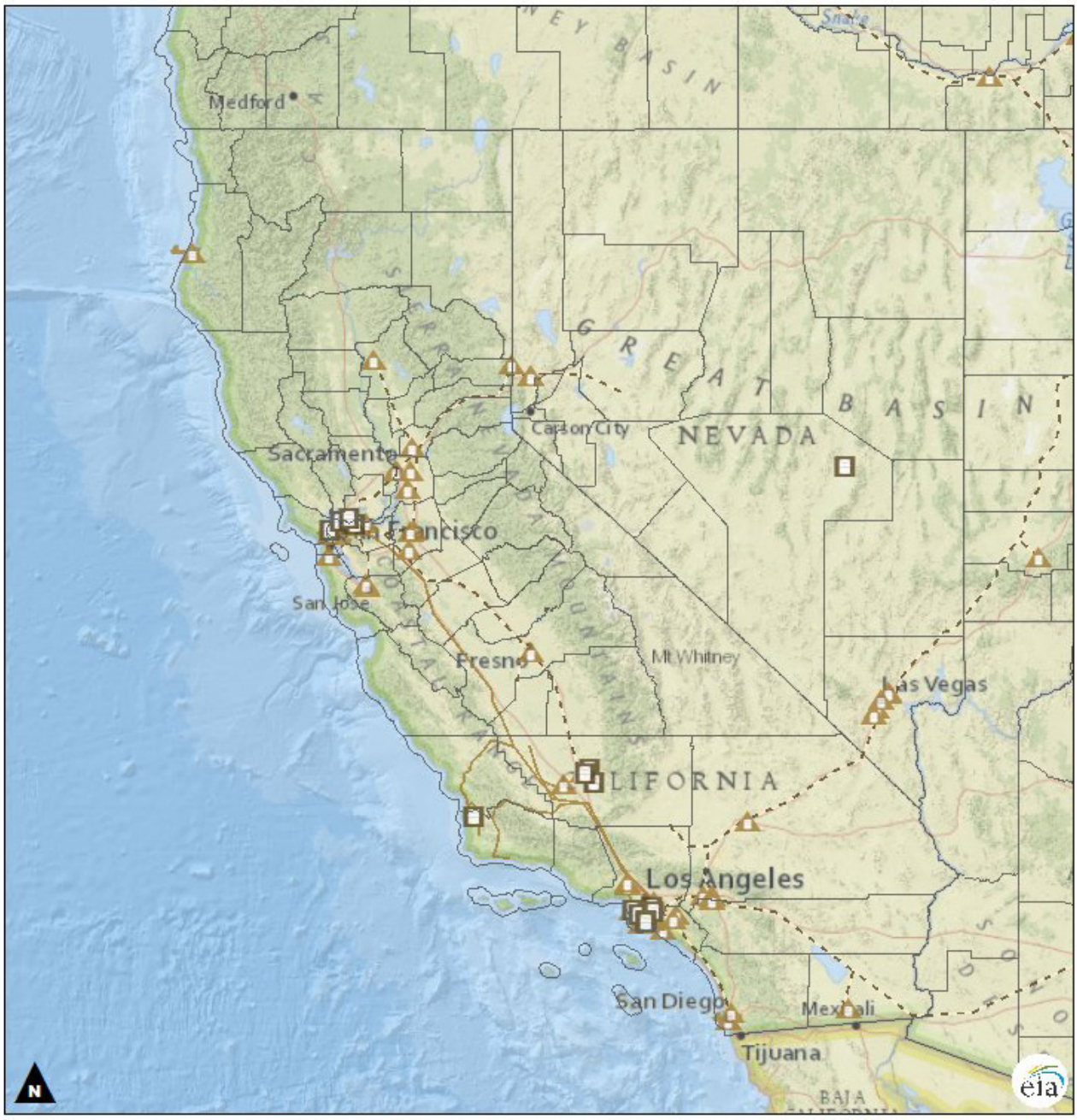
The United State Energy Information Administration (EIA) reports that California is one of the Nation's top producers of crude oil and ranks third in petroleum refining capacity, accounting for approximately one-tenth of the United States production and refining capacity. California's crude oil and refined petroleum network consists of crude oil and petroleum product pipelines, refineries, terminals, and petroleum ports (see Figure 2-1.18). The crude oil pipelines connect California's production areas to the refining centers in the Los Angeles, the Central Valley, and the San Francisco Bay Area. These refineries are then connected through petroleum product pipelines to refineries and terminals throughout the United States. To meet the demand within California, refineries are increasingly dependent upon foreign crude oil imports from countries like Saudi Arabia, Ecuador, Iraq, and Columbia, accounting for approximately half of the refined crude oil in the State. Most gasoline imports into California enter through by ship via the ports of Los Angeles and San Francisco.

According to the EIA, California is second in the nation in the use of natural gas. California's natural gas is largely delivered through the Western Region Natural Gas Pipeline Network (see Figure 2-1.19). The main conduits of natural gas to California are the El Paso Natural Gas Company system and the Transwestern Pipeline Company

system in the southern regions of the State, and the Gas Transmission Northwest Company's interstate system in the northern regions of the state. The southern region systems originate in Texas and parallel each other as they traverse New Mexico and Arizona to deliver large portions of their capacity to the California's largest natural gas companies at the California eastern border. The northern region system delivers Canadian natural gas through Washington and Oregon to California's northern border. California's natural gas network consists of pipelines, along with the processing plants, terminals, and storage facilities that support the transportation of this important energy resource. In 2012, the estimated natural gas gathering and transmission pipeline mileage in California totaled approximately 11,996 miles (PHMSA). The intrastate transportation and distribution of natural gas in California is dominated by three main providers, the California Gas Transmission Company (PG&E) (3,477 miles), the Southern California Gas Company (SoCal) (1,887 miles), and the San Diego Gas and Electric Company (EIA).

Future study is needed to determine which elements of the pipeline network should be included in the California Multimodal State Freight System. Figures 2-1.18 and 2-1.19 depict California's crude oil and petroleum pipelines and facilities, and the natural gas pipelines and facilities.

Figure 2-1.18: California Oil and Petroleum Pipelines and Facilities



Source: EIA Interactive GIS Mapping

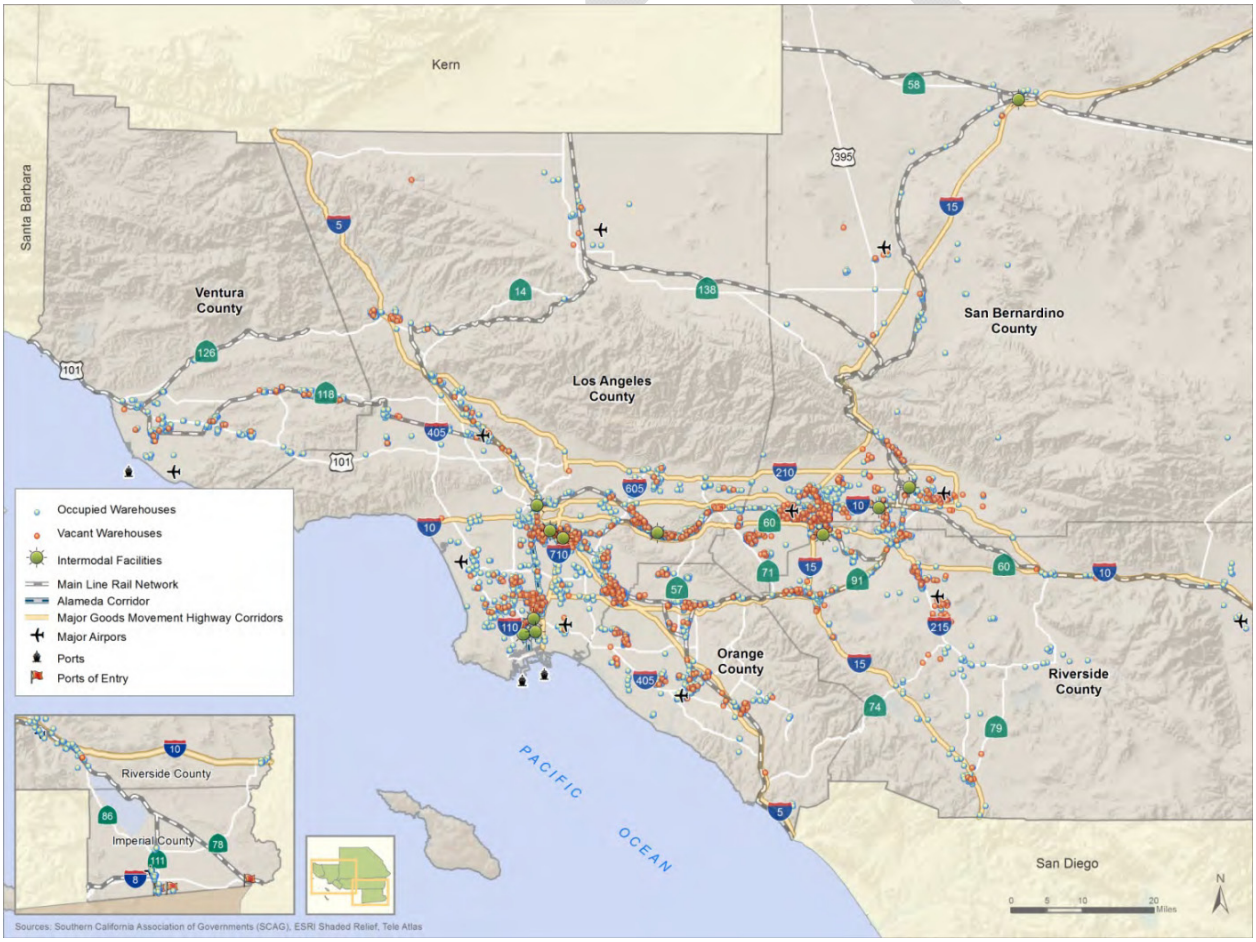
Figure 2-1.19: California Natural Gas Pipelines and Facilities

Source: EIA Interactive GIS Mapping

Warehousing and Distribution Facilities

"Warehousing and distribution facilities have become an increasingly important component of the global supply chain infrastructure and the integration of these facilities with the rest of the goods movement infrastructure is critical to supply chain performance" (SCAG 3-27). The warehousing and distribution sector is particularly important to freight movement in Southern California as the region contains a comprehensive warehousing and distribution network, occupying sizable land area in the region, approximately 1.46 billion square feet of existing warehousing land (79.6 % occupied and 20.4% available) and approximately 836 million square feet of warehousing facilities (82.9% occupied and 17.1% available) (SCAG Table 3.4, 3-29). Figure 2-1.20 depicts the occupied and available warehousing in the Southern California Association of Governments (SCAG) Region.

Figure 2-1.20: Occupied and Available Warehouses in the SCAG Region



Source: SCAG Regional Goods Movement Study Figure 3.20

"These facilities provide a variety of functions, including cargo storage, cross-docking, and value added services (such as sorting, labeling, tagging, etc.)" (SCAG 3-28). While the lion's share of California's warehousing and distribution activities occur in Southern

California, specifically in the areas in close proximity to the POLA and POLB, further east in the inland empire (San Bernardino and Riverside Counties), and near the border POE near the California-Mexico Border, significant facilities occur in other parts of the State as well.

Within the San Joaquin Valley (SJV), employment growth is expected within freight movement industries, with some of the highest rates of growth being anticipated in the transportation/warehousing sector. "While traditional goods movement-dependent industries such as agriculture and manufacturing will continue to be important, the high growth in sectors such as transportation/warehousing and utilities indicates continuing diversification of the SJV economy and the important role that goods movement will play in this transformation" (SJV GMP).

The California Multimodal State Freight System does not include specific warehousing and distribution regions or centers. Because the warehousing and distribution sector is essential to supporting the efficient movement of freight within and through the State, and the success of these sectors directly impacts the economic competitiveness of the State and the Nation, the CFMP recommends that a statewide assessment of warehousing capacity and distribution be conducted and its findings be included in the next State freight plan or as an amendment to this plan.

California's Multistate Corridor Efforts

California is participating in some key multistate, multimodal corridor initiatives that include planning and implementation of corridor management and operational strategies aimed at effective and efficient movement of freight and passengers. These multistate, multimodal efforts seek to plan for, manage, rehabilitate, and operate these corridors collaboratively, while aiding in identification of funding for capital and operational improvements throughout the corridors. These efforts consist of the Interstate 15 (I-15) Mobility Alliance, the West Coast Corridor Coalition, the M-5 Marine Highway Corridor, and the Interstate 80 (I-80) Corridor System Master Plan.

Interstate 15 Mobility Alliance

The Interstate 15 (I-15) Mobility Alliance is a multistate cooperative alliance between California, Nevada, Arizona and Utah which has developed a long range multimodal transportation system master plan that addresses current and future mobility needs along the I-15 corridor. The alliance includes public and private entities which seek to find multimodal solutions for improving the movement of people and freight along the corridor (I-15 Mobility Alliance webpage). The I-15 corridor is important for goods movement within California, and for transporting freight from Southern California's International Gateways to the eastern United States. The I-15 Corridor System Master Plan identifies emerging technologies and integrated corridor management approaches

which allow the partnering states to work collaboratively, including enhancing communications between Traffic Management Centers and Traffic Operation Centers, to find mobility solutions for freight movement that benefits the entire corridor (I-15 CSMP). The I-15 Mobility Alliance received funding under the Multistate Corridor Operations and Management (MCOM) program to help execute the I-15 Dynamic Mobility Project (I-15 DMP) which "seeks to obtain, exchange, and disseminate real-time data on all segments of I-15 and all modes, to create a seamless ITS backbone from San Diego to the Utah/Idaho Border" (Multistate I-15 Dynamic Mobility Project Webpage). This project is currently in the second phase of implementation.

Figure 2-1.21: Multistate I-15 DMP Corridor

Source: Multistate I-15 Dynamic Mobility

West Coast Corridor Coalition

Within the United States, Interstate 5 (I-5) extends from San Diego near the California–Mexico border, passes through Oregon and Washington, and ends at the Washington–Canada border north of Seattle, Washington. The West Coast Corridor Coalition (WCCC) is a multistate coalition of public, private, and non-profit organizations in Alaska, Washington, Oregon, and California. The purpose of the Coalition is to encourage freight systems approaches, optimize the capacity and performance of the existing systems, advocate for the West Coast's role in freight movement at a national level, and identify funding and financing options for mobility and operational improvements for freight throughout the corridor (WCCC website). In 2008, the WCCC finalized the "West Coast Corridor Trade and Transportation Study" to inform decision makers about the economic importance of the I-5 Corridor, and in 2010 released a Business Plan and the "Clean, Green and Smart Best Practices Manual" (WCCC website).

Marine 5 Highway Corridor

The Marine 5 (M-5) Highway Corridor is a multistate partnership between California, Oregon, and Washington. Together, these states are working with seaports, harbors, and a variety of freight stakeholders in all three states to fully develop a marine highway corridor that will help alleviate freight movements and congestion along Interstate 5 from

the California–Mexico border in San Diego to the United States–Canada Border north of Seattle, Washington. Additional discussion on the M-5 Highway Corridor is located in the Seaports section, pg. 19.

Interstate 80 Corridor Coalition

Interstate 80 (I-80) is a transcontinental route that traverses the entire west/east between San Francisco, California and ends in Teaneck, New Jersey. The I-80 Corridor Coalition is a multistate partnership between California, Nevada, Utah and Wyoming, extending from San Francisco, California to Cheyenne, Wyoming. The Coalition is developing a I-80 Corridor System Management Plan (I-80 CSMP). Through coordinated efforts, the plan seeks to identify current and future mobility and operational solutions to transportation deficiencies, and enhance livability throughout the corridor. The effort includes a Freight and Logistics working group which seeks to "thoroughly investigate all issues relevant, important, and actionable regarding the topic of freight mobility and the I-80 corridor" (I-80 CSMP webpage). The Corridor Coalition, through the I-80 CSMP, is working collaboratively with the I-80 Winter Operations Coalition to coordinate operations on the I-80 corridor in the Western United States, including the use of emerging technologies and integrated corridor management approaches to enhancing communications between Traffic Management Centers and Traffic Operation Centers, and improve capabilities to deploy real time weather information for freight transportation operators.

Figure 2-1.22: I-80 Corridor Master Plan Extent

Source: I-80 MCOM Grant Application

The I-80 Corridor Coalition was awarded funding under the Multistate Corridor Operations and Management (MCOM) program to help execute an operations platform to allow multiple states access to real-time and operational winter travel information, distribute multistate road impact information to truckers, and enhance corridor coalition partnering and activities. The Coalition will attempt to leverage current technology investments within the corridor and synergize with other multistate efforts such as the I-15 Mobility Alliance (I-80 MCOM application).

Chapter 2-1 Figures and Tables

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