

# West Coast Corridor Coalition Trade and Transportation Study

## executive summary

*prepared for*

**West Coast Corridor Coalition**

*prepared by*

**Cambridge Systematics, Inc.**

*with*

HDR, Inc.  
Sarah Catz



West Coast Corridor Coalition  
Alaska • Washington • Oregon • California

## About the WCCC

**The West Coast Corridor Coalition (WCCC) advocates collaborative solutions to transportation system challenges on the West Coast Corridor.**

WCCC members represent the states of Alaska, California, Oregon and Washington.

Specific WCCC objectives are to:

- Develop and mutually support a roster of “projects of corridor significance” that serve the nation and the region.
- Share “best practices” in order to optimize the capacity and performance of the existing corridor system.
- Encourage joint effort and effective cooperation among West Coast state, regional and local governments and the private sector.
- Advocate for financing options to fund transportation system improvements serving the interests of the Coalition, including both additional funding and regulator changes.

[www.westcoastcorridors.org](http://www.westcoastcorridors.org)

# Executive Summary

The West Coast freight transportation system – seaports, airports, border crossings, and the highways and rail corridors that connect them to the region’s metropolitan areas – is a key element of the national and international supply and distribution chain, providing gateways for international freight shipments and connecting those gateways with major markets in the United States, Canada, and Mexico. However, this vital transportation network is being stressed by continued growth in freight volumes, driven by rapidly increasing Pacific Rim trade and the growing populations and economies of the Western region. This stress increasingly manifests itself in the form of capacity and congestion problems at key regional gateways, at important intermodal transfer facilities, and along critical highway and rail corridors. In addition, population growth is adding to the pressure on this already constrained infrastructure; it is becoming increasingly difficult to balance freight mobility needs with environmental, social, and financial concerns; there are rapidly rising infrastructure maintenance costs across all modes; and there is an increasing awareness that neither the public nor private sectors – acting independently – have the necessary resources to fully address rising transportation demands. Individually or collectively, these issues are eroding the efficiency and productivity of the region’s transportation system, leading to economic implications that will reverberate locally, regionally, nationally, and internationally.

Although individual states, metropolitan planning organizations (MPO), ports, and railroads within the West Coast region have examined these issues – and have in many cases identified statewide, metropolitan, or facility-specific solutions – there has been no systemwide examination of the freight-related needs and deficiencies in the West Coast transportation system as an integrated whole. Through completion of this West Coast Trade and Transportation Study, the West Coast Corridor Coalition (WCCC), a partnership of state departments of transportation (DOT), regional and local transportation agencies, ports, and related transportation organizations (both public and private) from Alaska to California, has begun to identify regional, systemwide issues and develop a foundation to allow the Coalition and its members address issues and chokepoints that cross jurisdictional, interest (i.e., public/private), and financial boundaries. The key findings of this study should be used by the WCCC and its members to develop an approach to planning for and investing in the region’s trade and transportation system that will help the West Coast stakeholders work collaboratively to ensure its continued efficiency, reliability, and sustainability.

## ■ Key Findings

*The West Coast region incorporates a system of land, sea, and air trade gateways and transportation corridors of regional and national significance and is the gateway of choice for Trans-Pacific Trade.*

The West Coast trade transportation system uniquely combines:

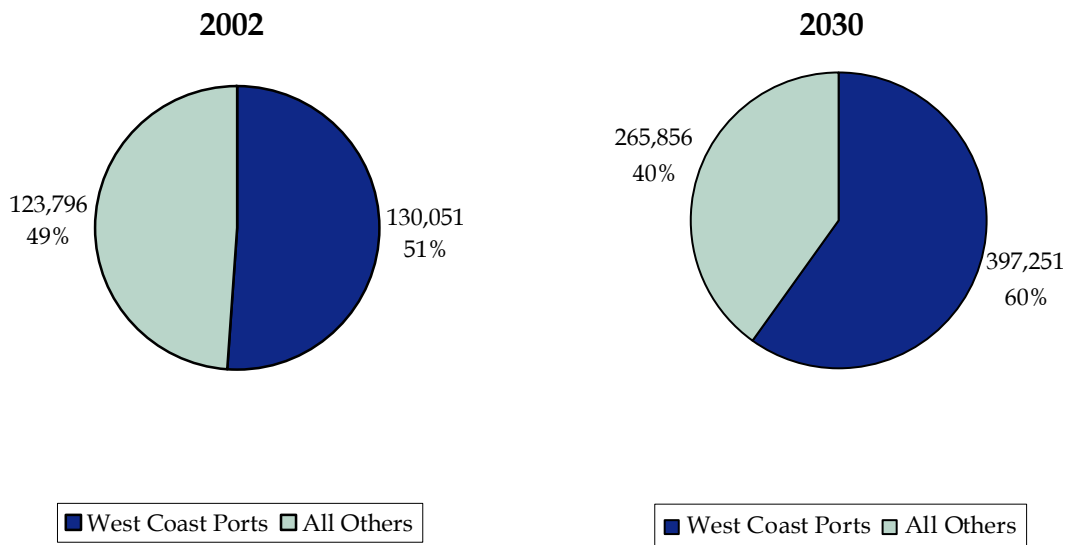
- The nation's largest international trade gateways (sea and air) supporting the fastest growing international trade lane (Trans-Pacific) and feeding the rest of the U.S. through major east-west highway, rail, and air corridors;
- A major north-south freight transportation system (border crossings, highway, and rail) connecting all three North American Free Trade Agreement (NAFTA) countries; and
- Megaregion trade flows supporting one of the fastest growing population and employment areas of the U.S.

This system converges in major metropolitan centers, with among the most severe congestion and air quality problems in the nation and traverses mountain passes and other topographic features that make it an extremely challenging system to manage.

Over the last decade, growth in demand for each of the major components of the West Coast trade transportation system underscores the national and regional significance of this system. West Coast seaports, led by Los Angeles, Long Beach, Seattle, Tacoma, and Oakland, handled over one-half of all containerized shipments entering and departing the United States in 2006. In the same year, the West Coast's airports handled nearly 8.4 million tons of overseas freight, accounting for 42 percent of the U.S. total. Since 1996, the West Coast has gained a larger share of both the nation's container and international air cargo shipments, further underlining the importance of the West Coast's port and air gateways to U.S. international trade. The West Coast's share of national container imports and exports grew from 47 to 52 percent from 1996 to 2006, an increase of 12.6 million containers. In the same time period, the West Coast's share of total international air cargo shipments grew from 34 to 42 percent, an increase of 2.0 million tons.

The West Coast is also the gateway of choice for rapidly growing Trans-Pacific Trade. Driven by rapid economic growth and industrialization in China, Malaysia, and other Asian nations, the volume and value of trade between Asia and the United States have been growing significantly. In addition, China is expected to have the largest economy in the world by 2050, which will further increase Trans-Pacific freight demand. Because of its geographic location, the West Coast handles the majority of this freight. As Figure ES.1 demonstrates, the West Coast ports handled just over one-half of all Asia-Pacific trade tonnage in 2002, or about 130 million tons. By 2030, this is expected to grow to approximately 397 million tons, representing 60 percent of all U.S. trade with Asia.

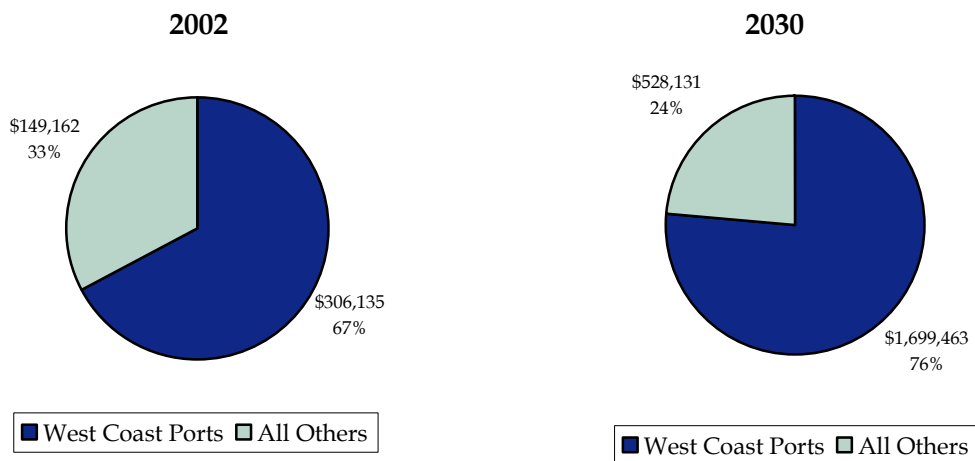
**Figure ES.1 West Coast Share of United States-Asia Trade by Weight**  
*2002 and 2030, In Thousands of Tons*



Source: FHWA Freight Analysis Framework (FAF).

Figure ES.2 presents the West Coast share of United States Trans-Pacific trade by value. In 2002, the West Coast seaports handled just over two-thirds of the value of U.S.-Asia trade. This equates to \$306 billion worth of goods. By 2030, the West Coast is expected to be processing 76 percent of the value of U.S. Trans-Pacific trade, representing nearly \$1.7 trillion of freight value.

**Figure ES.2 West Coast Share of United States-Asia Trade by Value**  
2002 and 2030, In Millions of Dollars

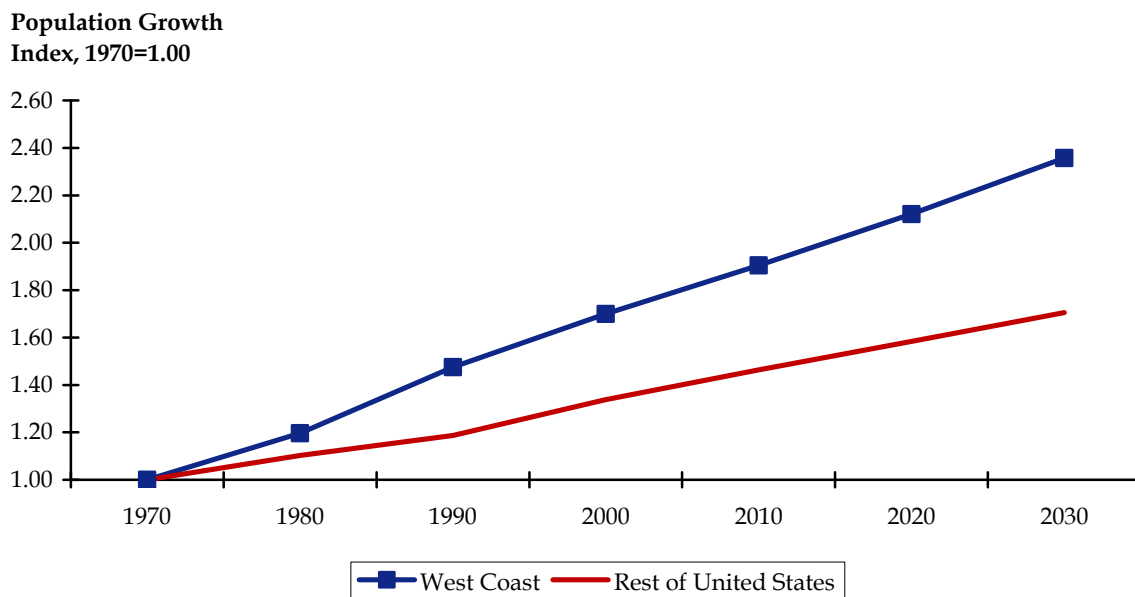


Source: FHWA Freight Analysis Framework (FAF).

Because the West Coast region is the gateway of choice for international shippers serving U.S. markets, the region's east-west transportation infrastructure handles the lion's share of overall freight shipments. However, in recent years, the region's north-south transportation infrastructure, with I-5 as its backbone, has emerged as a crucial trade corridor for both domestic commerce and international trade, connecting West Coast metropolitan areas and serving increasing volumes of NAFTA-related shipments.

These metropolitan areas are growing significantly. The West Coast, as a whole, absorbed about one-quarter of total U.S. population growth between 1970 and 2000, and this growth has been overwhelmingly concentrated in the region's urban areas. The region is expected to add over 13.5 million people during the next 24 years, and will reach a population of 60.8 million by 2030, as shown in Figure ES.3. Employment growth is expected to grow apace. Continuing growth at the region's international trade gateways, coupled with population and employment growth in the region's major metropolitan areas, is leading to concerns about the ability of the region's transportation system - east/west as well as north/south - to continue to provide safe, efficient, and reliable service for passenger and freight movements in the future.

**Figure ES.3 West Coast and National Population Growth Index**  
1970 to 2030



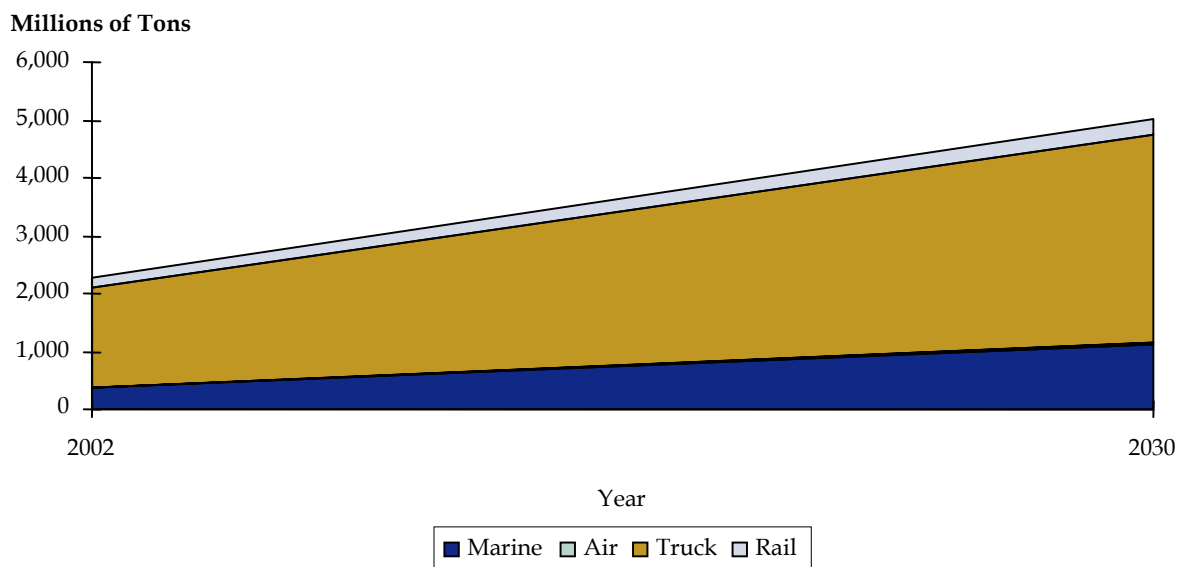
Source: U.S. Census Bureau.

*Physical, operational, and institutional issues in the region will not allow the trade and transportation system to absorb anticipated growth in freight demand.*

The overall freight demand to support the region's growing population and economy - both domestic and international - is expected to approximately double by 2030, as shown in Figure ES.4. By comparison, freight demand for the country as a whole is projected to grow by 71 percent.<sup>1</sup>

<sup>1</sup> FHWA Freight Analysis Framework (FAF).

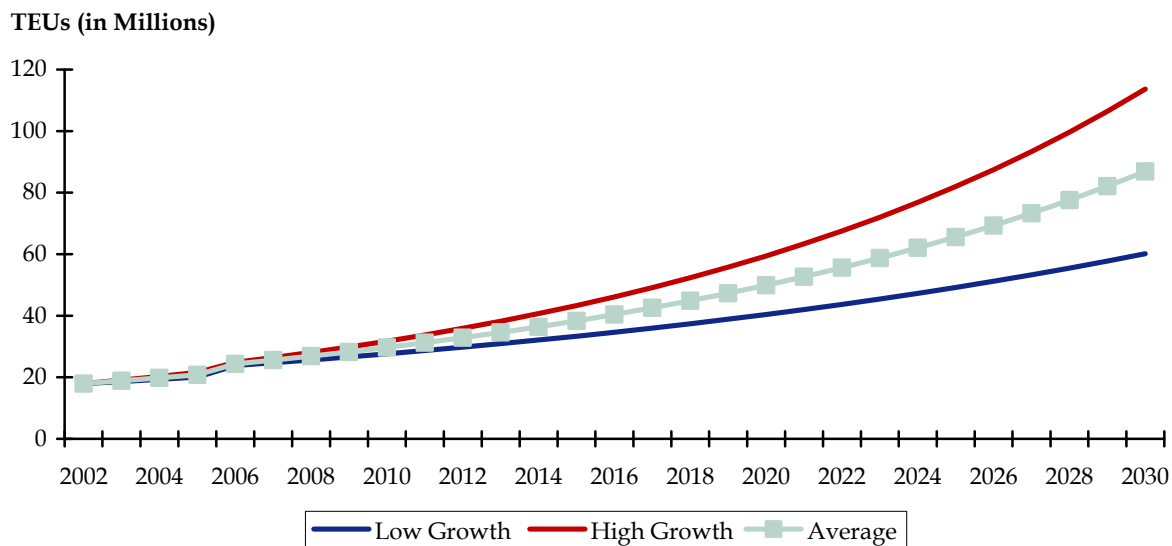
**Figure ES.4 West Coast Freight Demand**  
*All Modes, 2002 to 2030*



Source: FHWA Freight Analysis Framework (FAF).

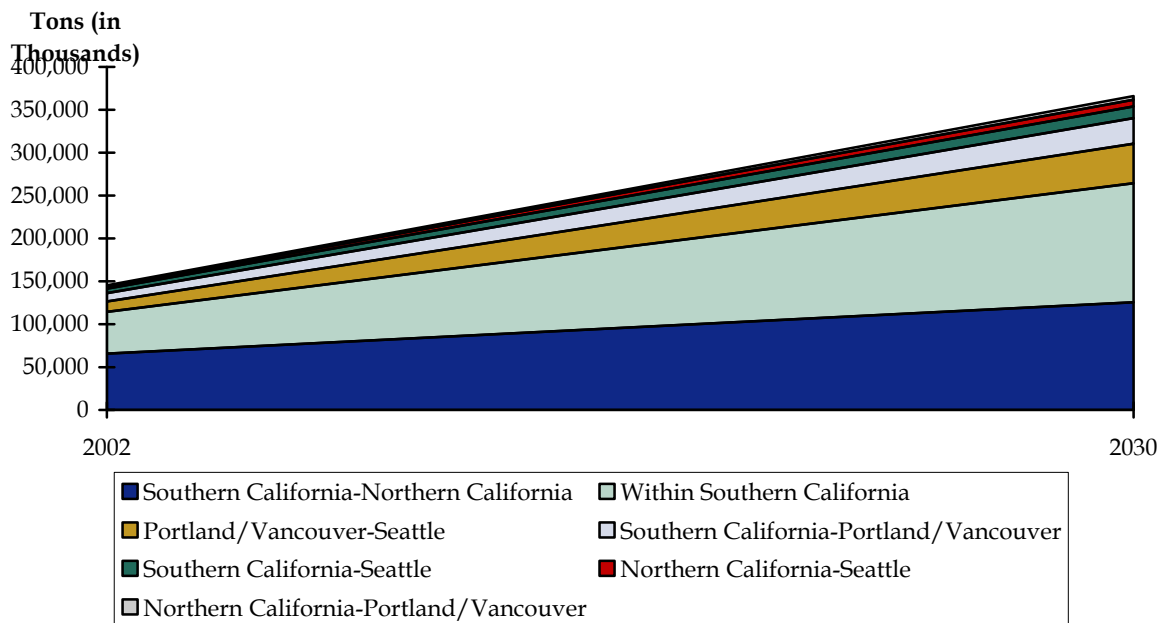
This growth will impact both east-west and north-south movements in the region. Overall, West Coast container volume (measured in 20-foot equivalent units (TEUs)) – many of which will move out of the region on the east-west network – will more than triple between now and 2030, as shown in Figure ES.5. Domestic freight shipments among the West Coast metropolitan areas (moving along the north-south network) are expected to grow from about 145 million tons to nearly 366 million in 2030, as shown in Figure ES.6.

**Figure ES.5 Container Movements at West Coast Seaports**  
2002 to 2030



Sources: Cambridge Systematics, Inc., and HDR.

**Figure ES.6 Domestic Trade Among West Coast Metropolitan Areas**  
2002 to 2030

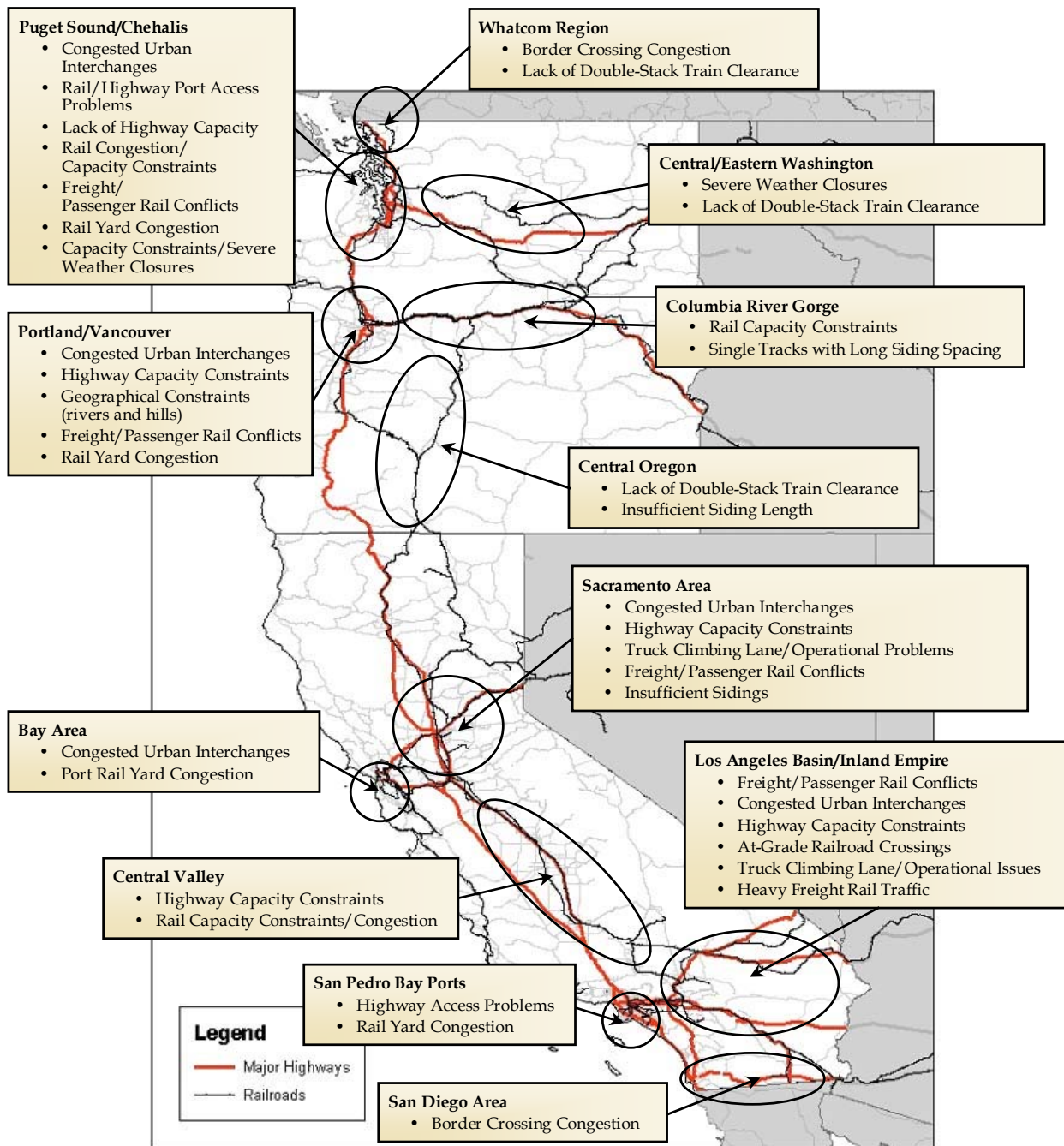


Source: FHWA Freight Analysis Framework (FAF).

Although the region's freight transportation system is managing existing demand, there are several physical, operational, and institutional issues that will, individually or collectively, hinder the ability of region's trade and transportation system from effectively serving this expected growth in freight traffic. The region's population and employment growth will be overwhelmingly concentrated in the region's urban areas; also home to many of the region's key international trade gateways. These growth patterns will make it difficult for the region to expand system capacity without significant environmental, social, and financial costs. Major chokepoints along the region's highway and rail systems – both east/west and north/south – already are impacting system reliability, constraining port growth and efficiency, and impacting international trade, as well as domestic trade among West Coast megaregions. And while operational and institutional strategies are being used effectively to mitigate the impacts of these physical chokepoints, this will become more difficult as freight demand continues to increase and as shippers continue to demand high-speed, high-quality, and highly reliable service. Figure ES.7 is a map of the region showing the locations and types of key freight system bottlenecks.

Continued growth in freight demand, coupled with the fact that the environmental, social, and financial costs of adding capacity to the system continues to rise, will require the physical, operational, and institutional issues affecting the West Coast region to be appropriately addressed. Not addressing regional chokepoints and issues will have significant impacts on the region's transportation system and economic competitiveness.

**Figure ES.7 Key West Coast Regional Bottlenecks**



## ■ Addressing These Challenges

Traditional approaches to planning and investing in the transportation system, which rely on states and metropolitan areas to identify and program improvements within their own jurisdictional boundaries, are not adequate to meet these challenges. Addressing these challenges will require a willingness to plan and fund freight system improvements across boundaries – the jurisdictional boundaries between West Coast states and MPOs, the interest boundaries between public agencies and the private-sector freight community, and the competitive boundaries among the region’s seaports and airports.

This report highlights the need for West Coast freight stakeholders to take a different approach to planning and investing in the West Coast trade and transportation system as discussed below.

### *Working with Federal partners to invest in nationally significant trade and transportation resources.*

It is clear that the West Coast trade and transportation system represents a nationally significant asset. The West Coast Corridor Coalition welcomes the emergence of a strong Federal role in partnering to protect and enhance this asset. Current Federal programs for gateway and corridor improvements have seen limited funding, and the range of Federal freight funding resources has been too diluted to tackle the costly problems facing the international gateway systems and trade corridors of the West Coast system. This report identifies a number of system chokepoints that would benefit from a strong partnership with the Federal government to invest in gateways and corridors of national significance.

### *Making targeted, system-level investments in the freight system across jurisdictional boundaries.*

Although state and local planning and funding strategies can be useful for making localized improvements to the region’s trade and transportation system, they are not well suited for identifying and funding improvements to the regional and national infrastructure issues facing the West Coast trade and transportation system, or placing state-level or facility-specific investment decisions in a regional or national context. Perhaps more so than many other regions, West Coast financing of transportation systems has become increasingly focused on local revenue sources, and freight investments reflect local priorities. While several states have taken bold steps to address multimodal freight system investment needs within their respective states (such as the California Trade Corridor Investment Fund and the Connect Oregon program), no such vehicles exist for multistate planning and programming.

Identifying, planning, and financing freight system improvements requires a regional or national approach; and investments must be made at the network level (i.e., capacity chokepoints along regionally significant trade corridors; at ports, airports, and intermodal terminals; and at urban rail or highway interchanges and connectors). Currently, there are

limited opportunities for states to work together to identify funds for these sorts of multi-jurisdictional, system-level improvements. Developing and implementing multistate planning and funding mechanisms to facilitate new innovative funding and project delivery options will require a strong Federal and state role.

***Promoting innovative approaches to congestion, both within and through major metropolitan areas.***

Congestion within the West Coast region's metropolitan areas not only impacts urban mobility, it also hinders regional and national economic competitiveness. Chokepoints in the West Coast region, most of which are located at urban interchanges, at access points to international freight gateways, and along urban bypass facilities, not only impact the efficient flow of goods within and among major metropolitan areas along the West Coast, they also impact the overall efficiency of freight movements accessing national markets. While congestion at these urban chokepoints will not completely shut down the West Coast trade and transportation system, they will have significant safety, efficiency, and economic impacts.

Promoting innovative planning, funding, and project development strategies that relieve this congestion – both within and through the major metropolitan areas of the West Coast – will be critical to helping the region absorb growth in freight traffic and drive regional and national economic vitality. Strategies such as the PierPASS Off Peak program at the San Pedro Bay ports, increasing interest in corridor-level ITS strategies, and pricing and user fee programs (such as tolled truck lanes) are gaining growing interest among the West Coast states. A coordinated approach and sharing of best practices could benefit all stakeholders in the region, and facilitate continued growth in freight traffic in the growing megaregion centers.

***Developing freight investment models that incorporate market and economic principles while ensuring environmental sustainability.***

Many states and MPOs along the West Coast have been investing significantly in a variety of freight infrastructure projects that have local, regional, and national benefits. However, existing institutional arrangements and funding strategies make it difficult for states and MPOs to identify logical packages of potential freight improvement projects; quantify their costs and benefits; and determine how costs, risks, and benefits should be shared among public and private freight stakeholders.

The nation needs new freight system investment approaches that reflect both public- and private-sector benefits of freight projects, are supported by performance metrics to ensure accountability, and are consistent with environmental and community needs will improve the ability of states, MPOs, and private-sector freight stakeholders to make targeted, appropriate investments in the West Coast trade and transportation system, and improve mobility for people and goods regionwide. West Coast states, MPOs, and ports are actively engaged in developing new approaches and supporting data systems to evaluate freight system performance improvements and prioritize investments. Partnership

opportunities with other multistate regions could benefit national efforts to gain greater adoption of these methods.

States, MPOs, ports, and special purpose authorities along the West Coast are experimenting with innovative financing, but there are obstacles. Public investment in private infrastructure is often prohibited by law, and approaches that blend public and private financing require clear delineation of public and private benefits and a nexus between cost responsibility and benefits. The analytical tools necessary to support these decisions and the appropriate public-private decision-making institutional arrangements should be funded and supported at the federal level to help ensure standardized adoption and implementation.

***Developing new approaches to balancing environmental protection and community interests with system expansion needs.***

Many gateway communities along the West Coast suffer the health and safety impacts of increasing trade volumes that serve national interests. While this trade activity also brings economic benefits to these communities, the appropriate balance between local and national benefits and these local impacts has been difficult to achieve. Community resistance to port and infrastructure expansion is increasingly the norm at West Coast gateways. Innovative approaches to environmental permitting, clean freight technology development, and new community participation models are all in the early stages of adoption along the West Coast. These efforts can serve as national models and should receive Federal support.