Agenda

• Emissions Trends Summary
• System and Facility Overview
• 2005 Baseline Inventory
• Current and Proposed Mitigation Measures

— We need your help to identify additional ideas for potential emissions reductions

• Emission Trends – Past and Future
• Evaluation of Mitigation Measures
Emission Trends –
DPM Reductions from 2005 Baseline

• 2005 to 2007

DOWN 47%

Projected to 2020

DOWN 67%
Union Pacific System Overview

• Miles of Track
  • 32,300 in 23 States
  • 3,455 in California
  • 1,272 in Los Angeles area

• Employees
  • 50,000+ in US
  • 5,900 in California
Facility Overview

• 255 +/- acre auto distribution facility
• Yard Includes:
  – 2 Receiving/Departing Tracks
  – 12 Tracks used to Unload Vehicles from Rail Cars
  – 10 Support Tracks to Hold Rail Cars
  – Tracks for Rail Car Maintenance
• Facility Operates 24 Hours a Day, 365 Days a Year
• About 8 Trains a Day Originate or Terminate at the Mira Loma Yard
# 2005 Baseline Emissions Inventory

<table>
<thead>
<tr>
<th>Equipment Category</th>
<th>DPM Emissions (tpy)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Locomotives</td>
<td>4.4</td>
</tr>
<tr>
<td>- Line Haul</td>
<td>2.0</td>
</tr>
<tr>
<td>- Switch</td>
<td>2.4</td>
</tr>
<tr>
<td>Diesel-Fueled Trucks</td>
<td>0.2</td>
</tr>
<tr>
<td>Forklifts</td>
<td>0.2</td>
</tr>
<tr>
<td><strong>TOTAL</strong></td>
<td><strong>4.9</strong></td>
</tr>
</tbody>
</table>
Responding to Community Concerns

• Based on comments from the community, UP modified operations at the yard:
  – The majority of trucks entering and leaving the Yard are now using the Harrel Street gate (off of Etiwanda) instead of the Galena Street gate.
  – In addition, the Galena Street gate is closed to all traffic during drop off and pick up hours at the nearby school.
  – Signage on Galena Street directs delivery truck drivers to turn North.
  – Truck maintenance area has been moved further away from the school.
  – Continued use of ULEL switchers to move auto racks.
  – Conducted an analysis to determine if exclusive use of the Harrel Street gate would have an air quality benefits
Current UP Emission Reduction Measures

- Continued Aggressive Acquisition & Use of Tier 2 Road Locomotives With Advanced Emission Controls
  - 1,189 Tier 2 Locomotives thru October 2008
  - 5,680+ Tier 0, 1, or 2 Locomotives in the Fleet

- Continued Remanufacture of Older Locomotives With New, Lower Emitting Components
  - 2,800 Units Since 2000

- On Target for Tier 2 Fleet Average in SoCal by 2010
Current UP Emission Reduction Measures, Cont.

- **Ultra Low Emitting Locomotives (ULEL’s)**
  - Reduce NOx & PM Emissions by +/- 85%
  - Reduce Fuel Consumption by 16 - 37 %

- **Expanded Use of Technologically Advanced Switch Locomotives**
  - Green Goats - 6 in Mira Loma
  - Green Goats - 12 in South Coast
  - Gensets - 61 in South Coast
Current UP Emission Reduction Measures, Cont.

• Increased Use of Idle Control Devices (ICD’s) for Auto Start-Stop of Locomotives
  – 100% of CA Intrastate Units Equipped
  – 45% of UPRR Total Fleet
  – All New Locomotives Since 2001 Have Factory ICD’s

• Supported research and development efforts
  – UPRR has invested > $37M in locomotive R&D since 1989

• Aggressive Conservation = Lower Emissions
  – A 12% improvement in fuel efficiency achieved since 1995
Current UP Emission Reduction Measures, Cont.

- Use of cleaner fuels – only Ultra Low Sulfur Diesel (ULSD) is dispensed in CA
- Employee Training
  - Fuel Conservation Via Use of Simulators
  - Locomotive Shutdown Procedures
  - Stopping Visible Emissions
Proposed Future Emission Reduction Measures

• Continued acquisition of Tier 2 locomotives and newer technology (i.e. Tier 3 and 4) when available
• Continued remanufacture and retrofit of older line haul locomotives with lower emitting components
• Continued support of locomotive research and development efforts
• Continued Aggressive Employee Training
  – Fuel Conservation Via Use of Simulators
  – Locomotive Shutdown Procedures
  – Stopping Visible Emissions
DPM Emissions by Source (Calendar Years 2005-2020)

Emissions (Tons / Year)

- On-road Diesel-fueled Trucks
- Forklifts
- Locomotives

### Emissions:
- **2005**: 4.9 Tons
- **2005-Adj**: 4.8 Tons
- **2007**: 2.6 Tons
- **2010**: 2.7 Tons
- **2015**: 2.0 Tons
- **2020**: 1.6 Tons
Criteria for Evaluation of Mitigation Measures

- Safe
- Technologically Feasible
- Consistent w/ Legal Requirements (i.e. – FRA)
- Operationally Feasible
- Cost Effective
- Other Yard Specific Considerations
UPRR is Reducing Emissions

• Since 1989, UPRR has invested more than $37M in locomotive research and development and we continue to look for innovations

• Result is the most comprehensive & aggressive program of identification, evaluation, development, acquisition, deployment, optimization, & utilization of new & evolving technologies of any RR in No. America
THE ROAD TO THE FUTURE ISN’T A ROAD AT ALL.