

Union Pacific Railroad Community Meeting Diesel Particulate Matter Mitigation Plan for the Stockton Rail Yard

Stockton, CA



April 21, 2009

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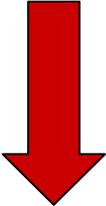


Agenda

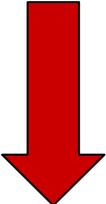
- Emissions Trends Summary
- System and Facility Overview
- 2005 Baseline Inventory
- Current and Proposed Mitigation Measures
 - **We need your help to identify additional ideas for potential emissions reductions**
- Emission Trends – Past and Future
- Evaluation of Mitigation Measures

Emission Trends – DPM Reductions from 2005 Baseline

- 2005 to 2007

 **DOWN 53%**

Projected to 2020

 **DOWN 73%**

Union Pacific System Overview



Fast Facts

• 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

- **40 +/- acre facility with rail and locomotive maintenance operations**
- **Yard Includes:**
 - Receiving Tracks
 - Departure Tracks
 - Tracks for Locomotive and Railcar Service and Repair
- **Facility Operates 24 Hours a Day, 365 Days a Year**
- **About 6 Trains a Day Originate or Terminate at the Stockton Yard**
- **About another 35 Commuter Trains Originate or Terminate at the Stockton Yard per Day**

2005 Baseline Emissions Inventory

Equipment Category	DPM Emissions (tpy)
Locomotives	6.5
- <i>Line Haul</i>	1.7
- <i>Switch</i>	3.6
- <i>ACE Commuter Trains</i>	0.4
- <i>Service and Load Testing</i>	0.8
Diesel-Fueled Trucks	0.2
Diesel-Fueled Heavy Equipment	0.1
ACE Aux. Generator Sets	0.1
TOTAL	6.8

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



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.

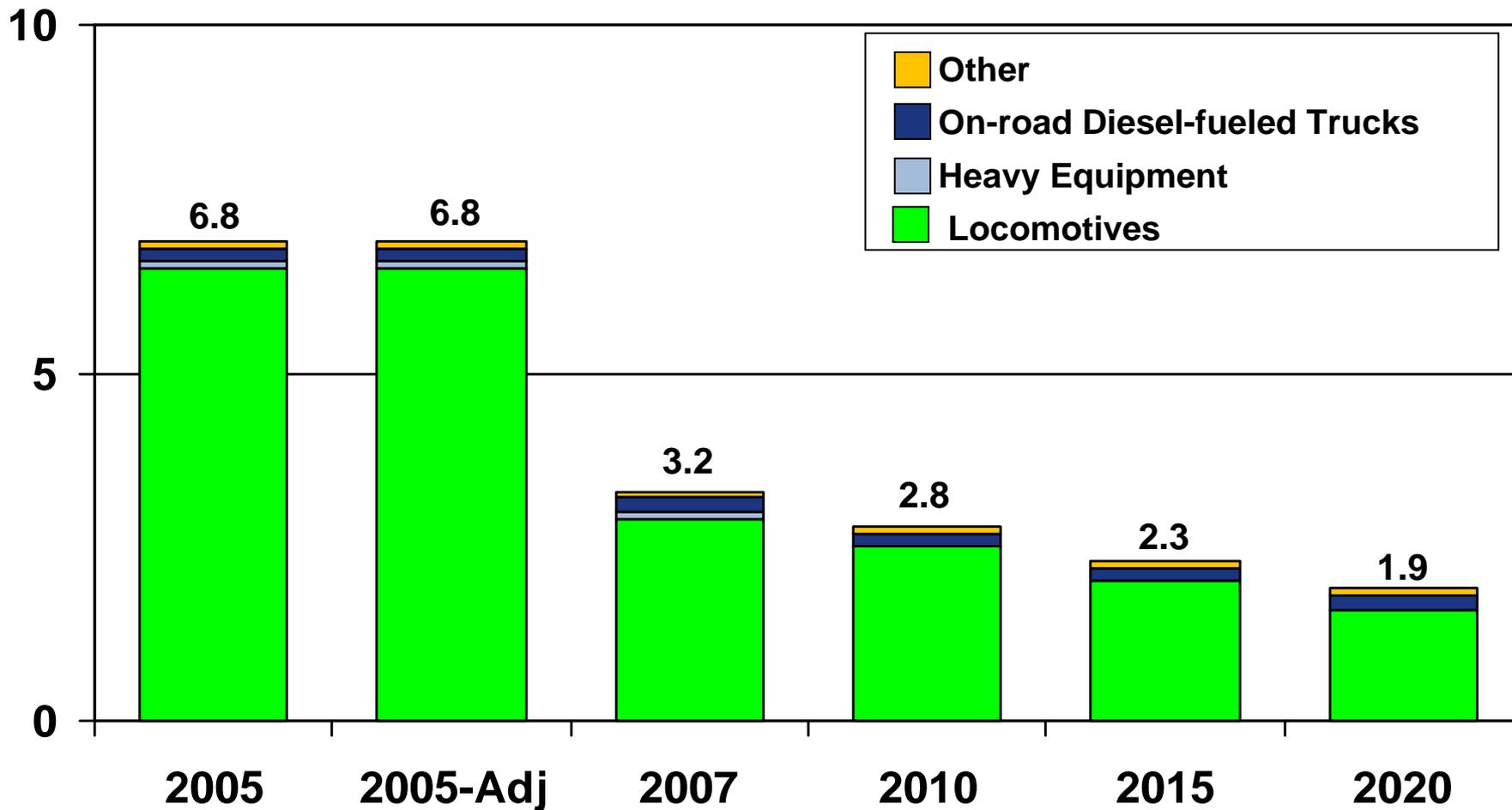
- **Use of cleaner fuels – only Ultra Low Sulfur Diesel (ULSD) is dispensed in CA**
- **Employee Training**
 - **Fuel Conservation Via Use of Simulators**
 - **Locomotive Shutdown Procedures**
 - **Stopping Visible Emissions**

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)



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.

