DRAFT FOR PUBLIC COMMENT

California Sustainable Freight Action Plan

Public Workshop

January - February 2016

WWW.CALIFORNIASUSTAINABLEFREIGHTACTIONPLAN.ORG

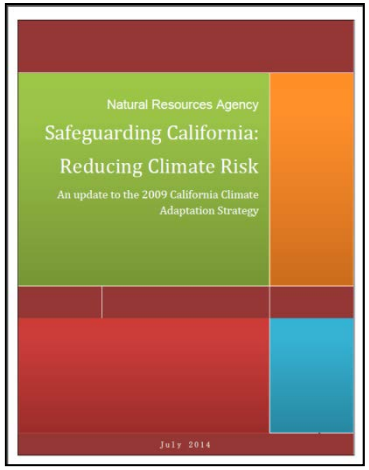
Governor's Executive Order B-32-15: California Sustainable Freight Action Plan

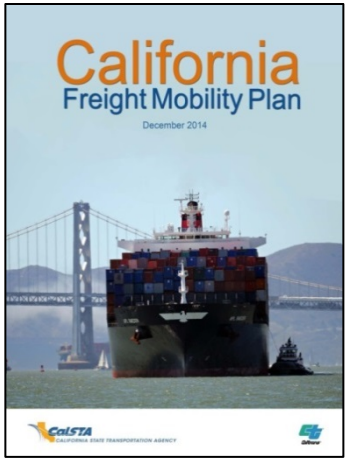
State agencies, in consultation with stakeholders, to develop plan by July 2016:

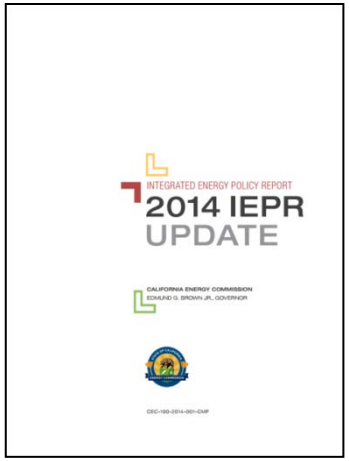
- Targets for efficiency, zero emission technology, and economics
- Potential actions to advance State objectives
- Corridor-level freight pilot projects

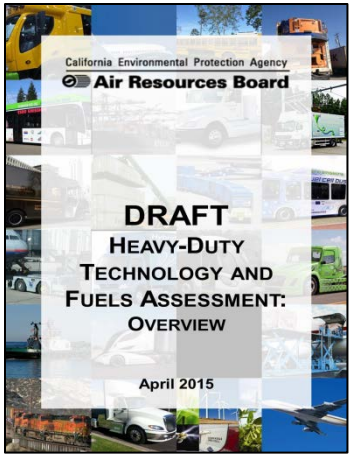
Multi-decade, iterative process to transform California's freight system

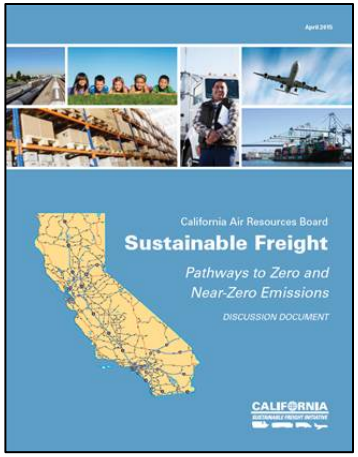
Relation to Other Plans

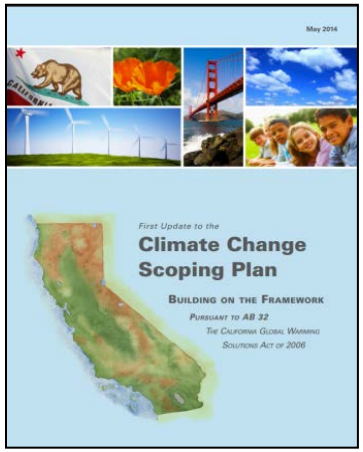












California 2040
TRANSPORTATION PLAN
Integrating California's Transportation Future

Process and Timeline

Ongoing	California Freight Advisory Committee Mtgs.
Aug. 2015 – Feb. 2016	Efficiency Group Meetings
Oct. 2015	Public Webinar
Jan. - Feb. 2016	Public Workshops and Webinar
Spring 2016	Draft Plan Release by Agencies
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2016 +	Implement, Review, and Adapt

Action Plan Components

- 2050 Vision and Guiding Principles
  - Statement for public comment at today's workshop
- Targets for 2030
  - Draft targets for public comment at today's workshop
  - Final targets to be identified in Draft Plan
- Agency Actions
  - Draft list for public comment at today's workshop
  - Proposed action descriptions and timelines in Draft Plan
- Pilot Projects
  - Concepts for public comment at today's workshop
  - Further evaluate concepts, and identify options for agency support in Draft Plan

Draft 2050 Vision

Freight in California is moved on a modern, integrated, and resilient system that continues to support California's economy and livability. It is transported safely and efficiently by zero emission equipment everywhere feasible, and near-zero emission equipment powered by clean low-carbon renewable fuels everywhere else.

Draft Targets for 2030

- System Efficiency:
  Improve freight system efficiency by 25% by 2030
- Technology:
  Deploy over 100,000 freight vehicles and equipment capable of zero emission operation and maximize near-zero emission freight vehicles and equipment powered by renewable energy by 2030
- Economy:
  Foster future economic growth within the freight and goods movement industry by promoting flexibility, efficiency, investment, and best business practices through State policies and programs that create a positive environment for growing freight volumes, while working with industry to lessen immediate potential negative economic impacts

System Efficiency Metric

$$\frac{\textbf{CA Gross Domestic Product of Freight Sector (GDP)}}{\textbf{CA Carbon Dioxide Equivalent from Freight Sector (CO2e)}}$$

- Freight sector output per ton of greenhouse gas (GHG) emissions
- Promotes low carbon economic growth
- Acknowledges the role of business profit margins, by including GDP
- CO2e aligns with the State's climate goals and policies

Technology Metric

- Vehicle and equipment count
- Acknowledges role of both zero and near-zero emission freight technologies
- Multiple possible pathways across the different freight vehicle and equipment sectors
  - Cargo Handling and Ground Support Equipment
  - Forklifts
  - Locomotives
  - Ocean-Going Vessels
  - Transport Refrigeration Units
  - Trucks

Agency Actions

Action concepts the agencies are considering for development over the next five years to help achieve progress towards the 2030 freight targets

- Concepts vary in level of development
- Range of implementation paths being considered
  - Data, research and analysis
  - Planning
  - Regulation
  - Funding and incentives
  - Advocacy, outreach and coordination

Agency Actions (cont.)

- System Efficiency
- Advanced Technologies
- Freight and Fuel Infrastructure
- Alternative and Renewable Fuels
- Freight Facilities and Hubs

System Efficiency

- Develop tools for freight data collection, analysis, and modeling to enhance knowledge and planning for freight improvements
- Support development of truck travel data and a statewide information platform
- Develop and implement freight priority traffic management systems such as signal priority and eco-routing
- Accelerate and support the development of dynamic truck travel information and drayage optimization

System Efficiency (cont.)

- Build multi-modal capacity with advanced technology into new freight hubs (e.g., zero emission rail spur at major distribution center)
- Support handling of international containers at on-dock rail facilities
- Increase off-peak delivery
- Eliminate bottlenecks in key locations along critical freight corridors
- Evaluate the feasibility of an all-electric freight container transport system along primary freight corridors

Advanced Technologies
Trucks

- Strengthen opacity, certification, warranty requirements
- Increased manufacturer certification flexibility on innovative and advanced technology
- May propose new CA Phase 2 greenhouse gas standards
- Working with U.S. EPA to develop lower NOx standards

Advanced Technologies
Trucks

- Delivery vans/small trucks – accelerate use of zero emission vehicles for last mile delivery
- Support truck platooning technology
- Develop and implement state-of-the-art truck scale technology

Advanced Technologies
Equipment

- Large Spark-Ignition (Forklifts) - Phase in zero emission equipment
- Airport Ground Support - Purchase requirements for zero emission models
- Transport Refrigeration Units (TRU) - Phase out use of fossil-fueled TRU for cold storage

Advanced Technologies
Vehicle and Equipment Electrification

- Research opportunities to integrate battery storage with transportation electrification
- Provide technical information to the California Independent System Operator to support their update of the Vehicle-Grid Integration Roadmap
- Support demonstrations that will help develop and commercialize vehicle-grid integration technologies

Advanced Technologies
Roadways, Bridges, and Supporting Facilities

- Integrate intelligent transportation systems into State roadside facilities and land ports of entry for monitoring, traveler information, and smart parking systems
- Use innovative technology, techniques, and material during construction to encourage system preservation and reduce trip delay

Advanced Technologies
Ocean-Going Vessels

- Advocate for tighter international emission standards, plus efficiency targets for existing vessels
- Define "Super Low-Emission Efficient Ship;" use incentives for advanced technologies
- Evaluate expansion of At-berth rule to capture additional vessels/reductions

Advanced Technologies
Locomotives and Aviation

- Preparing petition to U.S. EPA in 2016 for stricter locomotive emission standards on newly built and remanufactured engines

- Support development and deployment of Next Generation aviation data, information and air traffic management systems

Advanced Technologies
Investments

- Invest in advanced vehicle and equipment technology demonstrations/deployments, intelligent transportation systems, and other freight technologies
  - Identify opportunities to leverage funding (e.g., Department of Defense and ports)
  - Prioritize zero emission and low-NOx equipment
- Provide forums and outreach to increase awareness of advanced technology options and their status in the freight sector

Freight and Fuel Infrastructure

Roadways, Bridges, and Supporting Facilities

- For new Caltrans freight infrastructure investments, consider using the Proposition 1B Trade Corridor Improvement Fund (TCIF) process to fund highway, road, railway, and port projects that increase mobility while reducing emissions
    - Use these investments to spur private investment in freight transportation infrastructure
    - Focus investments on corridors and gateways with high freight volume

Freight and Fuel Infrastructure

Roadways, Bridges, and Supporting Facilities

- Fix-it-first model for bridges, culverts, highways, and intelligent transportation systems, in key freight corridors using asset management strategies
- Address bridge safety, and identify areas where inadequate bridge infrastructure leads to bottlenecks

Freight and Fuel Infrastructure

Roadways, Bridges, and Supporting Facilities

- Invest in strategic grade separation to improve safety and reduce congestion
- Ensure that roadway design and planning considers heavy duty truck geometries for the benefit of all roadway users
- Invest in security enhancements for the freight transportation system
- Coordinate for emergency preparedness among State and Federal agencies
- Promote advanced transportation safety systems

Freight and Fuel Infrastructure

Roadways, Bridges, and Supporting Facilities

- Consider freight toll lanes as project alternatives to improve freight system reliability and reduce emissions, where appropriate
- Research and invest in electric charging infrastructure for public truck parking facilities in primary trade corridors
- Investigate the possibility for increased truck weight and/or length
- Evaluate opportunities for new roadway and rail construction to provide charging capability

Freight and Fuel Infrastructure
Rail and Waterway

- Increase opportunity for utilization of rail shuttles, inland ports, and waterways that lead to freight distribution hubs with less impact on nearby communities
- Encourage and explore funding opportunities for short line rail track upgrades to improve system efficiency
- Invest to reduce track capacity conflicts between freight rail and passenger rail in high priority freight corridors
- Implement positive train control for freight railroad lines carrying certain toxic materials

Freight and Fuel Infrastructure
Fuels

- Explore opportunities to further support and fund installation of electric charging and hydrogen infrastructure that can support medium-duty (MD), and heavy-duty (HD) vehicles along the State's major corridors
  - Consider additional incentives and identify cost-share mechanisms for ports, terminal operators, and last-mile delivery companies
  - Fund improvements to HD zero emission vehicle infrastructure technology advancement, equipment optimization, and scalability
  - Support standardization of MD/HD charging protocols

Freight and Fuel Infrastructure
Fuels

- Provide analytical support to California Public Utilities Commission's development of transportation electrification planning
- Leverage Regional Zero Emission Vehicle Readiness Plans to apply lessons learned for deployment of zero emission vehicle infrastructure for freight
  - Encourage metropolitan planning organizations to develop regional infrastructure plans to support MD/HD zero emission vehicles along freight corridors

Freight and Fuel Infrastructure
Fuels

- Assess impacts that vehicle electrification in the freight sector will have on the grid
- Identify opportunities for renewable electricity resources and daytime over-generation to fuel zero emission vehicles in freight
- Provide technical information to the California Public Utilities Commission to support their development of strategies that defray impacts of zero emission vehicle demand charges

Alternative and Renewable Fuels

- Invest in renewable fuel production
- Collect fuel price information and expand energy price forecasts for freight sector alternative fuel options
- Develop a natural gas vehicle research roadmap to identify opportunities to integrate renewable natural gas (RNG) into freight applications

Alternative and Renewable Fuels (cont.)

- Assess inclusion of aviation, interstate locomotive, and marine fuels in:
  - 2018 Low Carbon Fuel Standard rulemaking
  - Post 2020 Cap and Trade program
- Low NOx, low PM, low carbon intensity diesel requirement

Freight Facilities and Hubs

- Further deployment of cleaner technologies
- Collect data from freight hubs to inform which additional strategies are pursued to reduce emissions, including efficiency improvements, amendments to source-specific rules, facility emissions cap, enforceable agreements, etc.
- Develop freight handbook that identifies best practices for the siting, design, and operation of freight facilities that promotes public health and safety

Freight Facilities and Hubs (cont.)

- Coordinate with California ports to promote energy conservation and efficiency measures, renewable generation, and advanced technology freight equipment
- Study and improve truck access to urban commercial buildings

Pilot Projects
Objectives

- Measureable progress towards freight targets within a 2030 timeframe
- System transformation potential
- Opportunity for integrated State agency support
- Scalability

Pilot Projects
Concepts for Further Evaluation

- Food Consolidation and Distribution Hub (Northern California)

  Agricultural consolidation and distribution center to promote delivery efficiency and clean truck /rail use

- Urban Delivery (Bay Area)

  Strategies for addressing urban freight congestion and emissions: off-peak delivery, truck parking and charging, collaborative logistics, cargo bicycles, and local workforce development

- Dairy Biogas for Freight Vehicles (San Joaquin Valley)

  Biomethane production and fueling infrastructure for trucks

Pilot Projects
Concepts for Further Evaluation

- Advanced Technology Truck Only Lane (Southern California)

  Dedicated truck lane with options for intelligent transportation systems, connected vehicle technologies, collaborative logistics, zero and near-zero emission trucks, truck platooning

- Advanced Technology Truck Fast Lane (Border)

  Dedicated clean truck lane with intelligent transportation systems and connected vehicle technologies that allows for faster inspection and processing of trucks crossing the border

Pilot Projects
Next Steps

- Gather additional information on potential for inclusion of
  - Zero and near-zero vehicle and equipment technologies
  - Intelligent transportation systems
  - Renewable, low carbon energy and fuels
- Evaluate potential opportunities to
  - Increase system efficiency
  - Reduce emissions
  - Support local economic development
- Identify potential partners and State agency roles

Economic Impacts

- Evaluate potential impacts of freight actions on the California economy, industry sectors, and residents
  - Estimate direct costs and savings
  - Model the macroeconomic impact of the Action Plan on the California economy, California industry, and residents

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Contact Us

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