Draft ARB Health Risk Assessments for the UP City of Industry Railyard

March 11, 2008

California Environmental Protection Agency
Air Resources Board
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><strong>Railyard</strong></td>
<td><strong>Railroad</strong></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>
</tr>
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</table>
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
  - 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 City of Industry 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)
<table>
<thead>
<tr>
<th>Facility-wide Source Types</th>
<th>Tons per year*</th>
<th>Percentage*</th>
</tr>
</thead>
<tbody>
<tr>
<td>Locomotives</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Switch Locomotives</td>
<td>3.3</td>
<td>30%</td>
</tr>
<tr>
<td>Line Haul Locomotives</td>
<td>2.6</td>
<td>24%</td>
</tr>
<tr>
<td>Service/Maintenance</td>
<td>0.01</td>
<td>&lt;0.1%</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>10.9</strong></td>
<td><strong>100 %</strong></td>
</tr>
<tr>
<td>Cargo Handling Equipment</td>
<td>2.8</td>
<td>25%</td>
</tr>
<tr>
<td>On-Road Heavy-Duty Trucks</td>
<td>2.0</td>
<td>18%</td>
</tr>
<tr>
<td>Transport Refrigeration Units (TRUs) and Refrigerated Cars</td>
<td>0.3</td>
<td>2%</td>
</tr>
</tbody>
</table>

*Numbers and percentages do not add precisely due to rounding*
Non-Railyard Emission Inventories

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

<table>
<thead>
<tr>
<th>Sources</th>
<th>Tons per Year</th>
</tr>
</thead>
<tbody>
<tr>
<td>Heavy-Duty Diesel Trucks</td>
<td>27.6</td>
</tr>
<tr>
<td>Stationary Sources</td>
<td>0.02</td>
</tr>
<tr>
<td>Total</td>
<td>27.6</td>
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</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, Refrig. 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 City of Industry</td>
<td>5.9</td>
<td>2.8</td>
<td>2.0</td>
<td>0.3</td>
<td>10.9</td>
</tr>
<tr>
<td>Nearby Roadways</td>
<td>—</td>
<td>—</td>
<td>27.6</td>
<td>—</td>
<td>27.6</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
Estimated Potential Cancer Risks

UP City of Industry Railyard
Estimated Potential Cancer Risks

Non-Railyard Sources
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

- **2005-2010 (measures above plus)**
  - 1998 NO$_x$ 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

- \( \approx 15-20\% \)
- \( \approx 50-65\% \)
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 11)
- 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