CHAPTER 1.1

VISION AND IMPLEMENTATION

California has the eighth largest economy in the world. The State's transportation system is the most extensive, least polluting, highest capacity, and most technically advanced multimodal freight transportation system in the United States. It handles the highest value international commerce of any state in the nation and among the highest total freight volumes. This unparalleled system connects California's international gateways to the rest of the country through several high-speed, high-capacity, multimodal gateways and corridors that provide access to every state in the nation. California is building upon these strengths to create an even more efficient, less-polluting, and higher-capacity freight sector to not just compete in the twenty-first century but to emerge as a global leader.

California's evolving freight system is focused on strengthening and preserving the existing system while making strategic improvements to increase mobility and safety while protecting communities and the environment. This will be accomplished by improving corridor mobility, strengthening intermodal connections, maximizing operational efficiencies, minimizing air pollutants and impacts to communities, enhancing safety and security, heightening the system's resilience, adding capacity and dedicated freight facilities where needed, and preserving and maintaining the tremendous assets already developed. This steadily improving freight system will continue to support vibrant manufacturing, technology development, agriculture, logistics, and other economic sectors across the state, and will continue to serve as an essential international trade gateway for the rest of the country.

Looking ahead to the year 2040, California's freight system will be dominated by near-zero-emissions vehicles and equipment powered by a modernized energy production and distribution system and a robust mix of renewable and clean energy sources. The largest urban areas will have dedicated freight corridors and hubs – some of them automated – that separate passenger and freight movements and minimize impacts to surrounding communities. Rural areas of the state, including Native American Tribal lands, will be served by high-quality freight facilities that provide access to national and global markets. Local and regional agencies will be guided by detailed freight transportation plans that integrate land use and economic development. The transition to this twenty-first century freight system will rely on both public and private funds invested in countless infrastructure projects, vehicle and equipment purchases, technology applications, and system management approaches. It will require incremental change and large-scale improvements implemented by public and private entities and oriented toward achieving a shared freight vision for California.

FIGURE 2. CALIFORNIA FREIGHT MOBILITY PLAN VISION

CALIFORNIA FREIGHT MOBILITY PLAN VISION

As the national gateway for international trade and domestic commerce, California enhances economic competitiveness by collaboratively developing and operating an integrated, multimodal freight transportation system that provides safe, sustainable freight mobility. This system facilitates the reliable and efficient movement of freight and people while ensuring a prosperous economy, social equity, and human and environmental health.

The California Freight Mobility Plan Vision is consistent with, and built upon, the policies of the California Transportation Plan (CTP), which itself is structured upon the framework established by the Moving Ahead for Progress in the 21st Century Act (MAP-21) and various State laws, particularly those related to air quality and the interconnection of land use and transportation. The Vision is also consistent with the California Department of Transportation's new Mission Statement. The Vision recognizes that all modes must be included in the California Freight Mobility Plan (CFMP) in order to achieve a truly integrated, intermodal freight network.

The Vision provides a common platform for informing and guiding the development of freight transportation policy, programs, and project prioritization across all sectors of California's freight system, public and private. It was crafted in collaboration with the 62-member California Freight Advisory Committee which was created to help inform the development of this plan and to serve as an ongoing freight advisory body to the State. From this Vision, six overarching goals and a complementary set of more specific objectives and strategies were developed. They are consistent with the goals and objectives of the federal freight plan guidelines detailed in Chapter 1.4 – Guiding Policies, Partnerships, and Outreach. These goals, as well as additional attributes described later in this chapter, are correlated with the full set of projects identified in the Freight Project List in Appendix A. The Freight Project List can be readily sorted by policy and funding objective and filtered to identify those matching the selection criteria of various funding programs.

FIGURE 3. CALIFORNIA FREIGHT MOBILITY PLAN FRAMEWORK

CALIFORNIA FREIGHT MOBILITY PLAN GOALS

Economic Competitiveness

Improve the contribution of the California freight transportation system to economic efficiency, productivity, and competitiveness

Safety and Security

Improve the safety, security, and resilience of the freight transportation system

Freight System Infrastructure Preservation

Improve the state of good repair of the freight transportation system

Environmental Stewardship

Avoid and reduce adverse environmental and community impacts of the freight transportation system

Congestion Relief

Reduce costs to users by minimizing congestion on the freight transportation system

Innovative Technology and Practices

Use innovative technology and practices to operate, maintain, and optimize the efficiency of the freight transportation system while reducing its environmental and community impacts

CFMP OBJECTIVES AND STRATEGIES

The Objectives and Strategies identified on the following pages support the CFMP goals listed above and are intended to serve as a means to achieve the goals. The goals are not prioritized; all are considered essential.

It is expected and desired that individual strategies and projects, will support more than one goal and therefore more than one objective. Those projects that most effectively address multiple goals and objectives and are on higher network tier segments would likely be of higher funding priority than those that have a narrower impact and are on a lower network tier.

TABLE 1. CALIFORNIA FREIGHT MOBILITY PLAN GOALS, OBJECTIVES, AND STRATEGIES

ECONOMIC COMPETITIVENESS Improve the contribution of the California freight transportation system to economic efficiency, productivity, and competitiveness	
Objectives	**Strategies**
1. Build on California's history of investments to seek sustainable and flexible funding solutions with federal, private, and green partners 2. Invest in freight projects that enhance economic activity, freight mobility, reliability, and global competitiveness	1. Conduct a cost-benefit analysis for each freight project proposed for programming 2. Reduce transportation costs by eliminating bottlenecks and recurrent delay, making operational improvements, and accelerating rapid incident response on priority freight corridors 3. Seek creation of national, state, and regional dedicated freight funding programs 4. Expand capacity of freight corridors, or subsections through infrastructure or operational improvements 5. Eliminate unnecessary freight lifts or handling 6. Improve system condition and performance on priority freight corridors 7. Coordinate with other states and regions to improve multi-jurisdictional freight corridors to reduce delay, increase speed, improve reliability, and improve safety
SAFETY AND SECURITY **Improve the safety, security, and resilience of the freight transportation system**	
Objectives	**Strategies**
1. Reduce rates of incidents, collisions, fatalities, and serious injuries associated with freight movements 2. Utilize technology to increase the resilience and security of the freight transportation system	1. Reduce points of conflict on the freight system by constructing railroad grade crossings where there is a history of crashes and at crossings that have a high volume of vehicle and train traffic 2. Create truck-only lanes and facilities and encourage off-peak usage 3. Fully implement positive train control 4. Expand number and scope of cargo security screenings 5. Expand the system of truck parking facilities 6. Ensure consistent and effective safety and security requirements at all California ports 7. Identify alternate freight routes to maintain freight movement at times of disruption by disaster or other causes 8. Inventory and assess risks for freight facilities vulnerable to sea level rise and other natural disasters, and prioritize for abandoning, armoring, adapting, moving, or replacing

FREIGHT SYSTEM INFRASTRUCTURE PRESERVATION
Improve the state of good repair of the freight transportation system

Objectives	Strategies
1. Apply sustainable preventive maintenance and rehabilitation strategies	1. Ensure adequate and sustainable funding for preservation of the freight system 2. Expand scope of freight system rehabilitation projects to include facility modernization, where possible and merited, to increase range of available funding sources 3. Make preservation projects multipurpose 4. Identify maintenance and preservation needs on priority freight corridors

ENVIRONMENTAL STEWARDSHIP
Avoid and reduce adverse environmental and community impacts of the freight transportation system

Objectives	Strategies
1. Integrate environmental, health, and social equity considerations in all stages of freight planning and implementation, including considering impacts and mitigation relative to the context of the project location 2. Conserve and enhance natural and cultural resources 3. Avoid and reduce air and water pollution, greenhouse gas (GHG) emissions, and other negative impacts associated with freight transportation by transitioning to a lower-carbon and more efficient freight transportation system 4. Implement freight projects that demonstrate, enable, implement or incentivize use of advanced, clean technologies (including zero- and near-zero-emissions technologies) and efficiency measures needed to attain ambient air quality standards and achieve needed air toxics and GHG emission reductions	1. Establish corridor-specific impact reduction goals and projects 2. Incentivize and prioritize freight projects that maximize GHG, criteria pollutant, and air toxin emission reductions 3. Incentivize impact reduction 4. Implement projects in freight corridors that are specifically targeted to avoid, reduce, or mitigate freight impacts on the environment and community 5. Support and fund research focused on impact reductions and mitigation 6. Ensure coordination and alignment of the Plan with State GHG reduction goals and requirements and State and federal air quality standards 7. Develop an efficiency metric that captures the intensity of pollutants per unit of freight moved

CONGESTION RELIEF
Reduce costs to users by minimizing congestion on the freight transportation system

Objectives	Strategies
1. Develop, manage, and operate an efficient, integrated freight system 2. Identify causes and solutions to freight bottlenecks 3. Invest strategically to optimize system performance	1. Create a multimodal freight bottleneck list for priority corridors and prioritize for correction 2. Identify most-congested freight corridors and facilities and prioritize for improvement 3. Implement detection on priority corridors to identify problem areas across modes, particularly targeted to truck data 4. Construct railroad grade crossings at high-volume roadway crossings 5. Add mainline track and sidings to accommodate demand for freight and passenger rail services 6. Implement system management and expand freight travel information availability with the focus on freight corridors 7. Expand freight travel information availability to entire truck fleet

INNOVATIVE TECHNOLOGIES AND PRACTICES Use innovative technology and practices to operate, maintain, and optimize the efficiency of the freight transportation system while reducing environmental and community impacts	
Objectives	**Strategies**
1. Support research, demonstration, development, and deployment of innovative technologies	1. Prioritize Freight plan projects that implement state-of-the-art and demonstration technologies
2. Promote the use of zero- and near-zero-emissions technologies within the freight industry to support the State Implementation Plan (SIP), attainment of California greenhouse gas reduction targets, and reduction of local air toxics	2. Support deployment of new, non-fossil fuel distribution, recharging facilities, and shoreside power on the freight system, focusing on particular regions and corridors
3. Support and incorporate the use of low-carbon renewable fuels	3. Support implementation of cleaner, quieter engine technologies
4. Promote innovative technologies and practices that utilize real-time information to move freight on all modes more efficiently	4. Research opportunities for automation of certain freight movements

Addressing the listed set of goals, objectives, and strategies is a monumental task that can be achieved only through the combined efforts of the State, public and private freight stakeholders, and the freight industry. The public sector's role in constructing, operating, and maintaining many freight facilities, such as roadways and seaports, is critical. Key investments, land use decisions, and regulatory activities implemented by the public sector heavily influence the business operations of private-sector freight operators who are dependent on these public facilities and also are responsible for their own facilities and equipment. Solutions that meet the goals and objectives of public and private freight interests while also addressing community and environmental needs are solutions that should be assigned a high priority.

IMPLEMENTATION

California has the largest, most diverse economy in the United States – an economy supported by the largest, most diverse freight system in the nation. The state's geographic location on the Pacific Rim and the scarcity of east/west transportation corridors in North America contribute to provide California with a natural competitive edge. California's national and international trade status can also be attributed to decades of innovation and investment that built the transportation system, created industries, and enhanced agricultural production. While California's freight industry is the most extensive and sophisticated in the nation, substantial additional investment is needed to attain the goals of this Plan. Many of the techniques and technologies that will help meet the goals are currently being developed within the state's freight industry and the California State University system, supported by funding from public and private sources.

Strategies for Implementation

Going forward, we must build upon California's natural advantages and the investments of past generations by:

1. Maintaining and enhancing existing assets,
2. Applying new technologies and system operations practices to improve the performance of all aspects of the freight system,
3. Addressing the negative impacts of freight movement as a component of each freight project and through programs and projects specifically targeted to address impacts on a broad scale,
4. Strategically adding new capacity,
5. Strengthening collaboration among State and regional agencies, advisory groups, the freight industry, communities, and advocacy groups, and
6. Creating dedicated, reliable, long-term freight funding programs.

A multifaceted, system-wide approach that addresses all six of these high-level improvement strategies will help ensure that the future freight system is both fiscally and environmentally sustainable.

There is one word in the CFMP Vision Statement that is most critical to the success of the State's freight future: "collaboratively." It is only through collaboration that the six broad strategies can be implemented and the CFMP vision achieved. Absent a collaborative approach, little can be accomplished. California's regional agencies have proven highly effective in establishing collaborative relationships with their regional freight partners and increasingly, coordinating among themselves on freight-related matters. **Strengthening the collaborative approach should be formalized by regional agencies through the establishment of regional freight committees, and where there are not a sufficient number of freight partners to support a committee, at a minimum, regional agencies should designate a lead staff person to serve as a freight liaison.** At the State level, the California Freight Advisory Committee (CFAC) serves as a forum for expanded collaboration among government agencies, the freight industry, communities, and advocacy groups. The CFAC is a permanent committee, whose role is to advise the State on freight-related matters, including the development of Caltrans' CFMP and the California Air Resources Board's Sustainable Freight Strategy.

The CFMP goals are further refined by the strategies by focusing attention and resources on the most critical needs, identifying more specific project objectives, providing a structure for prioritizing projects, and other actions for the allocation of funding. Prioritization must be flexible to meet local and regional needs while also responding to State and national needs.

This will involve the implementation of hundreds of individual freight projects, air quality improvements, and energy transition programs at regional and State levels. They will be funded by a variety of public agencies, private organizations, and public-private partnerships. Delivering this large set of projects and programs to implement a cohesive improvement strategy that meets the needs of project sponsors, communities, the State, and the nation will be challenging, but it is achievable.

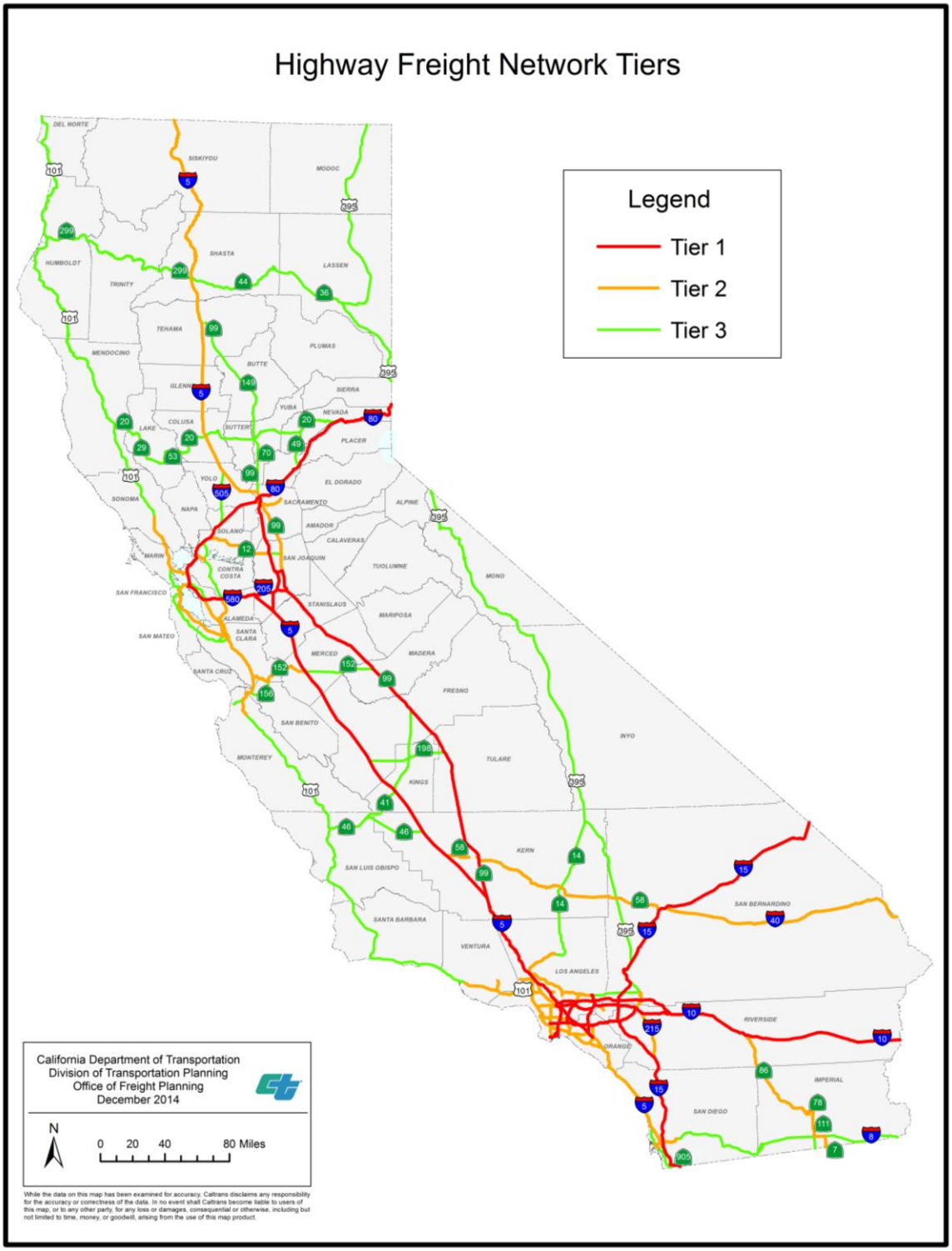
Dedicated, reliable funding is the foundation for meeting these goals. Without it, few, if any can be met. Thus, development of long-term, reliable sources of substantial funding that can be applied to the wide range of freight projects and public and private project sponsors is critical.

California's Approach

Achieving the CFMP goals must be approached with the recognition that the vast scale of California's freight system and freight-related industries requires regional and local leadership that addresses freight needs within the context of their jurisdictions. The State does not have sufficient local knowledge to consistently determine individual solutions, project locations, and regional priorities, particularly when the State is not the owner/operator of the respective freight mode or facility. Improvement strategies that work well for the border region with Mexico may not be applicable to the ports of San Pedro Bay and may be largely irrelevant to the rural northern portion of the state. A core premise of the improvement strategy is that where regional and sub-regional freight plans have been developed and formally adopted by the governing board of a public agency through an open public process, the priorities and projects contained in those plans will be utilized to develop the CFMP where those plans are consistent with achieving the CFMP's goals. Additional considerations for State freight project prioritization include freight network location (network tiers), project type, priority goals, funding program requirements, and other factors that may be used by the State when identifying projects to endorse, sponsor, or fund.

Given that public funding for freight projects is very limited and the identified need for freight system improvements extensive, it is necessary to focus on the highest priority needs rather than distributing funds equally across California on a formula basis. The CFMP categorizes the designated highway and freight rail networks into three tiers for each facility type with those portions of the network having the highest truck and rail volumes being Tier 1 and those with lower volumes being Tier 2 or Tier 3. Priority consideration is also given for some freight network components having lower freight volumes but providing key interstate or international connections. Such facilities are identified as Tier 1. While all of the freight network facilities are important, the Tier 1 facilities are more likely to have projects prioritized for funding. It is intended that the attribute fields contained in the Freight Project List can and will be used to further inform the prioritization process to achieve specific objectives and that such a process

FIGURE 3. HIGHWAY FREIGHT NETWORK TIERS



Source: Caltrans, Division of Transportation Planning (DOTP)

will be implemented as funding program criteria are developed and issued. Emerging funding programs can also use the Freight Project List attribute fields and their corresponding projects to inform the creation of the funding criteria. As future freight projects are identified and developed, it is expected that sponsoring organizations will integrate high-priority attributes into their projects specifically to improve their funding opportunities.

FIGURE 4. INTERSTATE 80 AT DONNER PASS – TIER 1 FREIGHT HIGHWAY DESIGNATION

Source: Caltrans

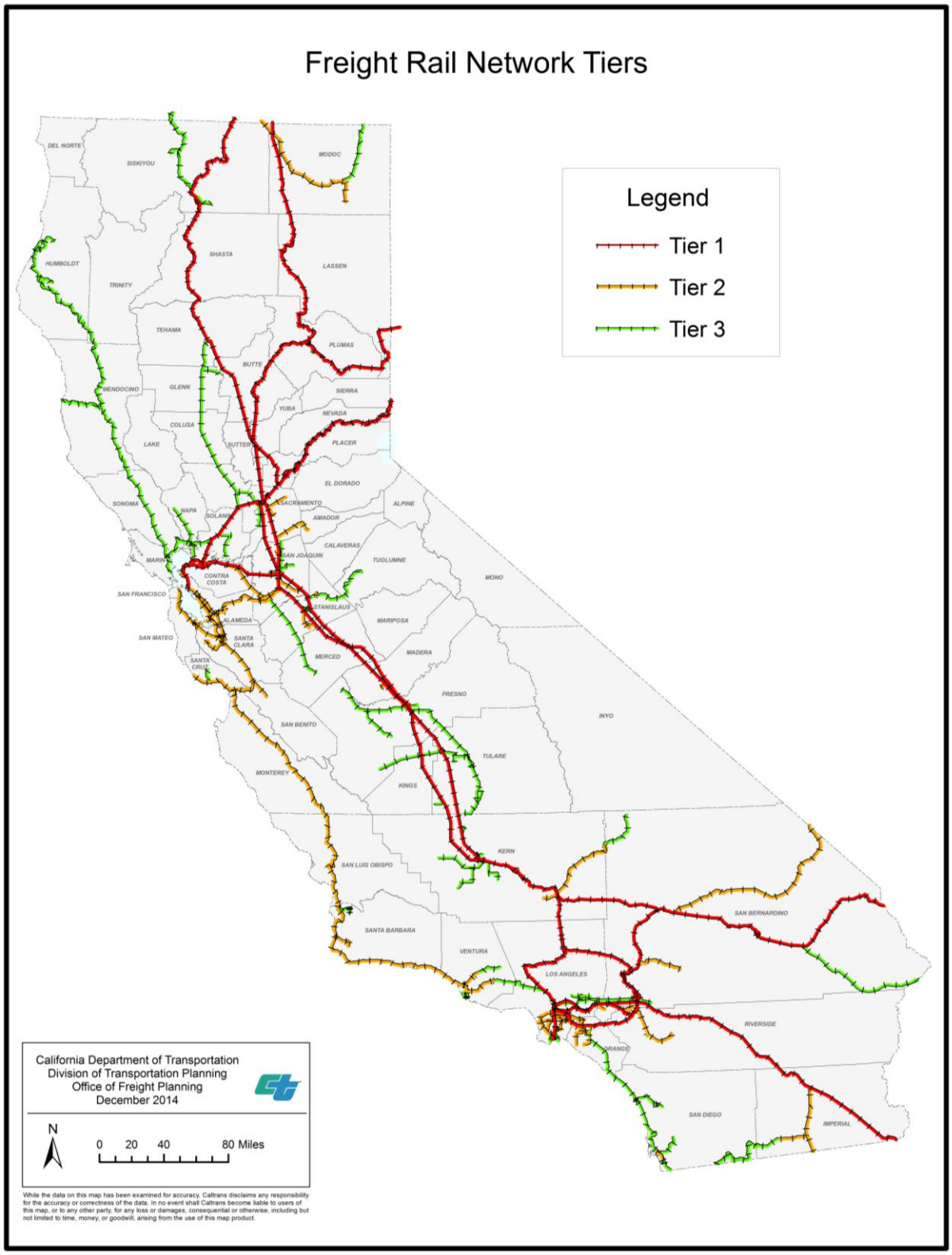
FIGURE 5. HIGWAY FREIGHT NETWORK TIERS – NORTHERN CALIFORNIA

Source: Caltrans, Division of Transportation Planning (DOTP)

FIGURE 6. HIGWAY FREIGHT NETWORK TIERS – SOUTHERN CALIFORNIA

Source: Caltrans, Division of Transportation Planning (DOTP)

FIGURE 7. FREIGHT RAIL NETWORK TIERS



Source: Caltrans, Division of Transportation Planning (DOTP)

The Regional Planning Process

Through the regional planning process, Metropolitan Planning Organizations (MPOs) and Regional Transportation Planning Agencies (RTPAs) develop Regional Transportation Plans (RTPs) that address all transportation modes, including freight. The RTPs contain a list of transportation projects that includes freight projects with identified potential funding sources. As may be required for a particular MPO or RTPA, air quality conformity analysis is conducted for designated air quality nonattainment areas. The freight projects included in the RTP project list are included in the conformity analysis. In order to be eligible for federal transportation funding, transportation projects, including freight, must be in an RTP.

Developing an RTP is a public process that involves local member agencies, transportation stakeholders, advocacy groups, and the public. All of the transportation needs of the respective regions are considered for a period extending approximately 25 years into the future. RTPs are updated on a four- or five-year cycle depending on the specific regional agency. With the complex regional planning process and the multi-year cycle, it is essential that freight projects be included in the process at the beginning of an RTP update cycle so that the freight projects are assured of inclusion in the final RTP. This requires the freight industry to be actively involved in the development of RTPs and emphasizes the need for regional agencies to form and coordinate freight advisory committees and assign dedicated staff to work with their freight industry representatives.

In many RTPs, freight projects are specifically identified within a freight category, while in other RTPs, freight projects are not specifically identified but are instead addressed by a project that encompasses many transportation needs, including freight. Several of the state's largest MPOs and a few of the smaller RTPAs have developed, or are developing, freight plans that are used to help inform the development of the more comprehensive RTP. Regional freight plans are becoming more common, and several of them have been funded recently through planning grants provided by Caltrans, using federal planning funds. In the San Joaquin Valley, the Valley's eight MPOs joined together to develop a joint freight plan that covers the entire Valley. ***The CFMP recommends that when the RTP Guidelines are updated, freight is required as a specific chapter within the RTPs.***

Gateways, Corridors, Connectors, Hubs, and Initiatives

Earlier, this chapter discussed the naturally occurring and human-built advantages that characterize California's freight system and the need to build on those advantages going into the future. That system is built on an underlying, organized structure of infrastructure components that consist of: 1) gateways, 2) corridors, 3) last-mile connectors, 4) hubs, and 5) broad policy initiatives that apply to multiple components. Utilizing the infrastructure and being affected by policy initiatives are the thousands of vehicles and pieces of equipment that

move the freight over the infrastructure network. Focusing and prioritizing the hundreds of projects in the Freight Project List on these five focus areas may garner the most benefits to the State by concentrating resources in the areas of greatest freight activity.

Gateways

The national and international freight gateways for California are the State's seaports, airports, international border ports of entry, and major highway border points with neighboring states. All of the goods and services that enter or leave the state pass through these nodes. Each gateway needs to function efficiently, minimize delay, ensure safety and security, and keep transaction costs to a minimum, all without creating impacts on neighbors. Currently, there are bottlenecks, capacity restrictions, congestion, insufficient information resources, and other obstacles that create delays, add cost, and impact communities. Improving these gateways is a high priority. Each gateway requires specific actions and projects to address its unique needs. **Projects that improve the functioning of the gateways and reduce or eliminate associated impacts should be prioritized for funding.**

Corridors

Corridors connect gateways and provide regional, state, intra-regional, intrastate, and national connectivity. For the highway system, the corridors are part of the federal Primary Freight Network or are on the State Freight Network (see Chapter 2.1). In addition to highways, corridors also include the Class I railroad lines that provide connectivity to other regions and states. As with the gateways, all of the goals and project types can be applied to the corridors. Some of the corridors are the subject of multistate partnerships (Interstates 15, 80, and 5, for example) and are particularly important for interstate commerce. Others, such as State Routes 60 and 99 and Interstates 580 and 710, are essential to interstate commerce and regional freight movement but do not directly link to other states. All require focused investment and collaboration among jurisdictions, communities, and the freight industry to make the needed improvements. It is likely that public funding investments will be concentrated along these corridors to achieve the greatest system impact. Project prioritization should be conducted collaboratively among regions, local agencies, communities, industry, and the State.

Last-Mile Connectors

Linking many of the gateways and corridors are the smaller locally owned roadways and short-line railroads that serve as "last-mile" connectors. They are essential to the function of the freight system. The highways typically have very high truck volumes but have not always had the level of pavement maintenance and preservation funding necessary to keep them in a state of good repair. Such connectors often run adjacent to or through neighborhoods populated by lower income communities. Addressing these connector roads requires very close coordination with local agencies and communities to help ensure that both pavement condition and

community impacts are considered, but it also requires funding that may not be readily available. These roadways are not yet on the federal or State networks and are typically reliant on local funding. As last-mile connectors are identified through local and regional freight planning efforts and incorporated into Board-adopted freight plans, those connectors should be added to the State Freight Network. Guidelines for identifying such routes will need to be developed in a manner that is consistent with the pending federal designation of rural and urban connectors. A similar process would be applied to routes providing connectivity to Native American Tribal Trust Lands. Similar to last-mile road connectors, short-line railroads provide last-mile connectors from the Class I railroads to seaports and agricultural, manufacturing, industrial, mining, and other facilities that generate heavy or large loads. **Such rail connections are key to the ongoing viability of many of those facilities.**

Hubs

Freight hubs vary widely in scale and attributes. Generally, a hub is a place where freight modes intersect and freight is transferred between modes. Intermodal rail yards, transloading centers, areas surrounding air cargo facilities, and seaports are all examples of freight hubs. Hubs may also serve as gateways. Freight projects may be specifically identified to improve the transaction speed at such hubs, reduce impacts, improve safety and security, increase efficiency, expand capacity, and a range of additional actions.

Broad Initiatives

Broad initiatives are actions, projects, or programs that are implemented across a wide geographic area. Statewide safety programs, energy conservation incentive programs, and real-time truck driver information services are three examples of broad initiatives. As mentioned previously, air quality and energy transition objectives are among the highest priorities for the CFMP. The needed improvements must take place across vast regions – sometimes the entire state. Occasionally, as with cargo ships, they must take place on an international scale. There are also highly localized actions to address issues at specific freight facilities. While the Air Resources Board, regional air quality management districts, and the California Energy Commission provide financial incentives to help fund the transition to lower emissions technologies and energy sources, the incentives are not sufficient, and, in many cases, the respective private enterprise does not have sufficient resources either. It is necessary to develop additional funding options and to make related projects eligible for federal freight funding.

FREIGHT PROJECT LIST

As required by US DOT's Interim Guidance on State Freight Plans and State Freight Advisory Committees, a list of freight projects has been compiled and is included in Appendix A. The statewide listing includes all regionally designated freight projects and freight-related projects contained in RTPs. The list will be updated as new RTPs are adopted. When the current RTPs were developed, there was no common statewide definition of a freight project. The CFMP seeks to establish a consistent definition for freight projects that will be included in future RTPs. The definition below, generally though not fully, applies to the project list contained in this Plan.

A freight project is defined as:

> *An improvement that significantly contributes to the freight system's economic activity or vitality; relieves congestion on the freight system; improves the safety, security, or resilience of the freight system; improves or preserves the freight system infrastructure; implements technology or innovation to improve the freight system or reduce or avoid its negative impacts; or reduces or avoids adverse community and/or environmental impacts of the freight system.*

In addition to projects listed in the fiscally constrained portion of RTPs (projects with a reasonable assurance of funding availability), the Freight Project List also contains projects that are not yet in the fiscally constrained portion of the RTP but are likely to be added when a reasonably assured source of funding is identified. The Freight Project List includes additional freight projects that may not have been identified in an RTP but have been formally adopted by a governing board, such as a Port Authority, which means the project has been considered within the public planning process. In order to receive federal funding, these projects will likely need to be included in the RTP.

Each project in the Freight Project List is classified by the CFMP goal(s) it will address. In many instances, a project addresses more than one goal, which is ideal. Linking each project with the goal(s) it supports allows funding applicants and providers to better understand how the project contributes to the overarching goals established by the State and federal government, as well as those of specific funding programs. Such classifications will also assist the State in developing and implementing new funding programs that may be targeted to specific goals. Regional agencies and freight system owner/operators may also be encouraged to propose new funding programs that may be targeted to specific goals. Regional agencies and freight system

owner/operators may also be encouraged to propose new projects that meet specific goals and funding program needs.

Four categories of projects are identified. Projects that:

1. Preserve and maintain the system,
2. Make operational, safety, and system management improvements,
3. Enhance communities and the environment, or
4. Expand facility capacity.

These project categories are applicable statewide and also align with the broad strategies discussed earlier. The Freight Project List also indicates project readiness, existing funding commitments, and whether a project is located on California's multimodal State Freight Transportation System or the federal Primary Freight Network.

Under MAP-21, freight projects must be included in a state-adopted freight plan to qualify for certain federal funding benefits. Though there is not yet a federal freight funding program, it is anticipated that such a program will be created and that in order to qualify for funding, a project will have to be in a state freight plan consistent with federal freight planning guidelines. The CFMP includes the full set of freight projects listed in the State's RTPs. Project sponsors may seek funding that is most appropriate and best suited for the region or locality. The State will also likely prioritize projects where the State has discretionary funding authority so that available funds are primarily applied along Tier 1 corridors, though projects on Tier 2 and 3 corridors will also be eligible and considered for discretionary funds.

Listed below are the CFMP goals with examples of project types and characteristics that may support those goals. Ideally, individual projects will address more than one goal, such as an Innovative Technology project addressing Environmental Stewardship needs or a Congestion Relief project improving Economic Competitiveness. It is anticipated that the most competitive projects will be those that address more than one of the goals and have the greatest measurable impact on those goals. Similarly, the most competitive projects are likely to be those that are located on Tier 1 of the designated federal Primary Freight Network or the State Freight Network.

1. **Goal: Economic Competitiveness**
   a. Projects that create additional economic efficiency and productivity in our existing freight infrastructure system through provision of congestion relief
   b. Projects or improvements that reduce the costs of doing business in California, that promote growth in freight-dependent industries, or otherwise incentivize investment in goods movement infrastructure

   c. Capacity expansion of freight corridors, or subsections through infrastructure or operational improvements
   d. Improvements that eliminate unnecessary freight lifts or handling
   e. Supports growth in freight-related job creation, employment, publicly owned or controlled infrastructure assets, and tax revenues
   f. Protects California's freight industry from undue competition and loss of market share
2. **Goal: Safety and Security**
   a. Truck-only lanes and facilities
   b. Projects that encourage off-peak usage of freight facilities
   c. Expansion of the system of truck parking facilities
   d. Projects to abandon, armor, adapt, move, or replace freight facilities that are vulnerable to sea level rise and other natural disasters
   e. Positive Train Control as an addition to an existing project, not as a stand-alone project
   f. Railroad grade crossings where there is a history of crashes and at crossings that have high volume of vehicle and train traffic
   g. Projects that accelerate rapid incident response
   h. Supports robust cargo security efforts
3. **Goal: Freight System Infrastructure Preservation**
   a. Sustainable preventive maintenance, rehabilitation, and preservation projects, with a focus on multi-purpose projects
4. **Goal: Environmental Stewardship**
   a. Corridor-specific impact reduction projects
   b. Projects that maximize reductions in greenhouse gas, criteria pollutant, and air toxin emissions
   c. Projects that are specifically targeted to avoiding, reducing, or mitigating freight impacts on the environment and community
   d. Projects that locate freight distribution facilities to the closest proximity of origin for the quickest, most efficient distribution of freight
   e. Railroad grade crossings
5. **Goal: Congestion Relief**
   a. Projects that eliminate bottlenecks and recurrent delay
   b. Operational improvements
   c. Improvements targeted to the most congested freight corridors
   d. Implementation of detection, system management, and expansion of freight travel information availability, particularly targeted to truck data

   e. Railroad grade crossings
   f. Addition of mainline track and sidings to accommodate demand for freight and passenger rail services

6. **Goal: Innovative Technology and Practices**
   a. Implementation of state-of-the-art and demonstration technologies
   b. Deployment of new, non-fossil fuel distribution, recharging facilities, and shoreside power on the freight system, focusing on particular regions and corridors
   c. Implementation of new engine technologies that are cleaner and quieter

NEXT STEPS

Final provisions of MAP-21 are still under development and the next federal transportation authorization has yet to be written. It is widely anticipated that the next federal transportation bill will refine MAP-21's freight provisions, address the inadequacies of the proposed Primary Freight Network, and contain a funding program component. Further, a national freight plan is pending and it will likely provide direction and opportunities for state freight plans to address. Though MAP-21 is silent on amending state freight plans, and California's Assembly Bill 14 (Lowenthal, 2013) directs the California State Transportation Agency (CalSTA) to update the State's freight plan every five years, this version of the CFMP assumes the Plan will be amended to address the ongoing federal process so that California's freight plan is consistent with national policy and programs. The CFMP is intended to be an active, "living" document that will be updated to keep pace with dynamic changes in the freight industry and international trade.

In addition to addressing federal freight planning matters, the State, through the leadership of the Air Resources Board (ARB) is developing a Sustainable Freight Strategy (SFS) that is expected to call for the transition of California's freight industry to a near-zero-emissions status for greenhouse gas and criteria air pollutant emissions by the year 2050. **The ARB adoption of a SFS initiative would represent State policy, and the CFMP will be amended to be consistent with that State policy.** As the SFS is developed, CalSTA and the California Department of Transportation (Caltrans) will continue to be actively engaged in that process and will convene the California Freight Advisory Committee to provide input and recommendations and discuss how the SFS and the CFMP can be most effectively linked. Freight policy and program consistency across State agencies is essential.

At the regional and sub-regional levels, including individual seaports and airports, the planning process and project identification is continuous. As these processes proceed and generate adopted plans through an official public process, such as the development of an RTP and its project list, the CFMP will be amended to incorporate the new information and projects as appropriate. As new freight trends emerge, or significant changes occur at the regional level, relevant sections of the freight plan will be updated to reflect them.

It is essential that the State identify freight-related priorities that reflect State programs, initiatives and goals. While the CFMP incorporates a tremendous number of freight projects and an extensive network, the State recognizes the need to focus limited fiscal resources where they can achieve the greatest benefits. Projects located along Tier 1 network segments would likely be the highest priority for State directed funding.

RESEARCH

There is a substantial need for a wide variety of freight-related research in California and the development of companion plans to the CFMP. Partner agencies, university research groups, and the freight industry are conducting a tremendous amount of research on clean fuels, efficient engines, automation, and other topics. Several potential additional topics include:

- State Maritime Plan
- Vulnerability, Resiliency and Recovery of Freight Network
- Economic Impact of Freight Network
- Freight Trends of Key Industries
- Mitigating Freight Impacts to Communities
- Statewide Truck Parking Study
- Statewide Warehousing and Distribution Center Analysis
- Statewide Freight Model

SUMMARY

The CFMP Improvement Strategy is multi-tiered to address the needs of California's full, multimodal, integrated freight system; to respond to each of the goals contained in the CFMP and their corresponding federal freight goals; to position freight projects to seek a wide variety of funding; and to reflect the unique needs of California's diverse regions. An aggregate of the freight projects included in each of the State's regional transportation plans yields a list of 700 projects, addressing all freight modes, with an estimated cost of approximately $138 billion as detailed in Appendix A.

Six broad strategies have been identified to address the CFMP Vision and Goals as summarized below.

1. Maintain and enhance existing assets,
2. Apply new technologies and system operations practices,
3. Address negative impacts of freight movement,
4. Strategically add new capacity,
5. Strengthen the collaborative approach, and
6. Create dedicated, reliable, long-term freight funding programs.

Individual freight projects can be categorized into one of four types that can be used to target funding to specific program goals, such as "fix-it-first":

1. System Preservation
2. Operations and Management
3. Community and Environmental Stewardship
4. Capacity Expansion

Further, each project, or set of projects, can be identified as addressing freight needs within five structural contexts that are directly related to the State's and nation's freight systems and networks:

1. Gateways
2. Corridors
3. Last-mile connectors
4. Hubs
5. Broad initiatives

Sorting projects by these and other categories identified in the Freight Project List enables the selection of projects for prioritized funding based on the specific expected outcomes of those projects and the specific goals and objectives of individual funding programs. While each of the CFMP goals is important and helps to create a balanced plan, not all of the goals are likely to be eligible for funding under every funding program. The categorization also assists decision makers and the public to better understand the types of freight projects that are being implemented and the amount of public and private funding being invested to achieve particular goals and objectives. To help focus investments to the greatest needs, the freight network has been categorized into three tiers with Tier 1 being the highest priority and Tier 3, while still critical to freight movement and needing investment, having the relatively lowest freight network priority. However, all three tiers are of higher priority for freight funding than the much larger balance of the transportation system. It is expected that the preponderance of freight funding will be applied to projects along Tier 1 network segments and the gateways, hubs, and last mile connectors they serve.