Presentation Overview

- Meeting Purpose/Public Review Period
- Background
- Methodology for Preparing the Draft Assessments
- Results of the Draft Assessments
- Actions to Reduce Health Risk
- Next Steps
Purpose and Public Review

☑ Purpose of tonight’s meeting:
  – Present draft analyses and explain results
  – Initiate process for review and comment
  – Explain emission reduction efforts underway

☑ After tonight’s meeting, there will be:
  – Opportunity for comments within 30 days
  – Consultation to obtain your ideas on possible future emission reduction actions
# Health Risk Assessment Timelines

<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Railyard</td>
<td>Railroad</td>
</tr>
<tr>
<td>Commerce/Eastern</td>
<td>BNSF</td>
</tr>
<tr>
<td>Hobart</td>
<td>BNSF</td>
</tr>
<tr>
<td>Richmond</td>
<td>BNSF</td>
</tr>
<tr>
<td>Stockton</td>
<td>BNSF</td>
</tr>
<tr>
<td>Watson</td>
<td>BNSF</td>
</tr>
<tr>
<td>Commerce</td>
<td>UP</td>
</tr>
<tr>
<td>LATC</td>
<td>UP</td>
</tr>
<tr>
<td>Mira Loma</td>
<td>UP</td>
</tr>
<tr>
<td>Stockton</td>
<td>UP</td>
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Background

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

- 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
Purpose of the Assessments

- Identify pollution sources in the railyards
- Determine exposures to the public
- Estimate the health risks
- Put the railyard risks into perspective with other sources
- Provide information needed to reduce the risks
Scope of the Draft Assessments

- Two major parts:
  - Health risk assessment for the railyard
  - Health risk assessment for significant diesel sources surrounding the community

- Separate report for each railyard

- Focus on diesel PM- other toxics evaluated, TACs small relative to diesel PM
Railyard Risk Assessment Methodology

- Prepare the best possible baseline emissions inventory
- Complete air dispersion modeling
- Provide estimates of health risks
- Determine other sources of risks
UP Colton Railyard with one-mile off-site boundary
Prepare Railyard Emissions Inventory

Diesel PM Emission Inventory

Locomotives (line-hauls, switchers, & services)

On-road trucks & vehicles

Cargo handling equipment

Off-road equipment

Stationary Sources (point & area)
## Summary of UP Colton Railyard 2005 Diesel PM Emissions

<table>
<thead>
<tr>
<th>DIESEL PM EMISSION SOURCES</th>
<th>UP Colton Railyard</th>
<th>Off-site Emissions**</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Tons/Year</td>
<td>Percentage</td>
</tr>
<tr>
<td><strong>LOCOMOTIVES</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>- Switch Locomotives</td>
<td>10.2</td>
<td>62%</td>
</tr>
<tr>
<td>(conducting yard operations)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>- Freight &amp; Through Trains</td>
<td>3.5</td>
<td>21%</td>
</tr>
<tr>
<td>- Service/Testing/Refueling</td>
<td>2.6</td>
<td>16%</td>
</tr>
<tr>
<td><strong>YARD TRUCKS</strong></td>
<td>0.19</td>
<td>1%</td>
</tr>
<tr>
<td><strong>OTHERS (Heavy Equipment and Emergency Generators)</strong></td>
<td>0.05</td>
<td>0.3%</td>
</tr>
<tr>
<td><strong>OFF-SITE MOBILE SOURCES (e.g., heavy duty trucks, etc.)</strong></td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td><strong>OFF-SITE STATIONARY SOURCES (e.g., public facilities, public utilities, etc.)</strong></td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td><strong>TOTAL</strong></td>
<td>16.54*</td>
<td>100%</td>
</tr>
</tbody>
</table>
Non-Railyard Emission Inventories

- Focus on diesel PM sources
- On road trucks and stationary sources
- EMFAC-2007, CEIDARS
## Summary of Nearby Non-Railyards Diesel PM Emission Inventory

<table>
<thead>
<tr>
<th>Sources</th>
<th>Tons per year</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mobile Sources</td>
<td>42</td>
</tr>
<tr>
<td>Stationary Sources</td>
<td>1.5</td>
</tr>
<tr>
<td><strong>TOTAL</strong></td>
<td><strong>43.5</strong></td>
</tr>
</tbody>
</table>
## Comparison of Local Diesel PM Sources with Regional Sources

(tons per year in 2005)

<table>
<thead>
<tr>
<th>Sources</th>
<th>Locomotive</th>
<th>Cargo Handling Equipment</th>
<th>On-Road Trucks</th>
<th>Other (e.g. Ships, Refriger. Trailers)</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>South Coast Air Basin</td>
<td>300</td>
<td>500</td>
<td>2,000</td>
<td>5,000</td>
<td>7,800</td>
</tr>
<tr>
<td>Port of LA/Long Beach</td>
<td>20</td>
<td>170</td>
<td>40</td>
<td>1,570</td>
<td>1,800</td>
</tr>
<tr>
<td>UP Colton Railyard</td>
<td>16.3</td>
<td>0.0</td>
<td>0.19</td>
<td>0.05</td>
<td>16.5</td>
</tr>
<tr>
<td>Nearby Roadways</td>
<td>--</td>
<td>--</td>
<td>43.5</td>
<td>--</td>
<td>43.5</td>
</tr>
</tbody>
</table>
Estimated Health Risks

- Combine air dispersion modeling results with toxicity data to estimate health risks
- Determine risks for cancer and non-cancer effects
- Express results as chances per million for cancer and a “hazard index” for non-cancer impacts
- Use toxicity data provided by the California Office of Environmental Health Hazard Assessment
UP Colton Railyard

Estimated Average Cancer Risk (Chances in a Million)

- **Average Risk**
- **Ambient Background**

* Cancer Risk Range (Chances in a Million)
Estimated Potential Cancer Risks

UP Colton Railyard
Estimated Potential Cancer Risks
Non-Railyard Sources (Off-Site)
Actions to Reduce Health Risks
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
  - Proposition 1B: Goods movement emission reduction program
Benefits of California Railyard Diesel PM Emission Reduction Measures

- **2005-2007**
  - CARB diesel fuel for intrastate locomotives
  - 2005 railyard agreement
  - Approx. 15-20%

- **2005-2010 (Additional Measures)**
  - 1998 NOx locomotive fleet average agreement (in South Coast Air Basin)
  - ARB cargo handling equipment regulation
  - ARB on-road heavy-duty truck regulation
  - ARB transport refrigeration unit regulation
  - ARB port and intermodal railyard drayage truck regulation
  - Approx. 50-65%
Possible Additional Measures

- 2005-2020:
  - U.S. EPA locomotive rulemaking (Spring 2008)
  - California replacement of switch locomotives

≈ 60-80%
Next Steps

- Begin public comment period
- Review the draft assessments
- Submit written comments to ARB (by April 14)
- Meet with interested stakeholders
- Evaluate any additional feasible mitigation measures
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➢ ARB Railyard HRA Website:
   – http://www.arb.ca.gov/railyard/hra/hra.htm