Purpose of tonight’s meeting

- Receive your comments on the draft health risk assessments
- Consultation to obtain your ideas on future emission reduction actions
Background

- This effort is part of our commitment to address pollution impacts on communities
  - Implements the ARB Goods Movement Plan
  - Required by the ARB/UP/BNSF Railroad Agreement

- The State’s goals are to:
  - Reduce exposure to diesel PM as quickly as possible
  - Reduce risks by at least 85 percent by 2020
  - Obtain the emission reductions needed to attain air quality standards
Summary of Health Risk Assessment Findings

Estimated Average Cancer Risk (Chances in a Million)

- >100*: 140
- 51-100*: 70
- 26-50*: 35
- 10-25*: 15

Estimated Exposed Population Per Cancer Risk Range (Non Cumulative)

1,000: 1000
3,200: 1000
5,000: 1000
12,600: 1000

* Cancer Risk Range (Chances in a Million)
Findings:

Locations of Potential Cancer Risks due to the Railyard Diesel PM Emissions
Findings:

Locations of Potential Cancer Risks due to Non-Railyard Diesel PM Emissions
Next Steps

- Evaluate comments and complete the HRAs
- Evaluate feasible mitigation measures to reduce health risks
ARB Railyard Contacts

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- **Lead Staff**
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- **ARB Railyard HRA Website:**
  - [http://www.arb.ca.gov/railyard/hra/hra.htm](http://www.arb.ca.gov/railyard/hra/hra.htm)
Actions to Reduce Health Risk
Approach to Reducing Emissions

- ARB regulations
  - Fuels
  - Cargo handling equipment
  - Transport refrigeration units
  - Heavy-duty diesel on-road trucks and off-road vehicles
- U.S. EPA regulation
  - Locomotives
- Voluntary agreements
  - 1998 South Coast/2005 Statewide
- Railroad yard locomotive replacement program
- Funding programs
  - Carl Moyer Incentives
Benefits of California Railyard Diesel PM Emission Reduction Measures

- **2005-2007:**
  - CARB diesel fuel for intrastate locomotives
  - 2005 railyard agreement

- **2005-2010:**
  - Measures above plus:
  - 1998 NOx locomotive fleet average agreement (South Coast)
  - ARB cargo handling equipment regulation
  - ARB on-road heavy-duty truck regulation
  - ARB transport refrigeration unit regulation

\[ \approx 15-20\% \]
\[ \approx 40-50\% \]
# Progress Report - Existing Measures

## Diesel Fuel Standards

<table>
<thead>
<tr>
<th>Fuel Type</th>
<th>Maximum Sulfur Level (ppmw)</th>
<th>Aromatics Maximum (% by volume)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Prior</td>
<td>2006-2007</td>
</tr>
<tr>
<td>CARB Diesel</td>
<td>500</td>
<td>15</td>
</tr>
<tr>
<td>EPA On-Road Diesel</td>
<td>500</td>
<td>15</td>
</tr>
<tr>
<td>EPA Non-road Diesel</td>
<td>5,000</td>
<td>500*</td>
</tr>
</tbody>
</table>

* Lower to 15 ppmw in 2012.
Progress Report - Existing Measures
Average Diesel Fuel Sulfur Levels Consumed by Locomotives in California

![Graph showing sulfur content in ppmw for years 2005, 2007, and 2012.]

- **2005**: 1100 ppmw
- **2007**: 80 ppmw
- **2012**: 10 ppmw

Sulfur content, ppmw
Progress Report - Existing Measures
South Coast Railyard Diesel PM Emission Reductions:
Line-Haul Locomotives

* Based on 7 South Coast railyards line-haul locomotives emissions
Progress Report - Existing Measures
South Coast Railyard Diesel PM Emission Reductions: Cargo Handling Equipment

Diesel PM Emissions (tons per year) *

Year

2005 2007 2010 2015 2020

* Based on 7 South Coast railyards cargo handling equipment emissions
Progress Report – Existing Measures
South Coast Railyard Diesel PM Emission Reductions: New On-Road Trucks

* Based on 7 South Coast railyards on-road truck emissions
Possible Additional Measures

- 2005-2020:
  - U.S. EPA locomotive rulemaking
  - California replacement of switch locomotives
  - ARB in-use truck measure

≈60-80%
Progress Report – Potential Measures
South Coast Railyard Diesel PM Emission Reductions:
Switcher Locomotive Replacement by 2010

* Based on 7 South Coast railyards switcher locomotives emissions
Progress Report - Potential Measures
South Coast Railyard Diesel PM Emission Reductions:
In Use On-Road Trucks

In addition to the existing on-road heavy-duty truck regulation.
Progress Report - Potential Measure
South Coast Railyard Diesel PM Emission Reductions: U.S. EPA Locomotive Rulemaking

- In addition to the existing Line-haul locomotive fleet average agreement.

* Based on 7 South Coast railyards line-haul locomotives emissions
Progress Report - Potential Measure
South Coast Railyard Diesel PM Emission Reductions:
Existing Line-haul Locomotive Aftertreatment Certification

In addition to the existing Line-haul locomotive fleet average agreement and U.S. EPA Locomotive rulemaking.

* Based on 7 South Coast railyards line-haul locomotives emissions
Progress Report - Existing + Potential Measures
Total Benefits of the Emission Reductions Measures
for the South Coast Railyards

* Based on 7 South Coast railyards diesel PM emissions