

Executive Summary

California's freight transportation system is the most advanced, environmentally friendly, and multimodal in the nation. This impressive goods movement system provides communities with their most vital necessities including food, medicine, and inputs for manufacturing, in a timely, efficient manner. Improvements focusing on efficiency and reliability in the freight industry will continue to positively impact the economy and California's communities. In an effort to further strengthen these impressive ranks, and remain a national leader, California is working towards more efficiency, less-pollution, and higher-capacity in its freight facilities, equipment, and operations.

California Freight Mobility Plan 2023 Vision Statement

As the largest national gateway for international trade and domestic commerce, California strives to have the world's most innovative, economically competitive, multimodal freight system that is efficient, reliable, modern, integrated, resilient, safe, and sustainable, where the benefits of freight are realized by all while supporting healthy communities and a thriving environment.

California Freight Mobility Plan 2023 Background

In alignment with the goals and principles of the California Transportation Plan (CTP) 2050 and the California Sustainable Freight Action Plan (CSFAP), the California Freight Mobility Plan (CFMP) 2023 is a complete update to California's previous Freight Mobility Plan adopted in 2018, the CFMP 2018. The creation of a state freight plan is required by Assembly Bill (AB) 14 (Lowenthal, 2013), codified under California State Government Code (GC) Section 13978.8, and the Infrastructure Investment and Jobs Act (IIJA, 2021), codified under 49 United States Code 70202 to update the plan every four years to receive programmatic funding.

In the past decade, there have been several significant achievements for California's freight industry. A detailed list of achievements is available in **Appendix A**. Examples of these achievements include:

- Adoption of the California Sustainable Freight Action Plan in July 2016
- Passage of Senate Bill 1 (Beall and Frazier), the Road Repair and Accountability Act of 2017, including \$300 million annually for freight projects
- Adoption of the SB 1 Trade Corridor Enhancement Program (TCEP) Guidelines in October 2017
- 60 to 98 percent reduction of criteria pollutants and 13 percent reduction of carbon dioxide emitted at the San Pedro Ports from 2005 to 2017
- Awarded \$1.39 billion of SB 1 TCEP funding to multimodal freight projects throughout the state
- 98 percent reduction in truck emissions, and 76 percent reduction in vessel emissions at the Port of Oakland from 2009 to 2018
- Establishment of the Community Air Protection Program (pursuant to Assembly Bill - 617) to reduce exposure in communities most impacted by air pollution

- Executive Order N-79-20 stipulates that 100 percent of in-state sales of new passenger cars and trucks will be zero-emission by 2035, which is a further goal of the State that 100 percent of medium-and heavy-duty vehicles in the State be zero-emission by 2045
- The 2022 Budget Act provided \$1.2 billion over multiple years for the Port and Freight Infrastructure Program (PFIP) to help ease supply chain congestion and increase the capacity to move goods in California.
- The Infrastructure Investment Jobs Act (IIJA) signed into law in November 2021
- Adoption of the PFIP Guidelines in October 2022

In June 2018, the State adopted the Addendum to the CFMP 2014 to address the new requirements under the Federal FAST Act and maintain eligibility for National Highway Freight Program (NHFP) funding. The Addendum recapped all the Moving Ahead for Progress in the 21st Century (MAP-21) elements addressed in the CFMP 2014, including, in detail, the three new FAST Act elements:

- Designation of Critical Urban Freight Corridors (CUFC) and Critical Rural Freight Corridors (CRFC) [element #3],
- Consideration of any significant congestion or delay caused by freight movements and any strategies to mitigate that congestion or delay [element #8], and
- A freight investment plan [element #9].

The CFMP 2023 builds upon the 2018 Addendum and addresses the new requirements under the IIJA. These new elements include:

- The most recent commercial motor vehicle parking facilities assessment conducted by the State [element #10],
- The most recent supply chain cargo flows in the State, expressed by mode of transportation [element #11],
- An inventory of commercial ports in the State [element #12],
- If applicable, consideration of the findings or recommendations made by any multi-State freight compact to which the State is a party [element #13],
- The impacts of e-commerce on freight infrastructure in the State [element #14],
- Considerations of military freight [element #15],
- Strategies and goals to decrease-
 - (A) the severity of impacts of extreme weather and natural disasters on freight mobility,
 - (B) the impacts of freight movement on local air pollution,
 - (C) the impacts of freight movement on flooding and stormwater runoff, and
 - (D) the impacts of freight movement on wildlife habitat loss [element #16].

The CFMP 2023 development was guided by the California Freight Advisory Committee (CFAC). The CFAC is a committee required by Government Code Section 13978.8 to advise the California State Transportation Agency (CalSTA) and Caltrans on all aspects of the development of the CFMP. The CFAC is composed of diverse representatives from public and private sector freight stakeholders, including representatives of seaports, railroads, airports, trucking, shippers, carriers, freight-related associations, the freight industry workforce, regional and local governments, State and federal agencies, tribal governments, and environmental, safety, and community organizations.

CFMP 2023 Structure

- **Chapter 1: Vision, Goals, and Objectives** – Provides a consistent vision across the state in relation to the California Transportation Plan 2050 (CTP), the California Sustainable Freight Action Plan (CSFAP), the Caltrans 2020-2024 Strategic Plan, and the Interregional Transportation Strategic Plan (ITSP). This section showcases overarching goals and objectives to enhance California's economy, protect the environment, and support a transportation system that can meet current and future freight demands.
- **Chapter 2: California Economic Competitiveness** - Establishes a framework for sound policy decisions in relation to the overall economy by developing competitiveness in the twenty-first century. A summary of findings based on an in-depth study (Appendix C) of the freight industry labor force, warehousing, logistics, key economic drivers, challenges to doing business in the state, and alternative avenues for thriving industry are all explored in detail.
- **Chapter 3: Existing Freight System Conditions & Performance-Based Needs Assessment** – A review of the current performance and conditions of California freight infrastructure that are critical to making proper investments to enhance the movement of goods. This chapter highlights key freight performance measures. This chapter also has a discussion on agricultural freight.
- **Chapter 4: Future of Freight** - E-commerce, omni-channel distribution, first-and-last mile delivery, 3-D printing, and autonomous vehicles all pose opportunities for exploring new processes to move goods and for addressing the State's aging infrastructure, as technology advancements speed forward, placing excess burden on highway capacity and travel demand. Safety, Security, and Resiliency - A discussion of the threats of terrorism, economic recession, and environmental disasters (amongst others) to the freight system, and current efforts that support resiliency to these threats. A detailed look at the current state of trends, issues, and challenges facing the State's freight network and supply chain are explored in-depth. Also a comprehensive freight forecast.
- **Chapter 5: Environmental Challenges, Opportunities & Engagement** – As one of the largest economies in the world, California is challenged with maintaining and preserving its environmental assets including air and water while reducing negative environmental impacts on communities due to land development and transportation practices specifically related to goods movement. A strategic public outreach and engagement effort was conducted and resulting feedback is reported in this chapter.
- **Chapter 6: Implementation** - Bringing it all together, the elements of each chapter including trends, opportunities, and outcomes of public outreach and engagement efforts are developed and refined into specific strategies that enact the plan's goals and objectives. This chapter also includes seven Regional Freight Investment Strategies that highlight the uniqueness of each region's freight needs.

APPENDICES:

- A. 2014 CFMP Goals, Objectives, Strategies, and Accomplishments - Goals, Objectives, Strategies from the 2014 CFMP, and accomplishments since the adoption of the 2014 CFMP.
- B. Freight System Policy Framework - Federal, State, regional and local policies and plans that have implications for freight in California.
- C. California's Competitive Position - Analysis of California's competitiveness in attracting and retaining businesses.

- D. National Highway Freight Network Mileage - Reports the routes and mileages associated with each component of the National Highway Freight Network within California.
- E. Critical Urban Freight Corridor CUFC/CRFC Designation Process - The process adopted by Caltrans and the CUFC/CRFC Technical Advisory Committee to designate CUFCs and CRFCs in California.
- F. Bi-national and Multistate Corridor Efforts - Descriptions of bi-national and multistate efforts that California participates in with other nations and states.
- G. Truck Technology Types - An assessment of available truck technologies with descriptions, including Zero Emission and Near Zero Emission technologies.
- H. Outreach Efforts Summary - A summary of outreach efforts that have been undertaken for the development of the CFMP, with locations, dates, and results.
- I. SB 671 Clean Freight Corridor Project List – a list of potential projects proposed for the top five clean freight corridors in California from the Clean Freight Corridor Assessment.
- J. Smart Growth and Land Use – An analysis of the interactions between land use, real estate, and freight economics.
- K. Future Freight System Scenarios - Three distinct scenarios that can be tested through modeling to show how freight may change in the future with specific inputs and outputs.
- L. 2023 California Freight Investment Plan – A list of projects awarded Trade Corridor Enhancement Program funds. This includes projects that utilize the Federal Formula funds.

CFMP 2023 Goals

The guiding vision influencing freight sustainability in California is derived from three perspectives: economic vitality, environmental stewardship, and social equity. Building on the previous plan, the CFMP 2023 includes seven goals described below, which are further discussed in **Chapter 1B**. These goals were created through an extensive outreach and engagement process.

1. MULTIMODAL MOBILITY

Strategic investments to maintain, enhance, and modernize the multimodal freight transportation system to optimize integrated network efficiency, improve travel time reliability, and to achieve congestion reduction.

2. ECONOMIC PROSPERITY

Grow the economic competitiveness of California's freight sector through increased system efficiency, productivity, and workforce preparation.

3. ENVIRONMENTAL STEWARDSHIP

Support strategies that eliminate, reduce, avoid and/or mitigate adverse environmental and public health impacts of the freight transportation system while promoting and enhancing public health and ecological restoration in the planning process.

4. HEALTHY COMMUNITIES

Enhance community health and wellbeing by distributing the benefits of the goods movement system equitably across California's communities while making sure the environmental and public health costs of the system are not disproportionately borne by goods movement communities.

5. SAFETY & RESILIENCY

Eliminate freight-related deaths and serious injuries and improve system resilience by addressing infrastructure vulnerabilities associated with security threats, effects of climate change, and natural disasters.

6. ASSET MANAGEMENT

Maintain and preserve infrastructure assets using cost-beneficial treatment as indicated in the State Highway System Management Plan (SHSMP), per the federal FAST Act, State and Highway Code 164.6, and Caltrans Director's Policy 35 (DP-35), and other applicable State and Federal statutes and regulations.

7. CONNECTIVITY & ACCESSIBILITY

Provide transportation choices and improve system connectivity for all freight modes.

Freight and California's Economy

Freight transport is a vital component of California's regional and statewide economies. In 2021, California's economy was comparable to the fifth largest economy in the world, with the State's GDP at \$3.36 trillion.¹² The State's freight sector is broadly defined to encompass industries that heavily rely on the transportation of their raw materials, intermediate goods and components, as well as their finished products. The sector includes businesses in the transportation, warehousing, utilities, trade, manufacturing, construction, agriculture, and mining industries. California's economy depends on an efficient, integrated, sustainable, and multimodal freight transport system. Understanding the relationship between freight transportation and the economy is critical for State and local agencies to consider future freight transport system actions and how to optimize opportunities for growth in California. For more information on California's freight competitive position, refer to **Chapter 2** and **Appendix C**.

California's Freight Assets

California's freight system includes a vast inventory of infrastructure, which support the various freight dependent industries within the state. Currently, California has 12 seaports, 12 airports with major cargo operations, two Class I railroads and 27 Class III railroads, three existing and one future commercial land border ports of entry (POE) with Mexico, approximately 19,390 miles of hazardous liquid and natural gas pipelines, and a large warehousing and distribution sector. (**Chapter 3A** provides more information). Below, **Figure 0.1** shows California's major freight facilities mentioned above.



Figure 0.1: Major Freight Facilities in California. (Source: Caltrans, 2023)

Trends and Issues

The CFMP 2023 covers several technological innovations and potentially disruptive trends such as e-commerce, autonomous trucks, and the greening of the freight industry. These innovations could potentially impact established supply chains, and the CFMP provides some insight into future implications these innovations may have for California's freight system.

Over the past 10 years, California and the world have been experiencing the implications of shifting consumer behaviors from in-store (brick and mortar) to e-commerce (via the internet). The advent of e-commerce has not only altered how land is used in communities, but also how, when, and where goods are delivered. E-commerce is driving changes in warehouse construction from 30 to 40-foot-high, 100,000 square-foot facilities operated through manual labor to high cube 60-foot high, 500,000+ square-foot, automated, fully electrified warehouses employed with highly trained/ skilled workers.

The continued shift to home delivery means more brick and mortar businesses are closing, causing local governments and property owners to consider how land use and zoning codes may need to be adjusted. Therefore, businesses are rethinking site selection, while educators and skilled workers are seeking out opportunities to gain skills needed to compete in this new economic reality. E-commerce has been greatly accelerated by the COVID-19 pandemic, which is discussed in **Chapter 4**. During the pandemic, many brick and mortar stores were closed and many consumers decided to buy consumer goods through online retailers which has continued post-pandemic. There has also been a significant rise in online purchasing and home delivery of perishable goods (such as food), and home delivery of prepared meals from restaurants. These developments and disruptions are now factors that businesses must consider before opening a physical store.

Similarly, semi-automated marine terminals and warehouses, and the increasing use of robotics in logistic facilities are improving supply chain efficiencies while improving workplace safety. Ongoing policy development around these technologies is necessary to understand and respond to how these new technologies will impact the freight industry and its workforce. While technological advancements may result in significant changes to freight transportation, these advancements may also provide benefits to the transportation system through improvements in efficiency, reliability, and safety. These benefits and costs need to be considered when planning the future freight system in California. As California's freight industry evolves to be cleaner and more efficient, the State must continue to closely monitor and derive the necessary policies and activities to grow California's economy while protecting its most-valued resources, its environment, and people.

CFMP 2023 Outreach

The CFMP 2023 tells the story of the freight industry in California. Stakeholders representing disadvantaged communities, freight-related industries, regulators, non-governmental organizations, and the CFAC were consulted extensively during various stages throughout the development of the plan. These stakeholders provided multifaceted perspectives on statewide freight issues, as well as potential solutions. Through engagement efforts including large public forums, and at other times through industry specific workshop, telephone, in-person discussions, or online surveys, stakeholders identified critical concerns and issues from their perspectives. The issues and concerns generally fell into one of the following six categories:

1. Competitiveness
2. Regulatory burdens
3. Congestion
4. Technology adaptation
5. Workforce
6. Sustainability

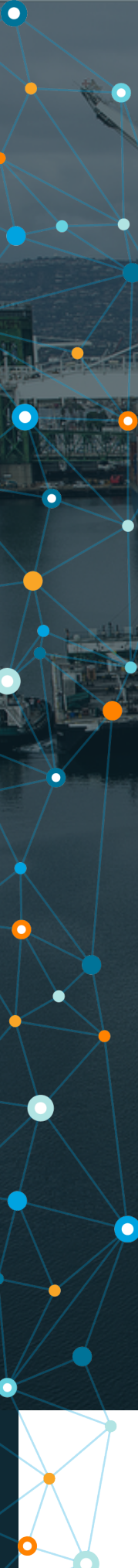
CFMP 2023 Implementation

Considering the many dimensions of the freight system and its impacts on the economy and environment, developing a freight strategy is an extensive process. The CFMP 2023 proposes specific objectives and strategies to support the accomplishment of the seven goals. The goals, objectives, and strategies of the CFMP 2023 incorporate many of the strategies of the CFMP 2018, as well as the CSFAP. The CFMP 2023 also contains several new strategies, which are reflective of changes in legislation, department policy, and private industry trends, public outreach, and engagement efforts, amongst other changes since the 2018 CFMP was adopted.

Examples of these strategies are listed below:

- Strategy EP-3-A: Identify and actively advocate for workforce mobility, accessibility, and training needs and job training programs through collaboration with the freight industry and California's higher education system
- Strategy EP-4-A: Identify incentives for the retention, expansion, and new development of logistics industry facilities (warehouses)
- Strategy ES-2-D: Explore decarbonization of last mile delivery to decrease the freight system's impact on air quality in dense urban environments
- Strategy HC-2-B: Establish development standards to avoid and mitigate environmental and social impacts of freight on communities
- Strategy CA-1-A: Freight plan priority for projects implementing state-of-the-art and demonstration technologies
- Strategy CA-6-B: Support off-hour delivery/pick-up strategy development

In addition to these strategies, the State recognizes the need to develop more projects that reflect and align with California's climate change goals. **Chapter 6A** identifies several objectives and strategies that will reduce GHG emissions from the freight sector, while **Chapter 6B** highlights a number of policies and project types that the State is working towards to achieve better protection of its communities and environment while leading to further innovation within the freight industry.



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Chapter 1: Vision, Goals, and Objectives