

# APPENDIX B-6-7: SAN DIEGO AND IMPERIAL COUNTIES

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## INTRODUCTION

The San Diego and Imperial Counties Region Summary covers an area as far south as the United States-Mexico International Border, and from coastal, urban San Diego east across the rural Imperial Valley to the State’s border with Arizona. Bordered on the north by Riverside and Orange Counties, it is located immediately south of the Southern California Region. For Caltrans purposes, this is the District 11 region.

The region covers approximately 8,383 square miles and has a total estimated population (2013)<sup>1</sup> of 3.35 million with an employment base of approximately 1.33<sup>2</sup>million jobs. With about 5.4 percent of the total California land area, the International Border Region is home to approximately 8.8 percent of the State’s total population. The population is ethnically diverse and growing. San Diego County has 18 incorporated cities, among which is the City of San Diego, the second largest city in the State. Imperial County has seven cities and is a highly productive agricultural area. As shown in Table 1, the population density is much heavier in San Diego County; with the urban areas predominantly on the western side of the county within 50 miles of the Pacific coast.

**Table 1. Border Region Population Distribution by County (2010)<sup>3</sup>**

County	Population		Land Area		Persons per sq. mi.
	Number	% of region	Sq. mi.	% of region	
San Diego	3,177,063	94.7	4,206.63	50.2	735.8
Imperial	176,528	5.3	4,176.60	49.8	41.8
Region Total	3,353,591		8,383.23		390

San Diego and Imperial Counties interact with five Baja California municipalities – Tijuana, Playas de Rosarito, Ensenada, Tecate, and Mexicali) – along their shared, 150-mile border, which has six international land ports of entry (described in more detail below). In addition to the highway system and POEs, the region has Class I railroads, one deepwater seaport - the Port of San Diego, pipelines, and a major international airport - San Diego International Airport. The region’s seaport and proximity to the U.S.–Mexico Border contribute greatly to the region’s role as a link in international trade and global supply chains

Goods movement corridors, including highways, pipelines, and rail lines, facilitate the circulation of goods between producers and consumers located on both sides of the border. The integration of production and distribution processes across the California-Mexico Border contributes to strong economic interdependencies. Goods movement in the border region contributes to a highly blended economy. Additionally, the growth in international trade not only benefits the regional economy, but the national economy as well.

<sup>1</sup> U.S. Census Bureau: 2013 Census.

<sup>2</sup> U.S. Bureau of Labor Statistics: (2012).

<sup>3</sup> U.S. Census Bureau: 2010 Census.

Based on the 2012-2013 California Agricultural Statistics Review (California Department of Food and Agriculture), Imperial County's agriculture production ranks ninth in the State for value at \$1.9 billion, moving up from the ranking eleventh in 2011. Top commodities include cattle, heifer and steers; leaf lettuce, alfalfa hay, head lettuce and broccoli. Alfalfa hay and Sudan grass are exported from this region to Asia via the Ports of Los Angeles and Long Beach (Border Valley Trading.) The Imperial County Farm Bureau estimates that the counties' agriculture production in 2011 generated an estimated \$1.175 billion in personal income for California families, with an estimated \$5.3 billion in total economic impact. Furthermore, in 2012, Imperial County farmers produced 1,736,000 tons of hay, including alfalfa, Bermuda grass, Sudan grass and Klein grass hays, making the region a vital producer of food for the state's vast dairy and cattle industry.

## **REGIONAL TRANSPORTATION PLANNING**

San Diego County and its incorporated cities are represented by the San Diego Association of Governments (SANDAG). Imperial County is one of the six counties in the Southern California Association of Governments (SCAG) region, the nation's largest metropolitan planning organization; it is also represented by the Imperial County Transportation Commission (ICTC).

The International Border Region is located in the San Diego Air Basin, which includes San Diego County, Imperial County, and a portion of Riverside County to the north. In San Diego County, SANDAG is the regional planning agency responsible for ensuring transportation conformity with the federal air quality requirements. Imperial County and portions of Riverside County are in the Salton Sea Air Basin.

San Diego County is classified as maintenance for the 1997 8-hour ozone standard of 0.08 parts per million (ppm). San Diego County submitted a Redesignation Request and Maintenance Plan for the 1997 Nation Ozone Standard in December 2012. Effective April 4, 2013, U.S. EPA found that the motor vehicle emissions budgets for ozone for the years 2020 and 2025 are adequate for transportation conformity purposes.

U.S. EPA has promulgated the 2008 ozone standard of 0.075 ppm. On May 21, 2012 the U.S. EPA classified San Diego County as marginal nonattainment. For this nonattainment designation, tribal areas that were previously excluded are now included as part of the San Diego region nonattainment designation. However, one small portion (approximately 119 acres) of the Pechanga Band of Luiseno Indians purchased within the north portion of San Diego County piece of tribal land was excluded from the San Diego region 2008 Eight-Hour ozone nonattainment designation. All other tribal lands within San Diego County were included in the designation. As of July 20, 2013 the 1997 ozone standard was revoked and replaced with the 2008 ozone standard.

Imperial County attained the 1997 8-hour ozone standard of 0.08 ppm in 2008. However the U.S. EPA has promulgated the 2008 ozone standard of 0.075 ppm. On May 21, 2012 the U.S. EPA classified Imperial County as Marginal Nonattainment with an attainment year of 2015. As of July 20, 2013 the 1997 ozone standard was revoked and replaced with the 2008 ozone standard.

Imperial County is classified as nonattainment/Serious for PM<sup>10</sup> as of August 3, 2004. The two reasons for PM<sup>10</sup> exceedances are transport from Mexicali, Mexico (especially In the Calexico area) and occasional high wind activity.

Imperial County is classified as attainment for the Annual and 2006 PM<sup>2.5</sup> except in a small area of the county including Calexico which is classified as nonattainment for PM<sup>2.5</sup>. On July 8, 2010 U.S. EPA published a limited approval and a limited disapproval of proposed controls of Fine Particulate Matter (PM<sup>2.5</sup>). Highway sanctions, based on this limited disapproval began on August 9, 2012. Imperial County

Air Pollution Control District (ICAPCD) adopted revisions to the disapproved Rules No. 800, 804, 805, and 806, to correct deficiencies identified in our limited disapproval action. The State (California Air Resources Board) submitted these revisions to U.S. EPA on November 7, 2012. The Interim Final determination to stay the sanctions was published in the Federal Register on January 7, 2013, and the Final determination was published on March 26, 2013.

For the purposes of this summary, a number of regional transportation planning documents and other studies were selected for review. The source documents are identified at the end of this document.

## **GOODS MOVEMENT GATEWAYS, CORRIDORS, HUBS, AND FLOWS**

### **Major System Components**

Summarized below are the major components of the International Border Region freight transportation systems.

#### **Key Gateways and Corridors**

##### **Land Ports of Entry**

There are currently six Land Ports of Entry (POE) within the International Border Region. A new POE is under development and several are undergoing expansion and improvement. The Otay Mesa and Calexico East POEs currently handle 97 percent (by value) of all border commercial shipments. Currently, 78 percent of all cross-border trade is destined for locations outside of the International Border Region. Approximately 57 percent of truck trips have origins or destinations in other counties within California, while more than 21 percent have origins or destinations in other states within the United States (U.S.) or international locations (GMAP Phase I, 2005; p. V-3 through p. V-17).

**San Ysidro/Puerta Mexico POE.** The GSA describes the San Ysidro POE as “the world’s busiest Land Port of Entry” or the “busiest land border crossing in the Western Hemisphere.” By any description, it is a busy land POE, serving pedestrians, passenger vehicles, buses, and freight rail. Located between San Diego and Tijuana, the San Ysidro POE has 24 northbound vehicle lanes into the United States and six southbound lanes into Mexico. In 2012, San Ysidro POE handled 68,194 buses, 11,484,951 personal vehicle passengers, and 8,134,479 pedestrians. This POE does not process commercial vehicles. The main vehicle access routes are Interstate 5 (I-5) and Interstate 805 (I-805).

The San Ysidro POE is undergoing improvements and expansion in phases, as managed by the GSA. The projects will increase the number of northbound inspection booths to 63. A new northbound inspection facility will be constructed, as well as primary vehicle inspection booths, a secondary inspection area, administration space, and a pedestrian processing facility. A new southbound inspection facility will also be developed, and Interstate 5 will be shifted to the west to align with Mexico’s planned use of a reconstructed entry facility at the vacant Virginia Avenue/El Chaparral commercial facility. A new pedestrian bridge was opened in April 2011. The 806-foot bridge, which replaced an existing bridge, spans I-5 and connects east and west San Ysidro.

**Otay Mesa / Mesa de Otay POE.** The Otay Mesa POE in San Diego County is one of the ten busiest land ports in the United States. It is the busiest commercial port on the California/Baja California border, handling the second highest volume of trucks and the highest dollar volume of trade among all U.S. land ports (GSA website). In 2012, Otay Mesa POE handled 769,886 trucks, 42,145 buses, 6,235,300 personal vehicle passengers, and 3,289,778 pedestrians. The POE has 13 commercial vehicle inspection stations, and processes approximately 70 percent of the trade between the U.S and Mexico. Major commodities

include electrical machinery and equipment, mechanical appliances, and apparel and clothing accessories. The main vehicle access route for the Otay Mesa POE is State Route 905 (SR-905).

The U.S. General Services Administration (GSA) is proposing a reconfiguration and modernization of the existing inbound passenger and cargo inspection areas to improve operational efficiency and meet current facility standards. However, further design and development is on hold pending Congressional funding approval.

**Proposed Otay Mesa East POE and State Route 11.** The cost for construction of the Otay Mesa East POE and State Route 11 (SR-11) is estimated to be \$700 to \$750 million. The facility, scheduled to open in 2015, will add border crossing capacity, 2.1 miles of a new, four-lane, tolled highway (SR-11), and a Commercial Vehicle Enforcement Facility. Otay Mesa East will help reduce traffic congestion at the San Ysidro, Otay Mesa, and Tecate POEs by providing a new border crossing alternative.

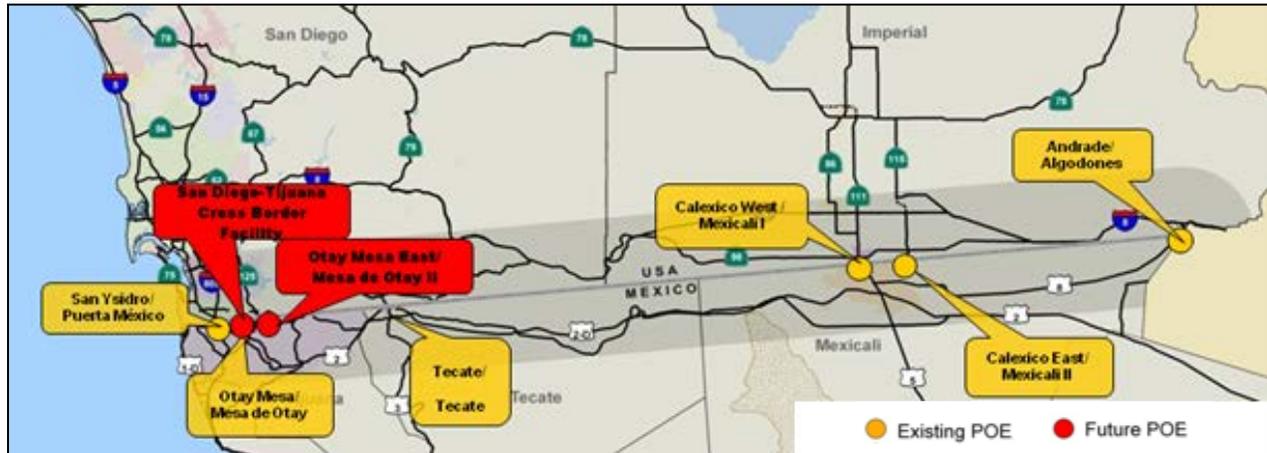
This project is a collaboration of Caltrans, the Federal Highway Administration (FHWA), the General Services Administration (GSA), U.S. Customs and Border Protection (CBP), and SANDAG. The planning process involved bi-national coordination, numerous studies, enabling legislation (Senate Bill 1486, 2008), an Environmental Impact Report/Environmental Impact Statement, and a Presidential Permit (issued by the Deputy Secretary of State in November 2008, authorizing the GSA to construct, operate, and maintain the POE facility).

**Calexico West / Mexicali I POE.** The Calexico West POE in Imperial County is a multimodal inspection facility that provides service for pedestrians, passenger vehicles, and freight rail. Located in downtown Calexico, it is the most important non-commercial POE in Imperial County. In 2012, Calexico West POE handled 4,070,090 personal vehicle passengers, and 4,885,868 pedestrians, resulting in substantial congestion at the POE and along State Route 111 (SR-111). The GSA and the U.S. Customs and Border Protection plan to reconfigure and expand this POE into the site of the former commercial inspection facility, which moved to the Calexico East POE in 1996.

The project will be implemented in two phases. The first phase will include the construction of a headhouse, ten of the project's 16 northbound POV inspection lanes, five southbound privately operated vehicle (POV) inspection lanes with temporary asphalt paving, and a bridge across the New River for southbound POV traffic. The second phase will include construction of the balance of the project, including the remaining six northbound POV lanes, southbound POV inspection islands, booths, canopies, concrete paving, an administration building, an employee parking structure, and a pedestrian processing building with 12 northbound pedestrian inspection stations.

**Calexico East / Mexicali II POE.** Connecting the Cities of Calexico, California and Mexicali, Baja California, the Calexico East POE is a multimodal facility that serves nearly all of the international truck traffic crossings in Imperial County. It has a full range of cargo-processing functions, including inspections, entry, collections, and verification. In 2012, the Calexico East POE handled 322,424 trucks, 2,564 buses, 3,016,974 personal vehicle passengers, and 318,599 pedestrians. The GSA and Caltrans are working together to identify low cost, high impact, expedited implementation of vehicular (passenger and commercial) capacity enhancing projects. Current project proposals include adding three new northbound truck lanes to double the capacity to a total of six new truck inspection lanes. The project also proposes to add six new northbound auto lanes for a total of 14 auto inspection lanes. All new lanes will be built with required security inspection technology. Canopies, concrete paving and related security/administration building improvements will also be added. The project concept also proposes to widen the bridge over the All American Canal to reduce delays caused by the current bottleneck. The POE is served by SR-7 and SR-98, connecting to I-8.

Figure 1. International Border Region Ports of Entry.



**Tecate/Tecate (State Route 188) POE.** Located in rural San Diego County about 40 miles east of downtown San Diego, the Tecate POE provides services for pedestrians, passenger vehicles, and commercial vehicles. A freight rail line crosses at Campo, east of Tecate POE. In 2012, Tecate POE handled 43,245 trucks, 110 buses, 773,647 personal vehicle passengers, and 702,742 pedestrians. The POE is served by SR-188, a two-lane facility extending 1.9 miles between the border and SR-94. Segments of SR-94 are not built for large trucks and lack passing lanes.

**Andrade/Algodones.** Located in Imperial County near I-8 and Yuma, Arizona, Andrade is a rural POE with minimal freight traffic. Andrade provides services for pedestrians, passenger vehicles, and commercial vehicles. This POE is mainly frequented by pedestrians from the U.S. visiting pharmacies or medical facilities in Algodones, Baja California.

### Highways and Other Roads

In 1993, California identified a NAFTA Network (NAFTA-Net) of critical transportation corridors serving trade and traffic through the land ports of entry between California and Mexico (D-11 Border Book, 2006). These NAFTA-Net corridors, together with the main access routes north to Los Angeles, make up the predominant elements of the highway transportation network serving the region. This includes north-south routes I-5, I-15, I-805, SR-905, SR-111, SR-7, and SR-186. I-5 is the predominant interregional truck route, although I-15 has seen considerable increases in truck volumes in recent years (GMAP Phase I, 2005; p. V-3 through p. V-17).

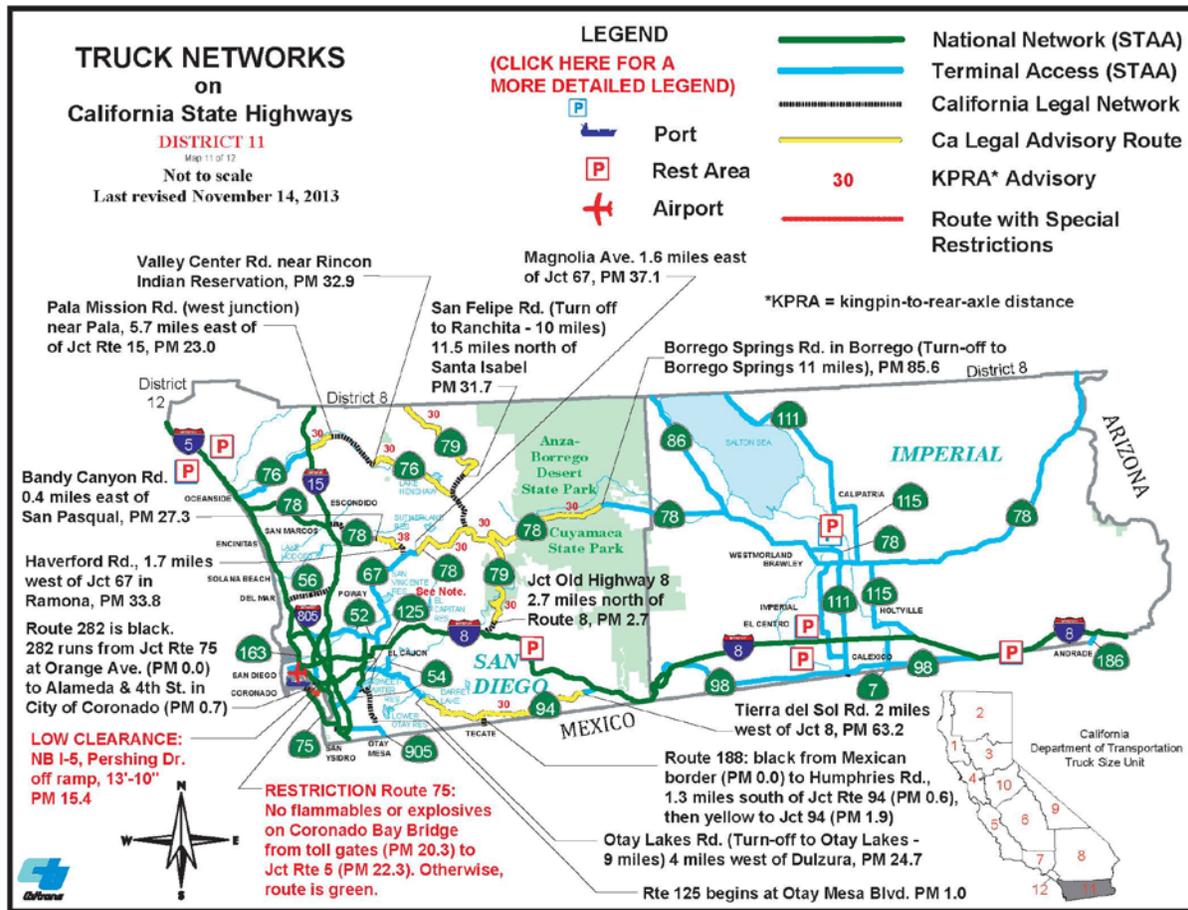
The Interstate highways in San Diego County are I-5, I-8, I-15, and I-805. State Routes included in the truck network, generally Surface Transportation Assistance Act (STAA) routes, include SR-52, SR-54, SR-56, SR-67, SR-78, SR-94, SR-125, SR-163, SR-188, and SR-905. With the exception of the I-8 corridor, goods movement flows are generally more north-south than east-west.

Primary goods movement routes connecting to the international crossings in Imperial County are SR-7, SR-111, and SR-186. Imperial County is also served by I-8, which extends from San Diego County to the Arizona state border. State Routes in Imperial County included in the truck network, generally STAA routes, include SR-7, SR-78, SR-86, SR-98, SR-111, SR-115, and SR-186. The Calexico-Coachella Cargo Corridor (C-4) is a major goods movement corridor providing movement for interregional, intra-regional, and international trips. The C-4 links the movement of goods from Mexico to Southern California and

the rest of the State. The C-4 corridor starts with SR-7 at the Calexico Port of Entry, continues on Interstate 8 near El Centro, turns north onto SR- 111, heads west on SR-78, continues on the SR-86 and connects with Interstate 10 in the Coachella Valley.

In 2012, over 1.1 million trucks crossed the California/Mexico border. Northbound truck crossings at the California-Baja California POEs are expected to reach more than 1.5 million in 2030. The overall increase in truck crossings between 2005 and 2030 represents an estimated growth of 36.4 percent (California-Baja California Border Master Plan, Caltrans 2008).

**Figure 2. Major Truck Routes in San Diego and Imperial Counties**



Source: Imperial County Long Range Transportation Plan, 2013 Update

**Seaports: Port of San Diego**

The Port of San Diego (Port), the only seaport in the region, is situated approximately 96 nautical miles southeast of the Port of Los Angeles and approximately 10 miles from the U.S.-Mexico border. The Port of San Diego is the first port in the U.S. for vessels coming from the west coasts of Mexico, Central America, and South America. It is the fourth largest of the 11 public ports in California. The port is governed by a seven-member Board of Port Commissioners, appointed by the City Councils of its five member cities, Chula Vista, Coronado, Imperial Beach, National City, and San Diego.

Two marine terminals are operated by the Port of San Diego, the Tenth Avenue Marine Terminal and the National City Marine Terminal at 24th Street. Combined, the terminals handle approximately 2.5 million

tons of cargo annually. The Tenth Avenue Marine Terminal processes fruit (Dole Fresh Fruit Company is a tenant) and other perishables. Steel used for shipbuilding, project cargo including alternative energy components, and bulk commodities such as sand, cement, fuel, and fertilizer are also processed at the terminal. The National City Marine Terminal imports automobiles and lumber. According to the Port of San Diego website, one in every ten imported cars on U.S. roadways enters the country through the National City Marine Terminal. The Port of San Diego generates more than \$3 billion in economic benefits for California (District 11 presentation). Freight shippers in San Diego County and Imperial County also make use of the San Pedro Bay Ports (Port of Los Angeles and Port of Long Beach) in the Southern California Region (Border Crossing Study, SCAG 2012) (Gateway Study, SANDAG 2010).

The Port of San Diego is also home to one-third of the U.S. Navy Pacific Fleet. It is designated by the Department of Defense as a strategic port, which may be called upon to support military activities, including the transport of military equipment. About 40 percent of the port's 6,000 acres of land and water is under the jurisdiction of the federal government, in the form of U.S. Navy and U.S. Coast Guard facilities. The Navy and other military operations support a large share of the region's economy.

In 2008, the Port developed a Green Port Program (to "achieve long-term environmental, societal and economic benefits through resource conservation, waste reduction and pollution prevention." (Green Port Program, <http://www.portofsandiego.org/environment/green-port.html>.) The Port has environmental sustainability goals in six areas – water, energy, air, waste management, sustainable development and sustainable business practices.

### **Air Cargo**

Air cargo within this region is handled by one major airport, San Diego International (SAN), and three smaller airfields, Brown Field Municipal, Tijuana International (both in the Otay Mesa area), and Calexico. SAN is the primary site for air cargo in the region. SAN is situated adjacent to the San Diego Bay, near downtown San Diego, west of I-5, and about 20 miles from Tijuana, Mexico. It is the busiest single-runway airport in the United States. SAN is ranked 37th nationally, and moves approximately 115,378 metric tons of cargo per year. It is served by four all-cargo airlines which fly nonstop to eight cargo destinations in the United States, with most flights going to Memphis, Tennessee (FedEx) and Columbus, Ohio (United Parcel Service/UPS).

Modest cargo growth is anticipated at SAN. The number of cargo operations is anticipated to grow more slowly due to a number of factors, including the trend toward increasing the size of aircrafts and the ability to carry more cargo per departure. To support larger aircraft and additional operations, cargo infrastructure will require upgrades and redevelopment in the next 10 years. Also, airfield capacity (e.g., constraints of the single runway) will begin to limit growth beyond 2030.

With land-use encroachment in all directions, expansion at SAN is limited, and relocation efforts have been unsuccessful to date. Terrain and obstacles around the airport limit aircraft payloads for some long haul international routes, but not domestic routes. SAN is open for arrivals 24 hours a day, seven days a week; however, a curfew exists for all departure flights between 11:30 p.m. and 6:30 a.m. This prohibition on nighttime takeoffs limits SAN's cargo expansion potential (see Caltrans Air Cargo Fact Sheet for SAN).

### **Freight Rail**

Rail carries a much smaller percentage of the freight than trucks in the International Border Region. In 2007, the value of freight transported by rail in the region amounted to less than 2 percent of overall

freight flows (Gateway Study, SANDAG 2010). However, mainline infrastructure, rail yards, and short line connections are still important and strategic to freight mobility in the region.

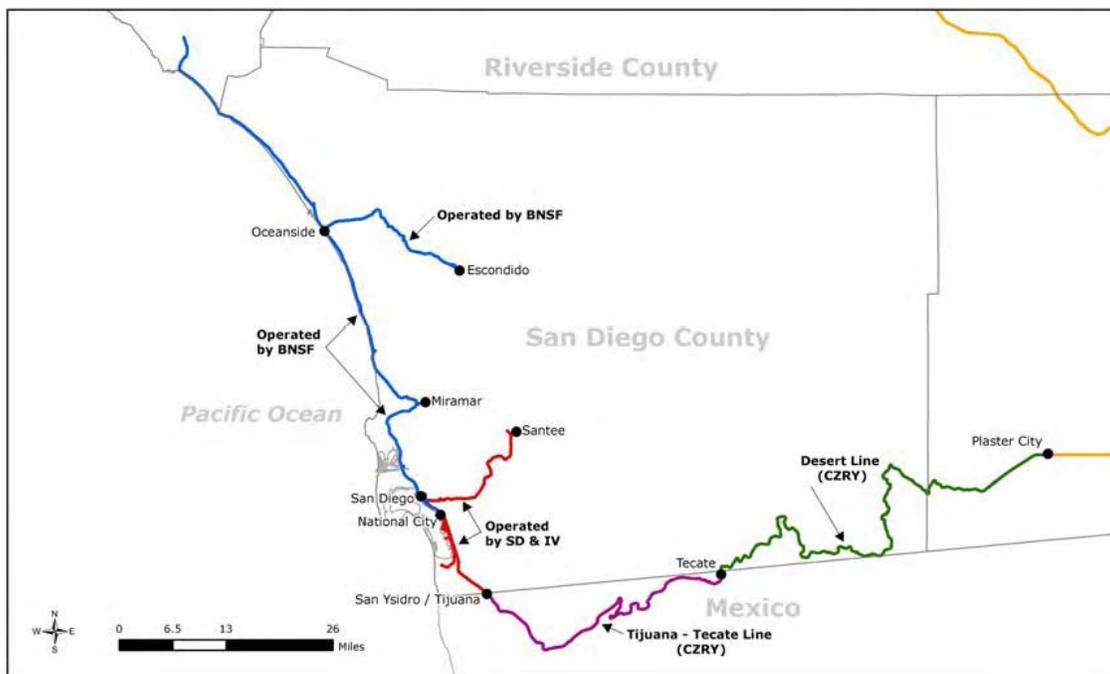
Two Class I railroads, BNSF Railway (BNSF) and Union Pacific Railroad (UPRR), operate within the region, as well as several short line railroads. Some of the freight system operates on lines owned by transit agencies. BNSF operates in San Diego County, and UP operates in Imperial County. Short line service connecting to the BNSF and UPRR (in California and Baja California) has seen a number of operator changes over the past decade.

In San Diego County, along the I-5 corridor, BNSF operates via a freight easement on 62 miles of coastal line owned by the North County Transit District (NCTD) and the Metropolitan Transit System (MTS). This line connects to the National City Marine Terminal on a segment owned by BNSF (Gateway Study, SANDAG 2010). BNSF carries imported automobiles (off-loaded at the Port of San Diego), lumber, and soda ash for export.

In the southern part of San Diego County, the San Diego and Imperial Valley Railroad (SDIV), a subsidiary of Genesee and Wyoming Inc. (formerly Rail America Inc.), operates two short lines owned by the Metropolitan Transit System (MTS). One line connects the Santa Fe Depot in downtown San Diego with the San Ysidro border crossing and freight yard. The other line runs east from the Santa Fe Station to the City of El Cajon (Gateway Study, SANDAG 2010).

In December 2012, the Metropolitan Transit System granted a 99-year lease to run the Desert Line, a freight line, to the Pacific Imperial Railroad Company. Currently, the line that runs from the border near Campo to Plaster City in Imperial County with a short portion in Mexico is not operating. Reconstruction of line has been estimated to run from \$50 million to \$140 million.

**Figure 3. Rail Lines in San Diego County and Baja California (Gateway Study, SANDAG 2010)**



Until fairly recently, the Carrizo Gorge Railway (CZRY) operated 114 miles of freight lines in California and Mexico. The railway owned the rights to operate limited service between the Mexican border at San Ysidro/Tijuana through Mexico to Division (near the Mexican border at Tecate) and then on to

Plaster City in the western part of Imperial County. The section between Tijuana and Tecate is owned by the Mexican government, while the section between Tecate and Plaster City is owned by MTS. Effective January 2012, Baja California Railroad (BJRR), by agreement with the CZRY, has operated the Tijuana-Tecate Line in Mexico; the right-of-way is owned by the State of Baja (Hoegemeier, pers. comm. Jan. 2013; 77 Fed. Reg. 160:49863, Aug. 17, 2012). Major commodities transported by BJRR include petroleum gases, propane, lumber, wood pulp, paper, corn syrup, lard, and yellow corn (BJRR website). The line between Division and Plaster City (Desert Line) is currently leased by the Pacific Imperial Railroad (PIR); however, this line is currently out of service due to bridge repairs (Hoegemeier, pers. comm. Jan. 2013; and Gateway Study, SANDAG 2010). The Desert Line is owned by the San Diego and Arizona Eastern Railway (Fed. Reg. 160:49863, Aug. 17, 2012).

Imperial County is served by rail connections to and from Riverside County, Baja California, and Arizona. Commodity flow volumes by rail account for about 3 percent of the total commodity flow volumes in the county. UPRR owns and operates the rail line coming south from Riverside County (Sunset Line route), as well as the line running north from the Calexico border crossing, extending north to El Centro, and connecting with the UPRR Sunset Line at Niland. UPRR also owns and operates the east-west line between Plaster City and El Centro (Border Crossing Study, SCAG 2012). A spur serves the mining operations north of Plaster City.

The San Diego and Imperial Valley Railroad (SDIY) provides connections with BNSF, UPRR, and (in Mexico) BJRR. SDIY operates freight service from El Cajon to a San Diego connection with BNSF, as well as to a San Ysidro connection with BJRR. SDIY meets UP in Plaster City via the PIR. Major commodities transported include propane, petroleum gas, corn syrup, malt, and wood pulp.

The Pacific Sun Railroad (PSRR) operates 62 miles of track in San Diego County. This short line railroad interfaces with BNSF at Stuart Mesa, serving customers near Escondido, Miramar, and San Onofre. PSRR transports corn, soy, lumber, plastic pellets, beer, paint, and recyclables.

## **Freight Movement**

### **Freight Movement Within and Through the Region**

Freight movement in the International Border Region is dominated by cross-border international trade (Border Crossing Study, SCAG 2012). Freight transportation systems in the region also connect the International Border Region with the Southern California Region. As is true elsewhere in the State, the primary mode of freight movement is commercial vehicles, and nearly all major highways in the region experience high truck traffic.

### **Major Freight Corridors**

For planning purposes, multimodal corridors can be identified on a regional or statewide level. These corridors generally have high volumes of freight moving on highways and rail lines. Additionally, there may be close connections to airports and facilities that generate freight traffic, such as warehouse areas, distribution centers, rail yards, and intermodal facilities. These multimodal corridors are useful for highlighting facilities where surface movement of freight is substantial, infrastructure is in heavy use, and needs are likely to be greatest. Also within these corridors are opportunities for multimodal connections and shifts between modes to help facilitate freight mobility. These higher volume routes are also typically connected to gateways – i.e., land ports of entry, seaports, and airports.

In this region, freight corridors accessing the international border crossings are especially important. I-15, I-805, SR-7, the new SR-11, SR-186, and SR-188 are among the important freight movement routes to and from the international border area. The corridor includes the BNSF service along the Los Angeles-

San Diego-San Luis Obispo (LOSSAN) rail corridor running north/south from the BNSF line through Orange County, in the vicinity and direction of I-5. Trucks also move freight from San Diego County and Imperial County north and out of the region to the Ports of San Pedro Bay (Los Angeles and Long Beach). For example, agricultural products such as alfalfa and Bermuda grass produced in Imperial County may be exported out of these ports. Routes important for this movement include I-5, I-8, SR-86, and others.

## **MODAL AND SYSTEM PERFORMANCE**

This section discusses major goods movement issues and trends, including factors potentially affecting transportation performance, major connections between goods movement and land use, including warehouse districts and effects on communities, gaps in systems and freight bottlenecks, and forecasts of freight demand and modal trends.

### **Goods Movement Trends and Drivers**

A number of key trends are anticipated to have significant impacts on the goods movement systems in the International Border Region. These factors, which may also affect other planning regions, include the following:

- Expansion of international trade, especially increasing trade with Mexico.
- Cross-border goods movement in the form of relatively short-distance, cross-border drayage.
- Continued dominance of truck transport of goods in the region.
- Regional and out-of-region transport of agricultural products.
- Population growth and increased regional demands for goods.
- General economic growth of the country, State, and region.
- Air quality issues, including the need to continue to make substantial efforts throughout the region (and adjacent regions) to reduce freight-related emissions, up to and including actions aimed at meeting zero-emission goals.

## **FREIGHT INFRASTRUCTURE NEEDS**

Below are possible strategies for future regional freight transportation improvement:

### **Efficient Cross-Border Movement**

In this region, cross-border international trade dominates freight operations. Truck traffic to and from Mexico is a significant economic driver. The Otay Mesa POE in San Diego County, for example, handles the second highest volume of trucks and the highest dollar volume of trade among southern U.S. land ports of entry. Maintaining and improving California-Mexico cross-border freight movement is an issue of national importance.

Studies over the past decade have recognized the need to maintain and improve POE facilities and access, as exemplified by the development of the new Otay Mesa East POE. Regional planning efforts have been directed toward highway projects that improve access to the POEs and improve the routes serving the cross-border traffic. Also part of international freight planning is the need to maintain and enhance productive international coordination with Mexican transportation agencies and stakeholders in order to identify and develop needed improvements.

## Dedicated Freight Transportation Systems

Regional transportation plans and studies suggest an existing and growing need for dedicated freight transportation facilities, such as managed truck lanes. Investments in managed truck lanes may provide public benefits in terms of safety and efficiency. Recently, SANDAG was awarded a Caltrans Partnership Planning Grant to conduct a study that analyzes different strategies for accommodating and managing trucks on the region's freeways. The overall study objectives are to conduct a broad feasibility analysis of different freeway operational strategies for trucks, including the use of Managed Lanes by trucks. Additionally, summarize truck data in the region, including general characteristics of regional truck travel, data gaps, and provide recommendations for additional truck data collection.

## Sustainable Expansion and Improved Use of Rail, Seaport, and Air Cargo Facilities

Expansion of rail yards, logistic centers, seaport terminals, and air cargo facilities may be needed to accommodate forecasted growth in freight demand. Current gateways tend to be bottlenecks of freight movement. Freight mobility in this region is nearing its limits, as the Interstate and State Highway System, POEs, rail, seaport, and airport systems approach capacity. Long-range plans by SANDAG and other agencies consider possible improvements in these areas. However, while expansion may be desirable for freight mobility, the highways, POEs, rail, seaport, and airport facilities are constrained by geography and existing land use patterns. Expansion of freight facilities in densely populated areas also tends to have negative effects on communities. To accommodate growth, new strategies and technologies may be needed. Facilities may need to be located outside the urban area. Air cargo operators, for example, may need to consider smaller cargo planes and multiple airfields.

## CHALLENGES, CONSTRAINTS, AND OPPORTUNITIES

The challenges, constraints, and opportunities for the International Border Region include the following:

- **Fostering international partnerships.** Port of entry projects and other bi-national planning initiatives provide evidence of successful cross-border planning between the U.S. and Mexico. Additional opportunities may exist for mutually beneficial initiatives and investments on both sides of the border.
- **Overcoming geographical and land use constraints.** Major facilities, such as San Ysidro POE, San Diego International Airport and the Port of San Diego, are constrained by geography and land use encroachments, making expansion difficult. Capacity may exist in other locations, which will not be without other constraints.
- **Meeting goals for air quality improvement and greenhouse gas reduction.** Alternatives to truck transport and diesel-powered engines are needed. Moving forward, opportunities may exist in terms of new technologies and innovative solutions via zero and near zero technology advancements. Intelligent Transportation Systems. The demand for technological solutions to reduce air pollution can be expected to become more aggressive, with interest in zero-emission and near-zero-emission engines.
- **Focusing on technological solutions.** There is a need to identify advanced technology opportunities to maximize operational efficiencies and minimize emissions.
- **Avoiding or minimizing environmental and community impacts.** Environmental considerations will continue to be part of the project planning and delivery process for this region. Existing and potential environmental constraints and community issues, such as, public health and safety, need to be considered in all planning strategies. Improving freight mobility, throughput, and volume will continue to affect some populations disproportionately. Freight infrastructure improvement projects are closely tied to air quality.

## Selected International Border Region Freight-Related Plans and Studies, 2006 – 2014

Name of Plan	Sponsor(s)	Date Issued	Internet URL
Goods Movement Border Crossing Study and Analysis	SCAG (prepared by HDR Decision Economics)	June 2012	(paper copy)
Our Region. Our Future. 2050 San Diego Regional Transportation Plan (RTP), including 2050 Goods Movement Strategy	SANDAG	October 2011	<a href="http://www.sandag.org/index.asp?projectid=349&amp;fuseaction=projects.detail">http://www.sandag.org/index.asp?projectid=349&amp;fuseaction=projects.detail</a>
San Diego RTP Technical Appendix 11: San Diego and Imperial Valley Comprehensive Freight Gateway Study	SANDAG (prepared by HDR Decision Economics, IHS Global Insight, Cambridge Systematics, SD Freight Consulting & Crossborder Group)	March 2010	<a href="http://www.sandag.org/index.asp?classid=19&amp;fuseaction=home.classhome">http://www.sandag.org/index.asp?classid=19&amp;fuseaction=home.classhome</a>
Imperial County 2007 Transportation Plan Highway Element	Imperial Valley Association of Governments (prepared by KOA Corporation)	May 2008	<a href="http://www.imperialcounty.net/ivag/ProjectBriefs/2007-20ImperialCountyTransPlan/ImperialCounty2007TransportationPlanFinalMay2008.pdf">http://www.imperialcounty.net/ivag/ProjectBriefs/2007-20ImperialCountyTransPlan/ImperialCounty2007TransportationPlanFinalMay2008.pdf</a>
Multi-County Goods Movement Action Plan (MCGMAP), including the San Diego County Action Plan	Metro (lead), with OCTA, RCTC, SANBAG, SANDAG, VCTC, SCAG, and Caltrans. Wilbur Smith Associates	April 2008	<a href="http://www.metro.net/projects/mcgmap/">http://www.metro.net/projects/mcgmap/</a>
California – Baja California Border Infrastructure Update	Caltrans District 11	April 2008	<a href="http://www.dot.ca.gov/dist11/departments/planning/pdfs/systplan/FlagReport_2008.pdf">http://www.dot.ca.gov/dist11/departments/planning/pdfs/systplan/FlagReport_2008.pdf</a>
Economic Impacts of Wait Times at the San Diego – Baja California Border	SANDAG and Caltrans District 11 (prepared by HDR/HLB Decision Economics, Inc. and others)	January 2006; updated 2007 and 2010	<a href="http://www.sandag.org/index.asp?projectid=253&amp;fuseaction=projects.detail">http://www.sandag.org/index.asp?projectid=253&amp;fuseaction=projects.detail</a> <a href="http://www.dot.ca.gov/dist11/departments/planning/pdfs/systplan/ImpactsOfBorderDelayFinalReport_January2010.pdf">http://www.dot.ca.gov/dist11/departments/planning/pdfs/systplan/ImpactsOfBorderDelayFinalReport_January2010.pdf</a>
California – Baja California Border Report	Caltrans District 11	March 2006	<a href="http://www.dot.ca.gov/dist11/departments/planning/index.htm#goodsmovement">http://www.dot.ca.gov/dist11/departments/planning/index.htm#goodsmovement</a>
San Diego Freight Rail: Options for Sustained Growth	John J. Hoegemeier	2005	<a href="http://sdfreightrail.com.p8.hostingprod.com/Other_Studies.htm">http://sdfreightrail.com.p8.hostingprod.com/Other_Studies.htm</a>
“Bottleneck Study” – Transportation Infrastructure and Traffic Management Analysis of Cross Border Bottlenecks	Caltrans District 11	November 2004	<a href="http://www.borderplanning.fhwa.dot.gov/bottleneckStudy/bottleRpt.pdf">http://www.borderplanning.fhwa.dot.gov/bottleneckStudy/bottleRpt.pdf</a>
Global Gateways Development Program	Business, Transportation and Housing Agency; Caltrans Office of Goods Movement	January 2002	<a href="http://www.dot.ca.gov/hq/tpp/offices/ogm/products_files/GDP_Final_Report.pdf">http://www.dot.ca.gov/hq/tpp/offices/ogm/products_files/GDP_Final_Report.pdf</a>

## RESOURCES AND ADDITIONAL INFORMATION

U.S. General Services Administration (Land Ports of Entry). <http://www.gsa.gov/portal/category/21521>

Caltrans Office of Freight Planning: <http://www.dot.ca.gov/hq/tpp/offices/ogm/index.html>

Caltrans District 11: <http://www.dot.ca.gov/dist11/>

Caltrans Office of Truck Services: <http://www.dot.ca.gov/hq/traffops/trucks/>

San Diego Association of Governments (SANDAG): <http://www.sandag.org/>

SANDAG RTP: <http://www.sandag.org/index.asp?projectid=349&fuseaction=projects.detail>

Imperial County Transportation Commission: <http://www.imperialctc.org/>

Otay Mesa East POE (Otay Mesa Chamber of Commerce): <http://www.otaymesa.org/featured-banner/sr-11otay-mesa-east-port-of-entry-project-update>

BNSF Railway: <http://www.bnsf.com/>

UP Railroad: <http://www.up.com/>

San Diego and Imperial Valley Railroad: <http://www.railamerica.com/railservices/sdiy.aspx>

Baja California Railroad: <http://www.bcrailroad.com/home>

Port of San Diego: <http://www.portofsandiego.org/>

