

Union Pacific Railroad Community Meeting Air Resources Board Health Risk Assessment ICTF & Dolores Railyards

Long Beach, CA



March 18, 2008

Lanny Schmid, *Director – Environmental Operations*

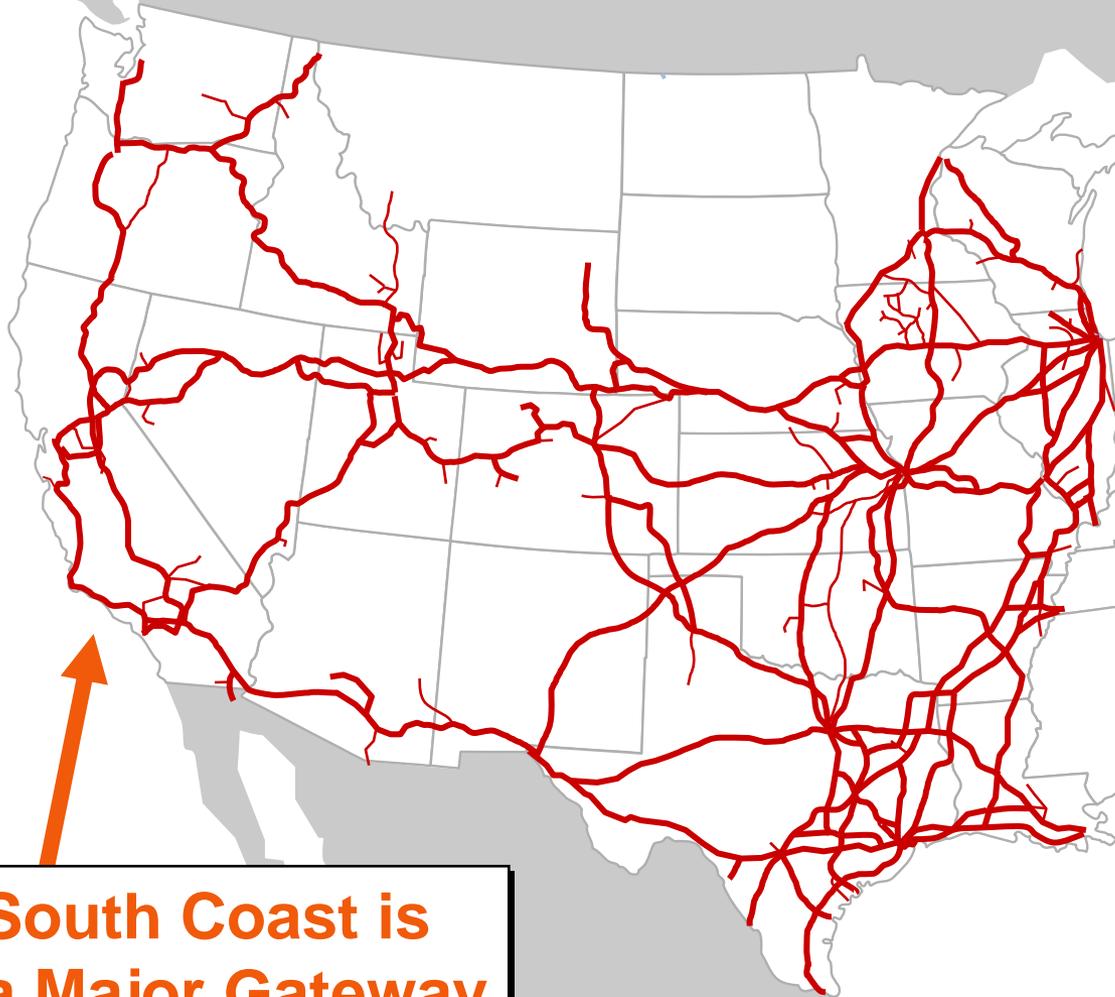
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UPRR ICTF & Dolores Railyards

- **Facility Overview**
- **Sources of Emissions**
- **Comparison with Air Basin and Other Area Emissions**
- **Emission Reduction Measures**
- **Emission Trends – Past and Future**

Union Pacific System Overview



**South Coast is
a Major Gateway**

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
- 5,860 in California
- 1,900 in Los Angeles area

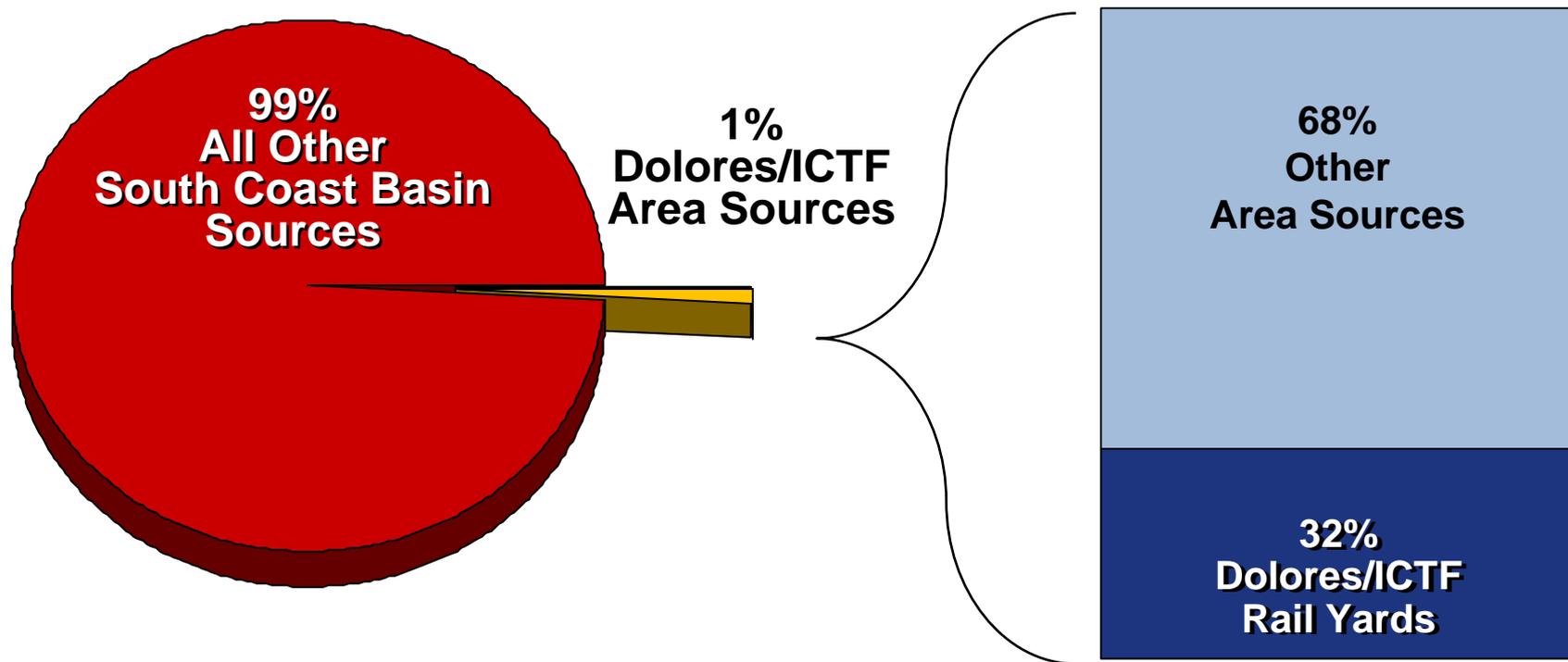
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Facility Overview

- **300+/- Acres for Loco Servicing & Cargo Handling**
- **Yard Includes:**
 - Receiving Tracks
 - Tracks Used to Maintain or Repair Rail Cars or Locomotives (Light Repair)
 - Tracks Used to Load and Unload Containers Trailers From Rail Cars, and for Train Departures
- **Facility Operates 24 Hours a Day, 365 Days a Year**
- **About 20 Trains a Day Operate Through or Originate / Terminate at UP's Yard**

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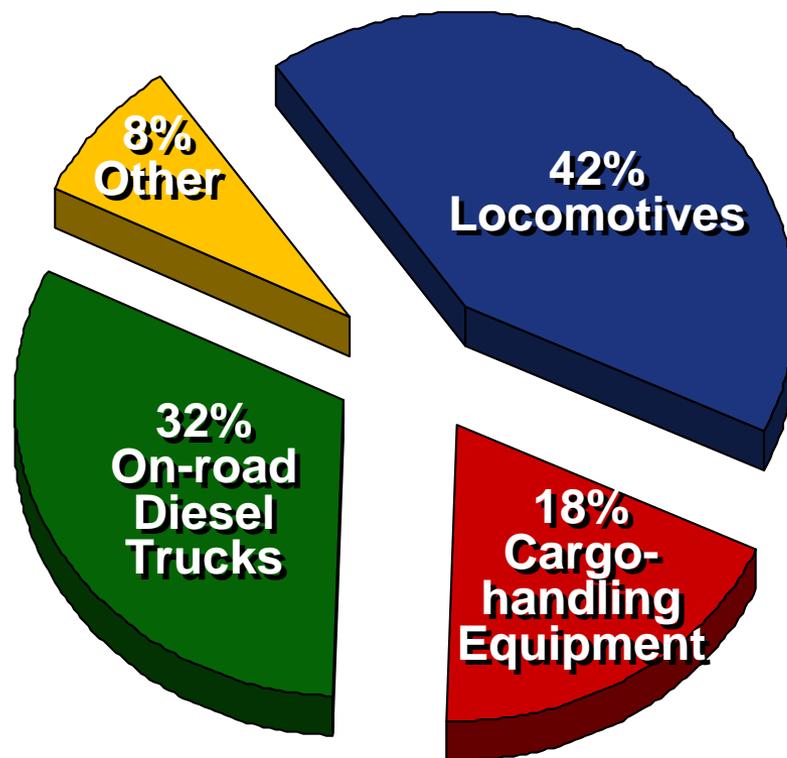
Comparison with Other Sources of DPM Emissions



Total DPM Emissions – All South Coast Sources: 7750 tons per year

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Sources of Diesel Particulate Matter (DPM) Emissions



Total DPM Emissions – UPRR Dolores/ICTF: 23.6 tons per year

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Emission Reduction Measures

- **Increased Use of Idle Control Devices (ICD's) for Auto Start-Stop of Locomotives**
 - **126 of 130 (97%) of LASU Intrastate Fleet**
 - **100% of CA Intrastate Units Equipped by June, 2008**
 - **3,432 of 8,428 (41%) of UPRR Total Fleet**
 - **All New Locomotives Since 2002 Have Factory ICD's**
- **Aggressive Fuel Conservation Efforts Since 1995 (System)**
 - **14.7% Improvement in Fuel Efficiency**
 - **25% Increase in Cargo Tonnage**

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Emission Reduction Measures

- **Modernizing Cargo-handling Equipment**
 - Replace/Upgrade 43 Pieces of Equipment in Next 5 Years
 - Includes 11 Major Items (RTG's or Top Picks)
- **Continued Acquiring of New Transportation Refrigeration Units (TRUs) As Fleet Is Upgraded**
- **Use of ULSD Diesel – 100% Since 2006**
- **Continued Aggressive Employee Training**
 - Conserving Fuel Via Use of Simulators for New Hires / Refresher
 - Locomotive Shutdown (86+ at ICTF; 1,550+ at LA Area)
 - Visible Emissions (2 at Commerce; 7 at LA Area)

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Emission Reduction Measures

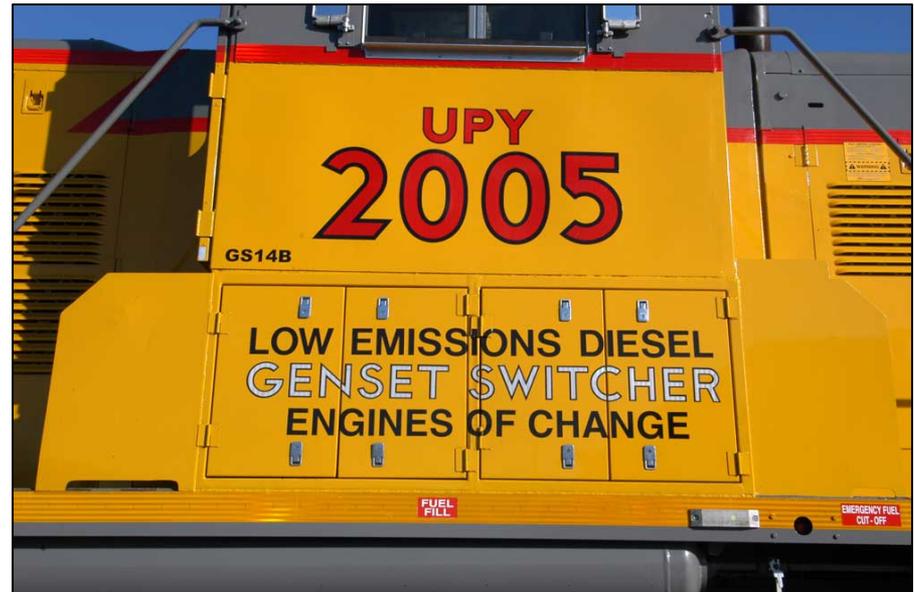
- **Continued Aggressive Acquisition & Use of Tier 2 Road Locomotives With Advanced Emission Controls**
 - 1,177 Tier 2 Locomotives by July, 2008
 - 3,321 Tier 0, 1, or 2 From 2000 Thru 2008
- **Continued Remanufacture of Older Locomotives With New, Lower Emitting Components**
 - 2,376 Units YTD Since 2000
- **Annual In-use Testing**
- **Retired 2,250 Older Units('08)**
- **Tier 2 Equivalent in South Coast by 2010**



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Emission Reduction Measures

- **Ultra Low Emitting Locomotives (ULEL's)**
 - Reduce NOx & PM Emissions by +/- 85%
 - Reduce Fuel Consumption by 16 to 37%
- **Expanded Use of Technologically Advanced Switch Locomotives**
 - Gensets - 12 Assigned Dolores
 - Gensets - 61 Now in the Basin
 - Green Goats - 10 Now in the Basin



Emission Reduction Measures

Genset Switchers



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Emission Reduction Measures

- **Use of Remote Locomotive Diagnostics to Reduce Test & maintenance Time for Locomotives, Where Applicable**
- **Develop & Implement Changes to Streamline Operations**
 - Technological
 - Operational
- **Systematically Evaluating Opportunities for Improving Performance that Result in Reducing Emissions**
 - Operational Changes to Minimize Operation of Yard Locomotives
 - Practices for Use of Other Diesel-fueled Equipment
 - Reducing Waiting Time for Trucks Loading / Unloading at Rail Yards

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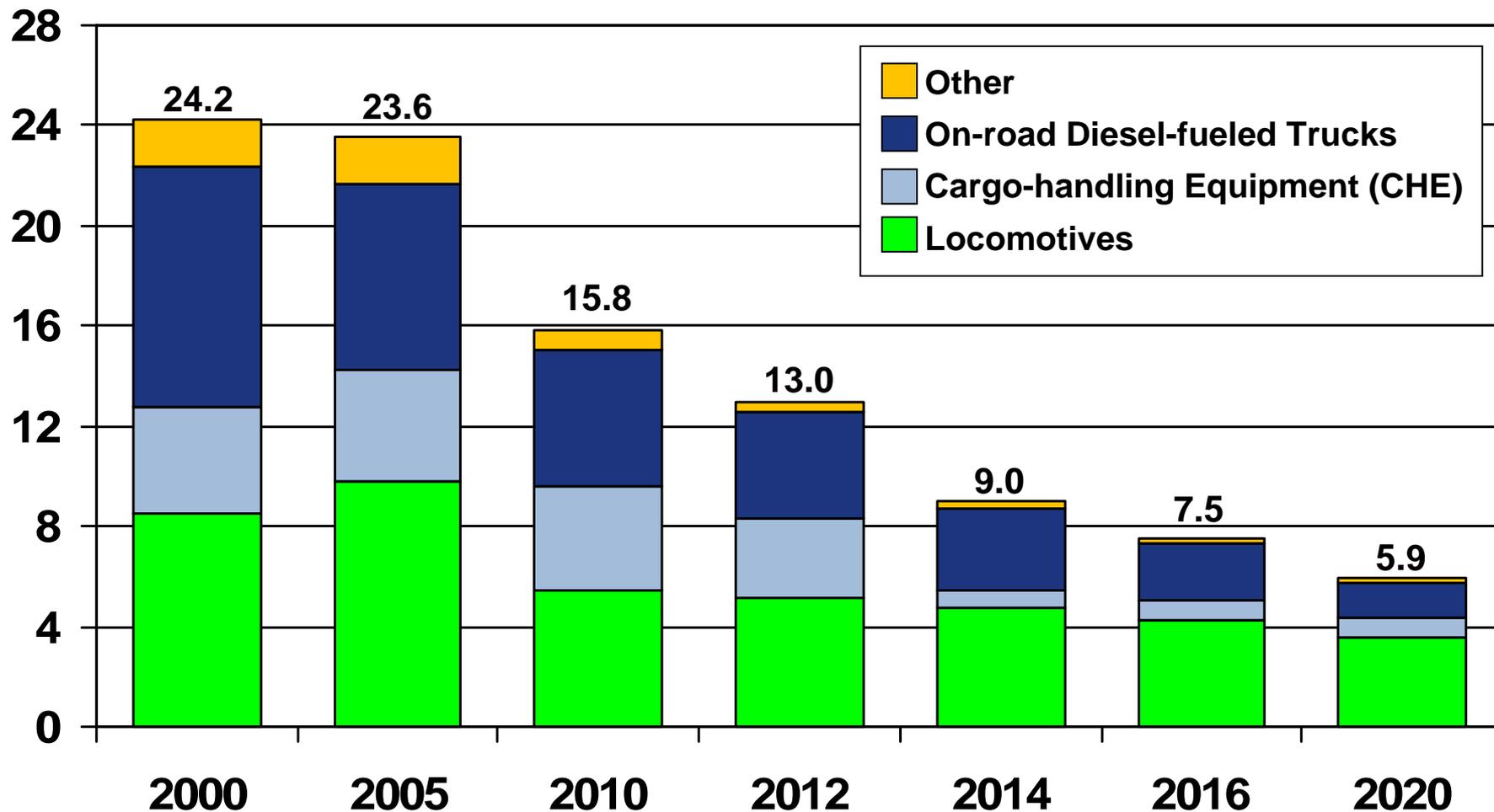
Emission Trends

- **2% Reduction From 2000 to 2005
(ARB Baseline Year)**
- **75% Reduction From 2005 to 2020**
- **Overall 76% Reduction From 2000 to 2020**

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DPM Emissions by Source (Calendar Years 2000-2020)

Emissions (Tons / Year)



UPRR State & System-Wide

Recent Activity Update

- **Completion of placement of the 71 ULEL's in the basin**
- **Acquisition of another 175 Tier 2 road locomotives**
- **Continuing of upgrade of CHE/yard equip; activity is yard dependent**
- **Modification/aggressive retrofit of ICD's on CA intrastate locomotives**
- **Extensive shutdown training for engineers**
- **Diligent follow-up on citizen complaints to resolve address concerns**

UPRR State & System-Wide

Recent Activity Update

- **Greater number of VE inspections w/ immediate repair; > 20,000 in 2007, w, >50% in this area**
- **Continuing upgrade of TRU's**
- **Stronger aggressive conservation efforts such as Fuel Masters – a program that saved 20 million gallons of fuel on the UPRR in 2007**
- **Result is the most comprehensive/aggressive identification, evaluation, development, acquisition, deployment, optimization & utilization of new & evolving technologies of any RR in North America**

THE ROAD TO THE FUTURE ISN'T A ROAD AT ALL.

