Update on California Actions to Minimize Community Health Impacts from Freight

California Air Resources Board Meeting March 21, 2019
Path Forward on Freight

- Protect communities near freight facilities
  - Tighten CARB rules & add facility infrastructure/compliance
  - Support district facility-based measures & port initiatives
  - Pursue stricter federal & international standards
  - Coordinate & expand incentives for freight transition to zero emission operations
New CARB Freight Actions (1st Board hearing dates shown)

Zero Emission (ZE) Operation

- ZE truck certification ✔
- ZE trucks-mfrs ✔
- ZE ships at berth ✔
- Rail yard idling ✔
- ZE TRUs ✔
- ZE forklifts ✔
- ZE trucks-fleets
- ZE drayage trucks
- ZE cargo equipment

2018
- Truck GHG ✔
- Truck OBD ✔

2019
- Handbook-1 Warehouses
- Heavy-duty Omnibus
- Heavy-duty I/M
- Harbor craft

2020
- Handbook-2 Ports, Rail
- Low-emission diesel fuel

2021
- Non-preempted locomotives

Lower Emissions
CARB strategies already implemented to cut freight emissions and health risk

<table>
<thead>
<tr>
<th>Trucks</th>
<th>Ships</th>
<th>Locomotives</th>
<th>Equipment</th>
<th>Harbor Craft</th>
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<tr>
<td>• Fuel/engine</td>
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<td>• In-use trucks/turnover</td>
<td>• At berth reductions</td>
<td>• Fleet emission limits for South Coast</td>
<td>• Port &amp; rail equipment</td>
<td>• Harbor craft engines</td>
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<tr>
<td>• GHG limits</td>
<td>• Ship incinerator ban</td>
<td>• Diesel soot reduction at rail yards</td>
<td>• Forklifts</td>
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<td>• Idling and smoke limits</td>
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<td>• Airport equipment</td>
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<tr>
<td>• In-use compliance</td>
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<td>• Transport refrigerators</td>
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Incentives to demonstrate & deploy cleaner models
Progress in Reducing Freight Emissions Statewide (2000-2035)

- **NOx**: Decrease from 1500 Tons/Day in 2000 to 300 Tons/Day in 2035.
- **PM2.5**: Decrease from 60 Tons/Day in 2000 to 10 Tons/Day in 2035.
- **SOx**: Decrease from 150 Tons/Day in 2000 to 10 Tons/Day in 2035.
- **GHG**: Steady increase from 10 Million Metric Tons/Year to 45 Million Metric Tons/Year.
But Freight Impacts are Still Significant

~1/3 of economy/jobs, ~1/2 of air pollution

Freight Impacts:

• Elevated cancer risks in communities near hubs
• Premature death, cardiac and respiratory disease
• Largest contributor to unhealthy levels of regional fine particulate and ozone pollution
• Rising greenhouse gas emissions
Public Engagement

- Input from communities, agencies, industry
- Monthly meetings with CA Cleaner Freight Coalition
- Industry workgroups
CARB Freight Actions Designed to Meet Multiple Objectives

- **Cut community health risk**  
  (support AB 617 emission reductions)

- **Attain regional air standards**  
  (support State Implementation Plan)

- **Mitigate climate change**  
  (support Scoping Plan and SLCP Plan)
### Progress on Freight Actions Underway

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<td>8. Freight regulations reporting system</td>
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<td>4. Transport refrigeration units</td>
<td>10. Advocacy with other agencies</td>
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<td>5. Rail yards and locomotives</td>
<td>11. South Coast facility measures</td>
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<td>6. Harbor craft</td>
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(C) CARB
Freight Handbook

• Guidance on siting, design, construction & operation of freight facilities to minimize impacts
• Strategies to reduce emissions and exposure, plus support community participation
Handbook: Objectives

• Respond to community requests for “official” CARB recommendations that advocates can use locally
• Inform local decision makers of tools available to avoid/mitigate pollution
• Share “best practices” with facility developers
• Make a compelling case for facilities designed from the ground up to support zero-emission operations
Handbook: Structure

Main document:

Modules:

Next public meetings: Spring 2019
Cleaner Trucks

- ZE Advanced Clean Trucks
  *To be implemented concurrently:*
  - Phase 1: Manufacturer sales %
  - Phase 2: Fleet purchase %
- Heavy-duty Omnibus regulation for new engines
- Heavy-duty Inspection & Maintenance
- Next public meetings: April 2019
Ocean Going Vessels At-Berth

- Require more visits to reduce emissions at berth
  - Include more visits, vessel types, ports
  - Hold ports, terminals, technology providers accountable for doing their part too
- Next public meetings: May 2019
Vessels: Berth by Berth Analysis to Identify Feasible Control Options

Example shows limited room for a barge to fit and still allow access for vessel traffic.
Vessels: Potential Reductions at Berth

Diesel PM cancer risk
~ 70% in Bay Area
~ 60% in South Coast

NOx
~ 6 tpd statewide
~ 3 tpd in South Coast
Transport Refrigeration Units (TRU)

- Focus on transitioning to ZE operation
  - ZE truck TRUs
  - Plug-in trailer TRUs when stationary
  - Facility infrastructure
  - Electronic tracking
- Next public meetings: Mid-2019
TRU: Identifying Infrastructure Needs

• Require facilities to expand plug-in infrastructure to allow for ZE operation if TRUs are stationary
  – Evaluate facilities and locations needed
TRU: Operations at Cold Storage Warehouses Pose Elevated Risks

• Near-source cancer risks at high-activity facilities (~1,000 in a million)

• Facilities often sited in clusters

Example: Salinas CA
Rail Yards and Locomotives

- Staff working to consolidate two new regulatory measures
- UP and BNSF are complying with the 1998 Agreement
- ZE demo projects & Tier 4 grants in progress
- Next public meetings: Late 2019
Rail Yards: Activity of Older Locomotives Increasing in South Coast

47% Increase in Tier 0+/1+ Activity

Tier 0+ and Older
Tier 1+
Tier 2
Tier 3/ULEL
Tier 4
(Dirtiest → Cleanest)
Harbor Craft

• Focus on cleaner combustion for in-use and new engines
• Support introduction of zero-emission technologies in ferries, excursion, other
• Next public meetings: Spring 2019
Harbor Craft: Measuring Engine Space for Upgrade (Cal Maritime Academy)
Recent Freight Facility Funding

- $205 million in CARB grants for zero/near-zero emission equipment and infrastructure at facilities
- 11 projects are located in disadvantaged communities
- Projects range from electric locomotives, trucks and TRUs to a hybrid tugboat and electric cranes and forklifts

![Map of Project Locations and Vehicle Deployment Areas](image)
Freight Regulation Reporting System

A new web-based system for registration, compliance reporting & analysis, enforcement, and public access.
California Sustainable Freight Action Plan

- Accelerating zero-emission operations
- Increasing efficiency
- Developing the workforce
Advocacy with Other Agencies
South Coast District: Board Direction on Facility-Based Freight Measures

- Warehouse Distribution Centers: Rule concept + econ study
- Railyard & Intermodal Facilities: Rule + explore MOU
- Commercial Marine Ports: MOU
- Commercial Airports: MOU

CARB
To Further Progress on Sustainable Freight

- Adoption of proposed CARB regulations
- Emphasis on strategic development of freight infrastructure with CPUC, CEC, utilities
- Continued incentives for ZE demonstration and deployment (equipment + infrastructure)
- Local political will to insist on zero-emission operations at new freight facilities