

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

Colton, CA



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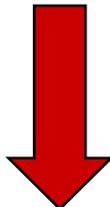


Agenda

- 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 5%**

Projected to 2020

 **DOWN 42%**

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

- **200+/- Acre Classification Yard**
- **Yard Includes:**
 - Receiving Tracks
 - Tracks Used to Sort Rail Cars by Destination
 - Tracks Used to Maintain/Repair Rail Cars or Locomotives
- **Facility Operates 24 Hours a Day, 365 Days a Year**
- **About 50 Trains a Day Operate Through or Originate / Terminate at UP's Colton Yard**

2005 Baseline Emissions Inventory

Equipment Category	DPM Emissions (tpy)
Locomotives	16.3
- <i>Line Haul</i>	3.6
- <i>Switch</i>	10.0
- <i>Service/Maintenance</i>	2.6
Light Duty Yard Trucks	0.2
Heavy Equipment	0.1
TOTAL	16.5

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**
 - 11 ULELs in Colton Area
 - Additional 59 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.

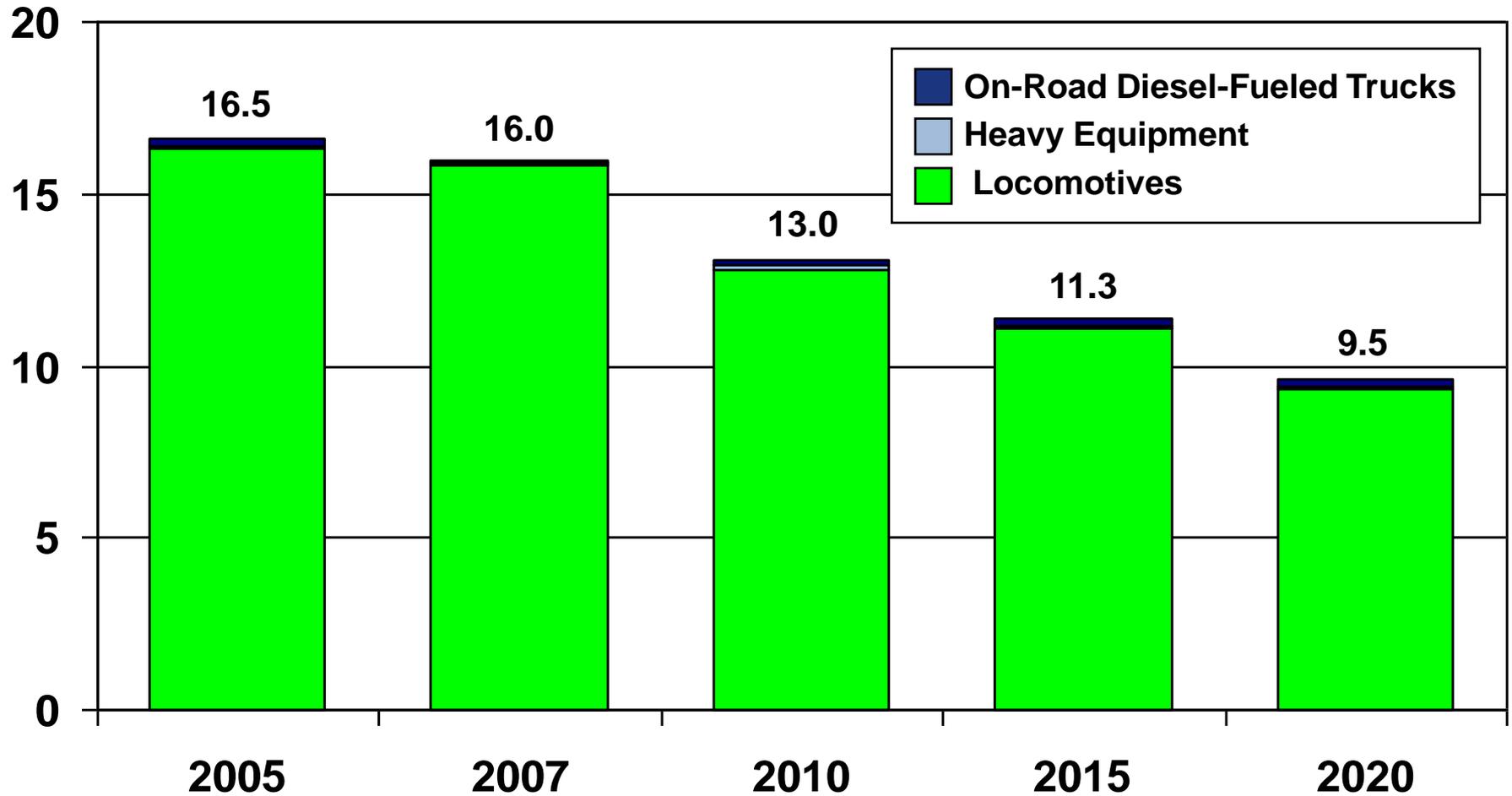
- **Use of cleaner fuels – only Ultra Low Sulfur Diesel (ULSD) is dispensed in CA**
- **Employee Training**
 - **Fuel Conservation Via Use of Simulators**
 - **Locomotive Shutdown Procedures**
 - **Visible Emissions**

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**
 - **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**

What has UPRR Done to Reduce DPM Emissions from Our Operations

- **Continuing Research and Development**
 - Since 1989, UPRR has invested more than \$37M in locomotive research and development
 - Several ongoing initiatives will continue to keep both UPRR and rail at the forefront as the most environmentally friendly and efficient means of overland goods transportation

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.



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