Freight Programs - Port and Rail Emissions Reductions

Transportation & Toxics Division
November 28, 2018
California freight strategies are effective

Change in cancer risk since 2005:

- 85% reduction at largest seaports
- 40-70% reduction at highest risk rail yards
Current and New Drayage (Port) Truck Strategies

- Idling and smoke limits
- GHG limits for tractor-trailers
- Community concerns with idling and travel through neighborhoods
- Transition to zero-emission operation
New Strategies for Transport Refrigeration Units

• Transition to zero-emission operation
• Facility requirements for infrastructure
Current and New Locomotive Strategies

- Fuel standards
- Fleet emission limits for South Coast
- Diesel soot reduction at rail yards
- Move beyond Tier 4 locomotive technology
Existing CARB strategies to cut freight emissions and health risk

**Ships**
- Clean fuel standards
- At berth reductions
- Ship incineration ban
- Incentives and demonstration projects

**Harbor Craft**
- Clean fuel standards
- Retrofits
- Replace engines
- Incentives and demonstration projects

**Equipment**
- Clean fuel standards
- Port & rail equipment
- Incentive and demonstration projects
Current and New CARB rules for ships at berth

<table>
<thead>
<tr>
<th>Year</th>
<th>% of vessel visits</th>
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<tbody>
<tr>
<td>2014</td>
<td>50%</td>
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<tr>
<td>2017</td>
<td>70%</td>
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<tr>
<td>2020</td>
<td>80%</td>
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New Rule
More visits, vessel types (tankers, auto)

Shore power ready:
- 23 terminals/63 berths
- >200 vessels
Shipping - How can we collaborate?

- Shore power + standardized connections
- On-board vessel emission controls + testing
- Tighter IMO standards (NOx, PM, GHG)
- “Green lane” incentives for cleaner vessels on trans-Pacific routes
- Zero emission
- Bulk purchasing
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