Toward a Clean, Efficient, Low Carbon Freight System
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California Sustainable Freight Strategy

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Freight transport system

Modes & Facilities
Cleaner fuels & equipment are reducing pollution, but more needed to meet targets

NOx
(Tons per day)

SOx
(Tons per day)

PM2.5
(Tons per day)

GHG
(million metric tons CO2-e per year)
Sustainable freight: pathways to zero and near-zero emissions

- Immediate ARB actions
- Near-term ARB measures
- Vision for the future
- Broad-based approaches
By July 2016, State agencies, in consultation with stakeholders, will develop action plan that:

• Establishes targets to:
  – Improve freight efficiency
  – Transition equipment to zero/near-zero emissions
  – Increase competitiveness of California system

• Identifies actions to advance State objectives

• Defines corridor-level freight pilot projects
Challenge: envision the system in 2030 & 2050

• Future freight system
  – Hub locations and modes
  – Equipment and information technology
  – Freight and fuel/energy infrastructure

• Resilient and responsive to change
  – Economic demands and opportunities
  – Manufacturing and logistics innovation
  – Government expectations
Increasing efficiency – the sweet spot
Company efficiency: containers that use all cargo space
Facility efficiency: zero-emission automated terminal

Courtesy of Long Beach Container Terminal
Sector efficiency: mega ships
System efficiency: infrastructure to cut delays

Colton Crossing Flyover
Success: meet data/research needs

• Cargo trends, innovations, and forecasts
• Metrics for efficiency and competitiveness
• Intelligent transportation systems and technology development/demonstration
• Systemwide analysis tools (performance, energy, emissions, economics)
Success: recognize regional differences...and opportunities
Success: connect to national and international freight systems

Global Shipping Routes at wired.com

Caltrans, 2014
Success: look to industry leadership on sustainability

• All: improve system efficiencies, plus support more ambitious standards
• Logistics providers: use cleaner, more efficient equipment that relies on low carbon energy
• Cargo owners: speak with wallet -- preferences for green transport
• Business: attract investment capital, lead green markets, train & develop workers