

Union Pacific Railroad Community Meeting
Diesel Particulate Matter Mitigation Plan for the
LATC Railyard
Los Angeles, CA
March 5, 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

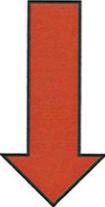


Emission Trends – DPM Reductions from 2005 Baseline

- 2005 to 2007

 **DOWN 29%**

Projected to 2020

 **DOWN 63%**

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

- **120+/- Acres for Cargo Handling**
- **Yard Includes:**
 - Receiving Tracks
 - Tracks Used to Load and Unload Containers From Rail Cars and for Train Departures
- **Facility Operates 24 Hours a Day, 365 Days a Year**
- **About 12-13 Trains a Day Operate Through, Originate or Terminate at LATC**



2005 Baseline Emissions Inventory

Equipment Category	DPM Emissions (tpy)
Locomotives	3.2
- <i>Line Haul</i>	<i>0.7</i>
- <i>Switch</i>	<i>2.5</i>
Cargo Handling Equipment	2.5
Diesel Drayage Trucks	1.0
Diesel-Fueled Heavy Equipment	0.2
TRUs and Reefer Cars	0.5
TOTAL	7.3



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
- **Expanded Use of Technologically Advanced Switch Locomotives**
 - 70 ULELs in S. CA



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**
- **Cleaner Cargo Handling Equipment**
 - In 2006, retired 2 higher-emitting cranes.
 - In 2007, an additional higher-emitting crane was retired and placed with a new, cleaner unit. An additional control device will be installed on the new unit in 2009.
 - In mid-2008, a higher-emitting packer was retired and replaced with new, cleaner unit. Addition control will be installed on the new unit in 2009.
- **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**



Proposed Future Emission Reduction Measures, Cont.

- **Cleaner Cargo Handling Equipment**
 - By the end of 2010, all pre-2006 model year cargo handling equipment at the yard will be replaced, repowered, or retrofitted with a control device to meet the requirements of the Rule.
- **Cleaner drayage fleet**
 - Natural fleet turnover
 - Port's Clean Truck Program
 - CARB's proposed drayage truck regulation
- **Cleaner Refrigeration Units**
 - Beginning in 2008, refrigeration units operating at LATC will be required to meet lower emission standards. Standards are further reduced in 2010.

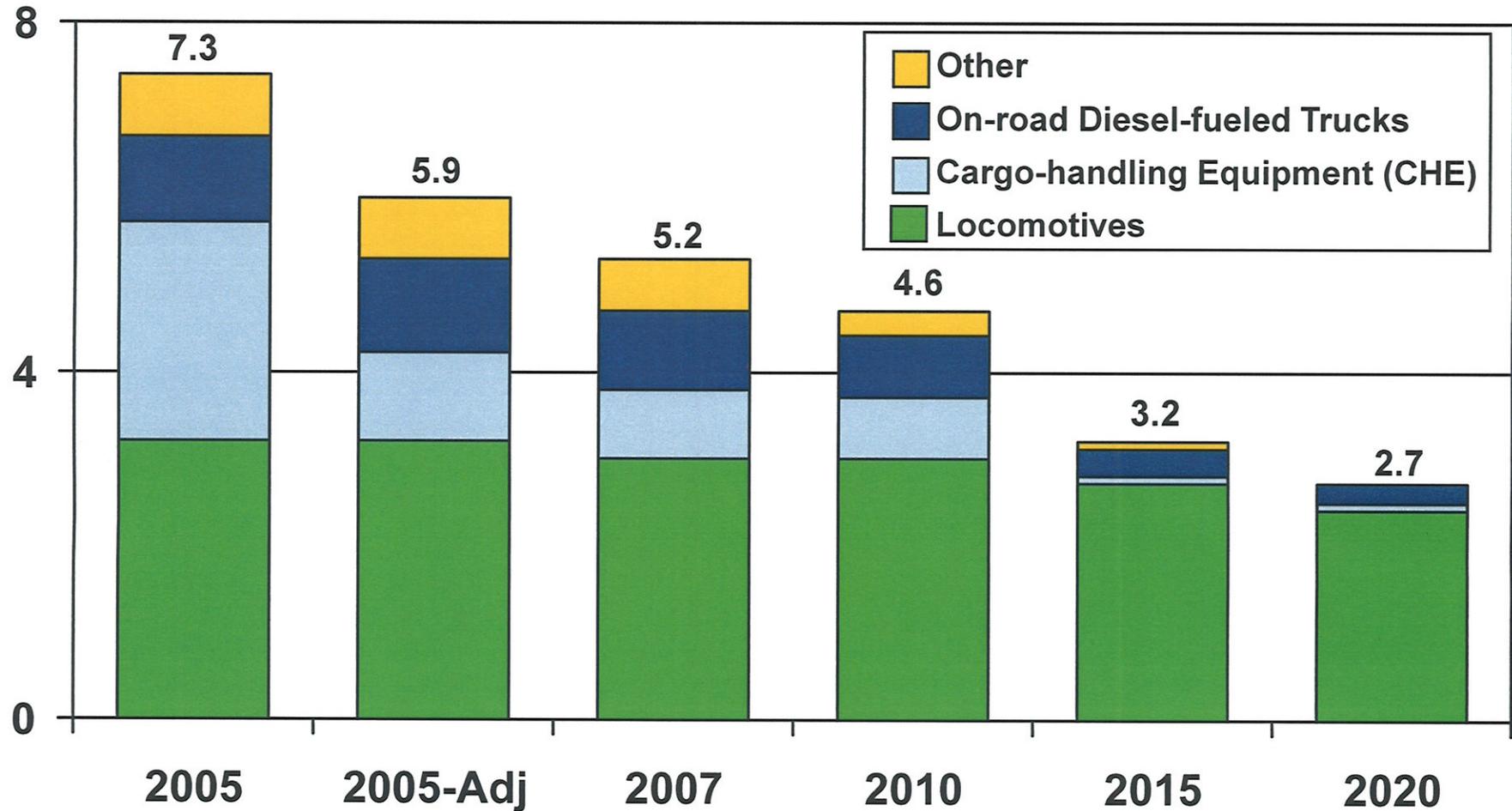
Summary of Reductions by Source

Equipment Type	2005	2007	2010	2012	2014	2016
Line Haul Locomotives	Fleet is Continuously Being Improved					
Cargo Handling Equipment % of Total Upgraded	8 Units 0%	3 of 8 38%	8 of 8 100%	NA 100%	NA 100%	NA 100%
Drayage Trucks	Truck Owners Must Comply with Either the Port's Truck Rule, CARB's Drayage Truck Rule, and/or other appropriate State and Federal Regulations					
Refrigerated Units	Equipment Owners Must Comply with CARB's Airborne Toxic Control Measure (ATCM) for TRUs					

Note: UPRR does not own or operate the drayage trucks and/or TRUs and reefer cars.

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.

