

Presentation Overview

- **Background**
- **Methodology**
- **Results**
- **Actions to Reduce Health Risks**
- **Next Steps**



Background

- **Part of our commitment to address pollution impacts on communities**
 - Implementation of the ARB Goods Movement Plan
 - 2005 Railroad Agreement between ARB/UP/BNSF
- **State's goals**
 - Reduce exposure to diesel PM as quickly as possible
 - Reduce risks by at least 85 percent by 2020
 - Obtain the emission reductions needed to attain air quality standards



Health Risk Assessment Timelines

Railyard Health Risk Assessments Completed in 2007

BNSF Commerce/Eastern
BNSF Hobart
BNSF Richmond
BNSF Stockton
BNSF Watson
UP Commerce
UP LATC
UP Mira Loma
UP Stockton

Railyard Health Risk Assessments Completed/Released in 2008

UP Colton
UP ICTF/Dolores
UP Industry
UP Oakland
BNSF Barstow (draft)
BNSF San Bernardino (draft)
BNSF San Diego (draft)

Methodology and Scope of the Study

➤ Two major parts:

- Estimation of diesel particulate matter air concentrations by computer modeling

 - Baseline emission inventory

- Health risk assessment for significant diesel sources

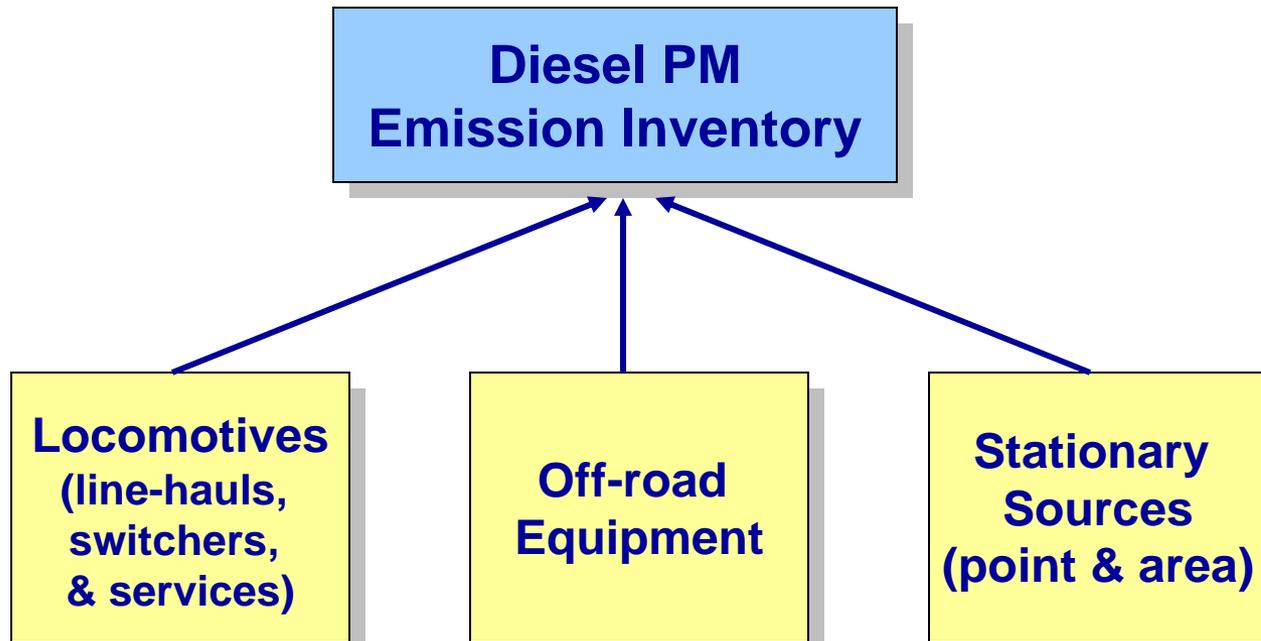
➤ **Focus on diesel PM** - other toxics evaluated, small relative to diesel PM



BNSF San Diego Railyard with One-Mile Off-Site Boundary



Prepare Railyard Emissions Inventory



Summary of BNSF San Diego Railyard 2005 Diesel PM Emissions

| Diesel PM Emission Sources | BNSF San Diego Railyard | | Off-Site Emissions | |
|-----------------------------------|-------------------------|-------------|--------------------|-------------|
| | Tons Per Year | Percentage* | Tons Per Year | Percentage* |
| LOCOMOTIVES | 1.63 | 98% | - | - |
| - Arrival/Departure | 1.47 | 88% | | |
| - Switching | 0.16 | 10% | | |
| - Fueling | 0.005 | < 1% | | |
| OFF-ROAD VEHICLES AND EQUIPMENT | 0.02 | 1% | - | - |
| TRANSPORT REFRIGERATION EQUIPMENT | 0.02 | 1% | - | - |
| OFF-SITE MOBILE SOURCES | - | - | 6 | 52% |
| OFF-SITE STATIONARY SOURCES | - | - | 5.6 | 48% |
| TOTAL | 1.67 | 100% | 11.6 | 100% |

* Numbers may not add precisely due to rounding.

Summary of Nearby Non-Railyard Diesel PM Emission Inventory

| Emission Sources | Tons per Year |
|-------------------------|----------------------|
| Mobile Sources | 6.0 |
| Stationary Sources | 5.6 |
| Total | 11.6 |



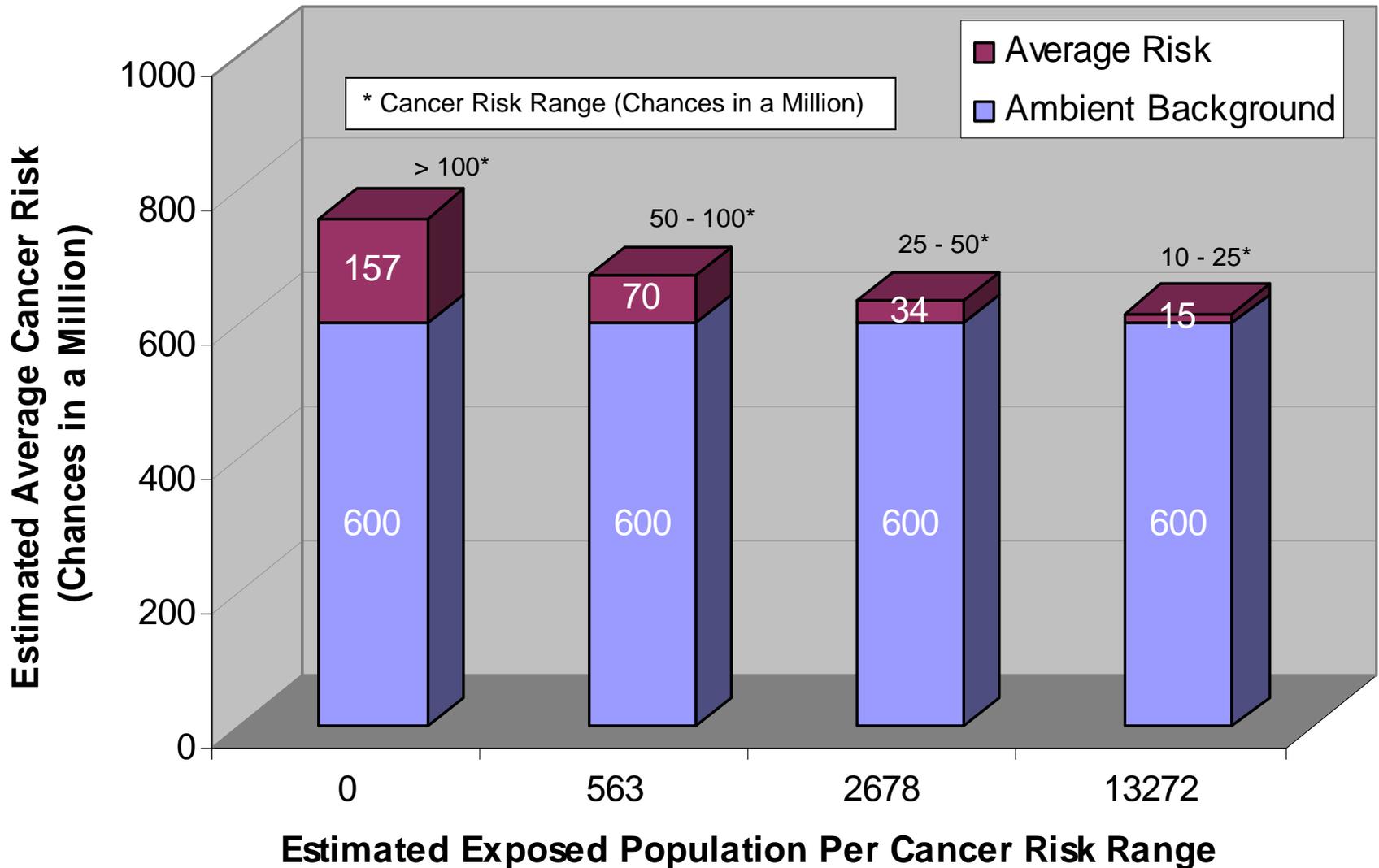
Comparison of Local Diesel PM Sources with Regional Sources

(Tons per Year in 2005)

| Sources | Locomotive | On-Road Trucks | Off-Road Vehicles and Equipment | Other (e.g. Ships, Refrig. Trailers) | Total |
|---------------------------|------------|----------------|---------------------------------|--------------------------------------|-------|
| San Diego Air Basin | -- | -- | -- | -- | 1,800 |
| BNSF San Diego Railyard | 1.63 | -- | 0.02 | 0.02 | 1.67 |
| Nearby Stationary Sources | -- | -- | -- | -- | 5.6 |
| Nearby Roadways | -- | 6.0 | -- | -- | 6.0 |



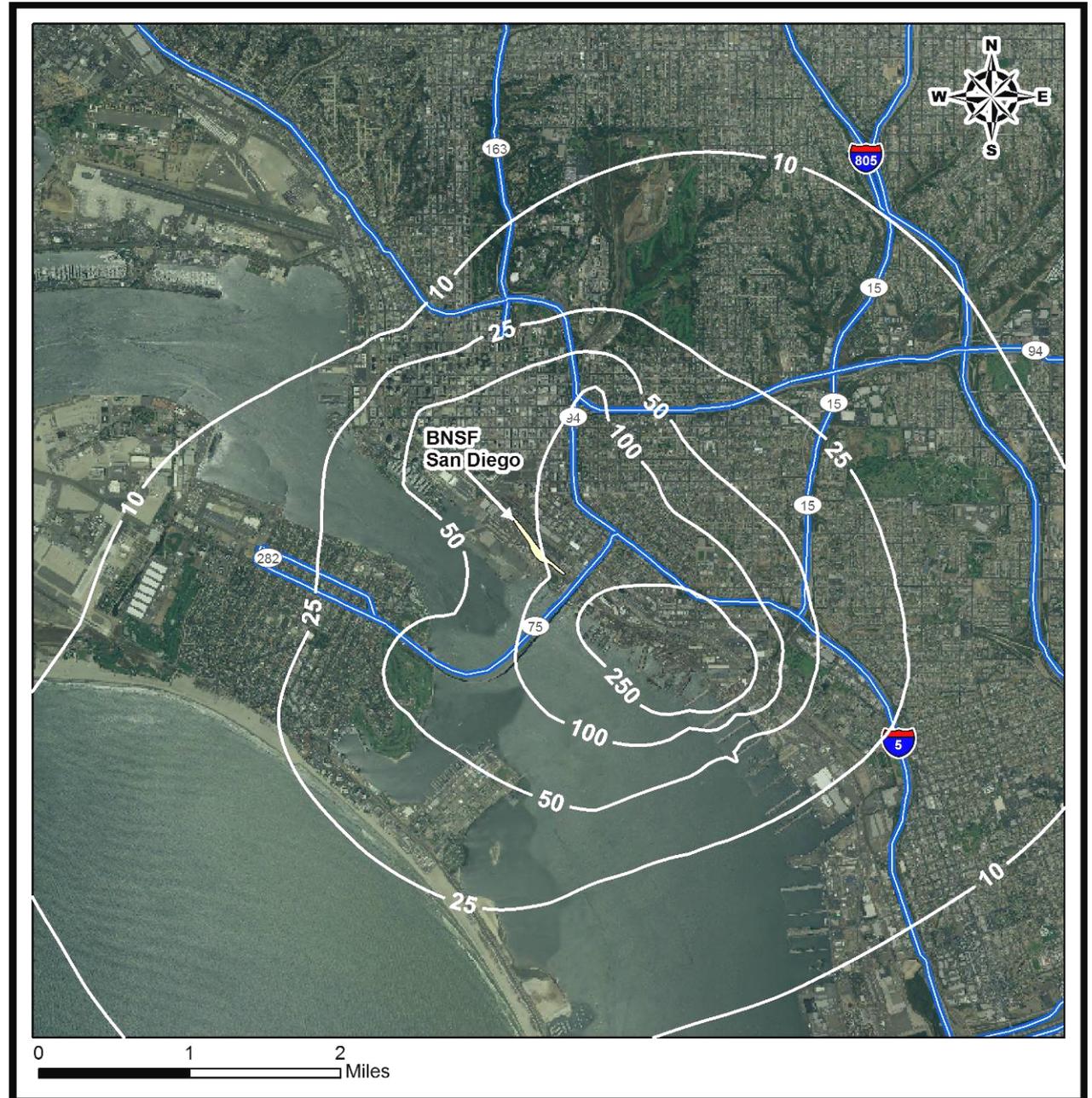
BNSF San Diego Railyard



Estimated Potential Cancer Risks for BNSF San Diego Railyard



Estimated Potential Cancer Risks for Non-Railyard Sources (Off-Site)



Actions to Reduce Health Risks



Approach to Reduce Emissions

- **ARB regulations**
 - Fuels (CARB diesel fuel)
 - Cargo handling equipment
 - Transport refrigeration units
 - Heavy-duty diesel on-road trucks and off-road vehicles
- **U.S. EPA regulation**
 - Locomotives
- **Voluntary agreements**
 - 1998 South Coast Fleet Average
 - 2005 Statewide
- **Railyard locomotive replacement program**
- **Funding programs**
 - Carl Moyer Incentives
 - Proposition 1B: Goods movement emission reduction program



Benefits of California Railyard Diesel PM Emission Reduction Measures

➤ 2005-2007

- CARB diesel fuel for intrastate locomotives
- 2005 railyard agreement

≈15-20%

➤ 2005-2010 (Additional Measures)

- 1998 NOx locomotive fleet average agreement (in South Coast Air Basin)
- ARB cargo handling equipment regulation
- ARB on-road heavy-duty truck regulation
- ARB transport refrigeration unit regulation
- ARB port and intermodal railyard drayage truck regulation

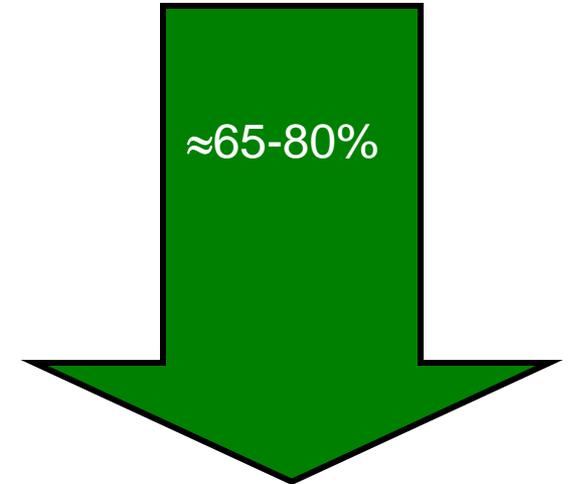
≈50-65%



Possible Additional Measures

➤ 2005-2020:

- U.S. EPA locomotive rulemaking (March 14, 2008)
- California replacement of switch locomotives



Next Steps

- **Begin public comment period**
- **Submit written comments to ARB**
- **Meet with interested stakeholders**
- **Evaluate any additional feasible mitigation measures**

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- <http://www.arb.ca.gov/railyard/hra/hra.htm>