

BNSF Railroad Initial Draft Diesel PM Mitigation Plan for the Watson Railyard

California Environmental Protection Agency



Air Resources Board

March 26, 2009

Overview of Meeting

- ARB

- Background on the BNSF Watson railyard health risk assessment
- Process for the development of draft railyard mitigation plans
- Explain existing locomotive and railyard regulations and agreements

- BNSF

- Present initial draft railyard mitigation plan for BNSF Watson railyard
 - Discuss next steps to identify and discuss additional mitigation measures
- Community members encouraged to discuss and provide comments

Background

- This effort is part of our commitment to address pollution impacts on communities
 - ARB Goods Movement Plan
 - Reduce risks by at least 85 percent by 2020
 - ARB/UP/BNSF Railroad Agreement
 - Reduce exposure to toxic diesel PM as quickly as possible
- Railyard health risk assessments
 - 18 railyard health risk assessments finalized by July 2008

Railyard Mitigation Plan Process

- Railroads prepare initial draft railyard mitigation plans
 - Pursuant to the 2005 Agreement
- ARB provides technical review of draft plans
 - No ARB endorsement or approval of the draft plans
- Public meeting to discuss the draft plans and additional mitigation measures
- Revise the plans based on public comments
- BNSF finalizes the plans

Existing Control Measures

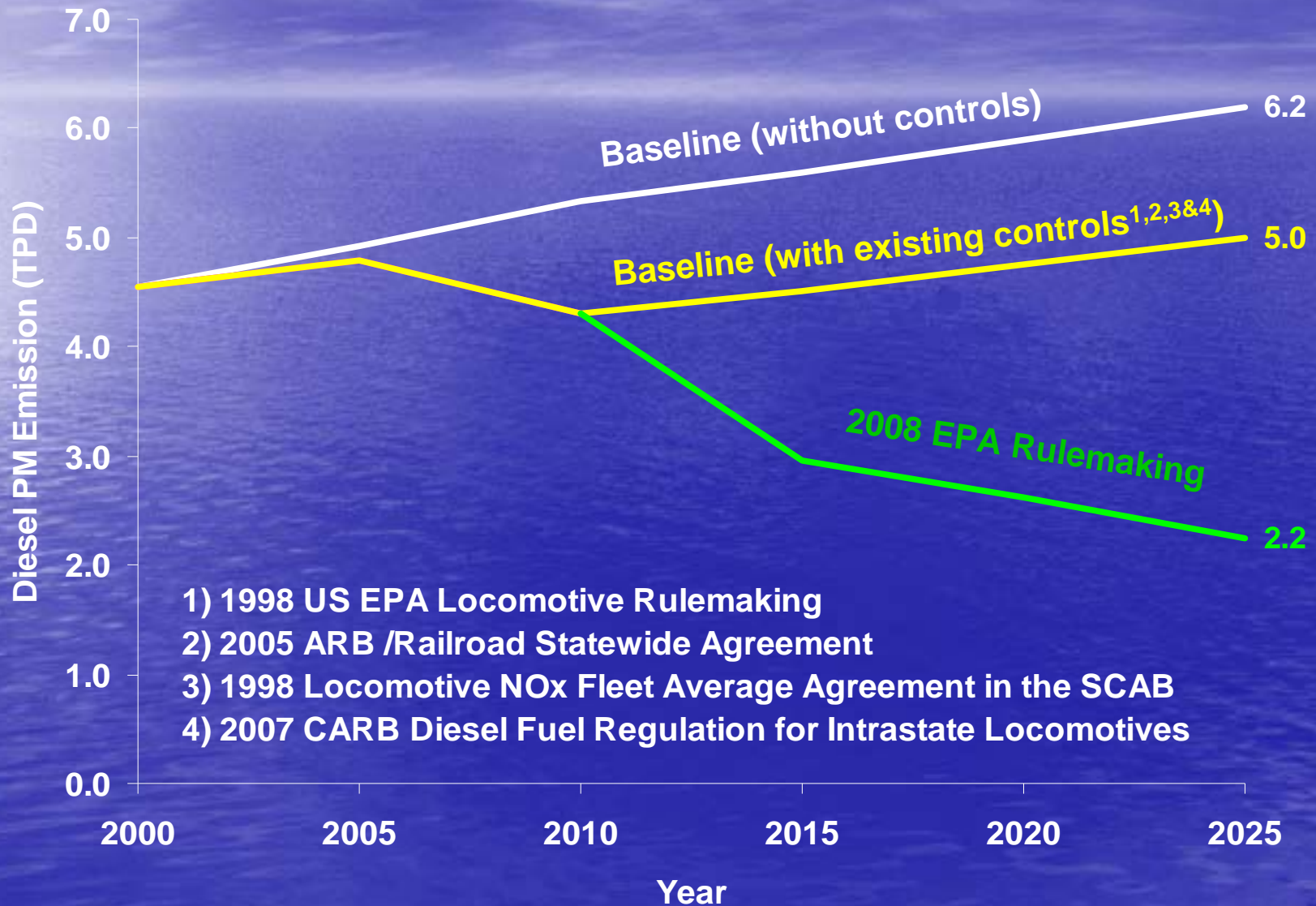
- **Locomotives:**

- Statewide Railroad Agreement (2005)
- ARB Diesel Fuel Regulation of Intrastate Locomotives (2007)
- U.S. EPA Locomotive Emission Standards (2008)
- 1998 South Coast Locomotive NO_x Fleet Average Agreement (2010)

- **Non-Locomotives:**

- ARB Cargo Handling Equipment Regulation (2007)
- ARB On-Road Heavy Duty Diesel Truck Emission Standards (2007)
- ARB Port and Intermodal Railyard Truck Regulation (2010)
- ARB ATCM for Transport Refrigeration (2010)
- ARB In-Use Diesel Vehicle Emission Regulation (2010)
- ARB Tier-4 Non-road Diesel-Fueled Emission Standards (2011-15)

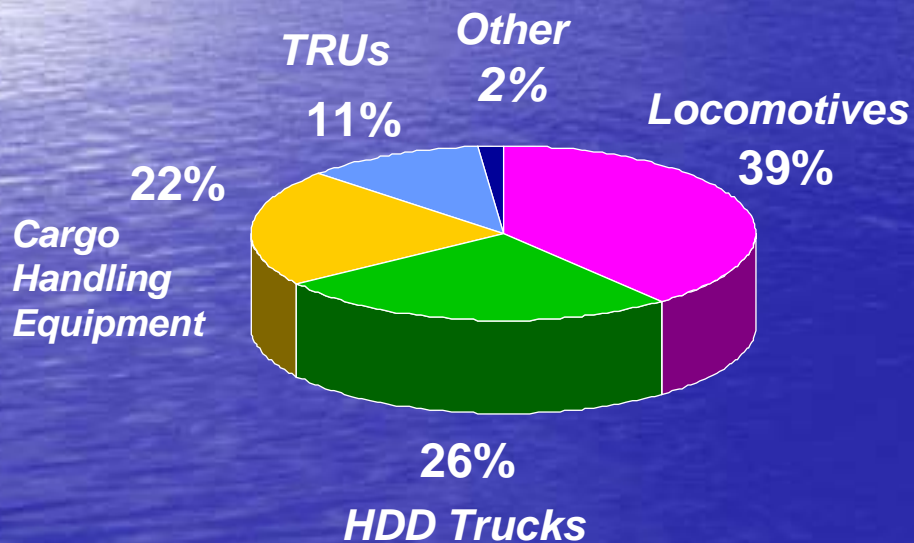
Statewide Locomotive DPM Emissions



- 1) 1998 US EPA Locomotive Rulemaking
- 2) 2005 ARB /Railroad Statewide Agreement
- 3) 1998 Locomotive NOx Fleet Average Agreement in the SCAB
- 4) 2007 CARB Diesel Fuel Regulation for Intrastate Locomotives

Distribution of 18 Railyard Diesel PM Emissions by Source Category

8 Intermodal Railyards DPM Emission Inventory (2005)

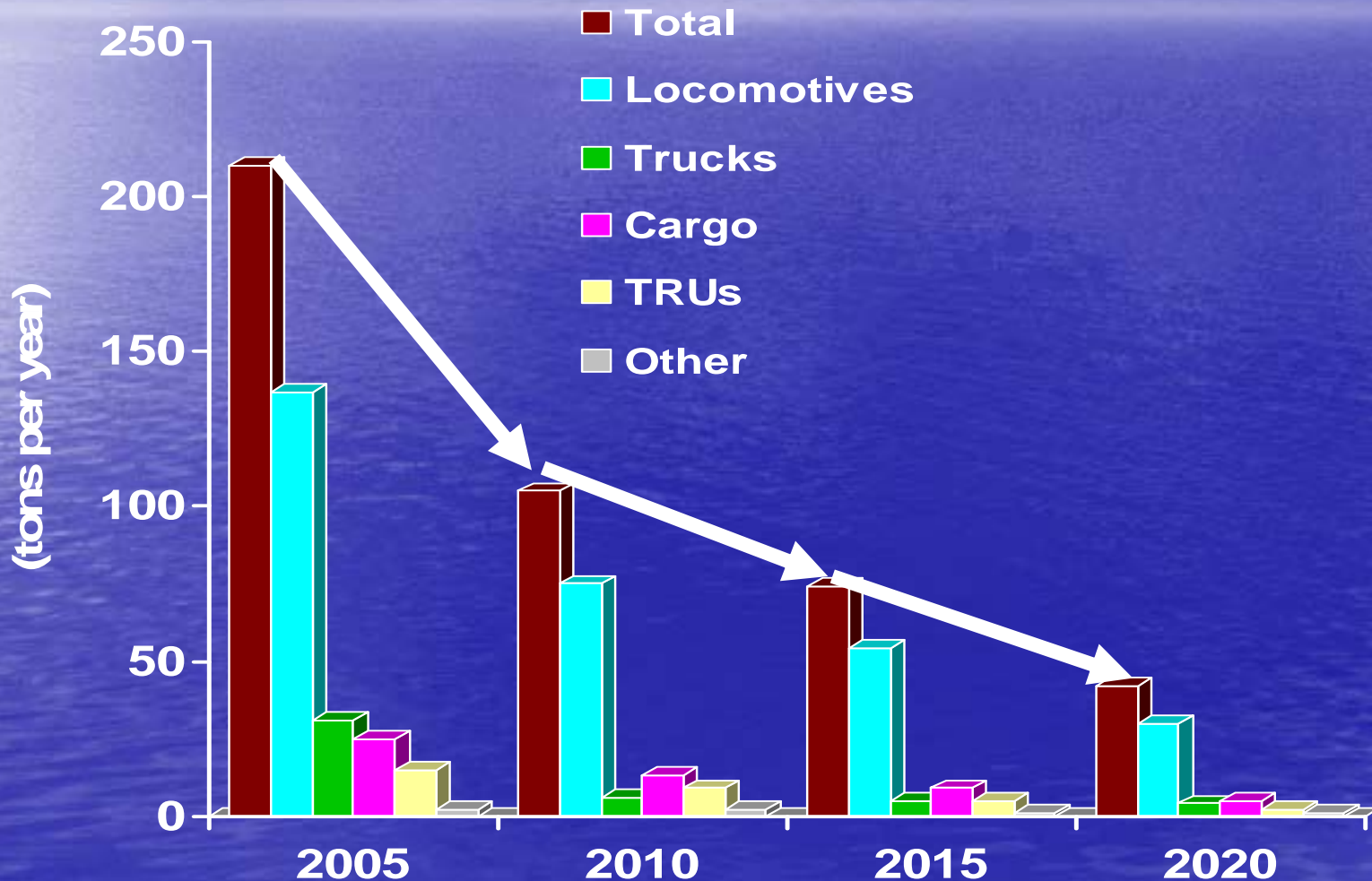


10 Classification Railyards DPM Emission Inventory (2005)



Diesel PM Emissions from 18 Railyards

(Assumes average 80% reduction by 2020)

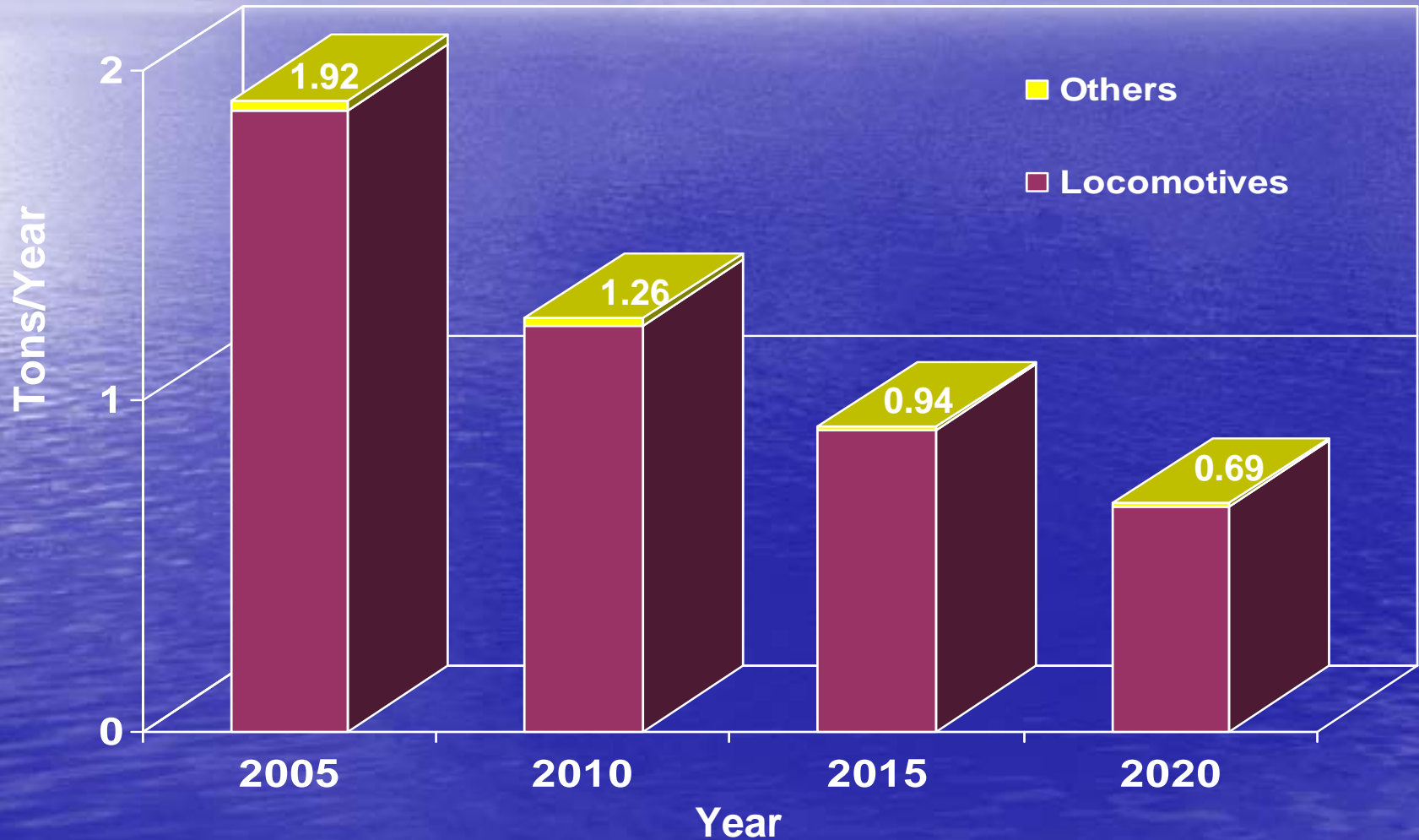




BNSF Watson Railyard



BNSF Watson Railyard Diesel PM Emissions

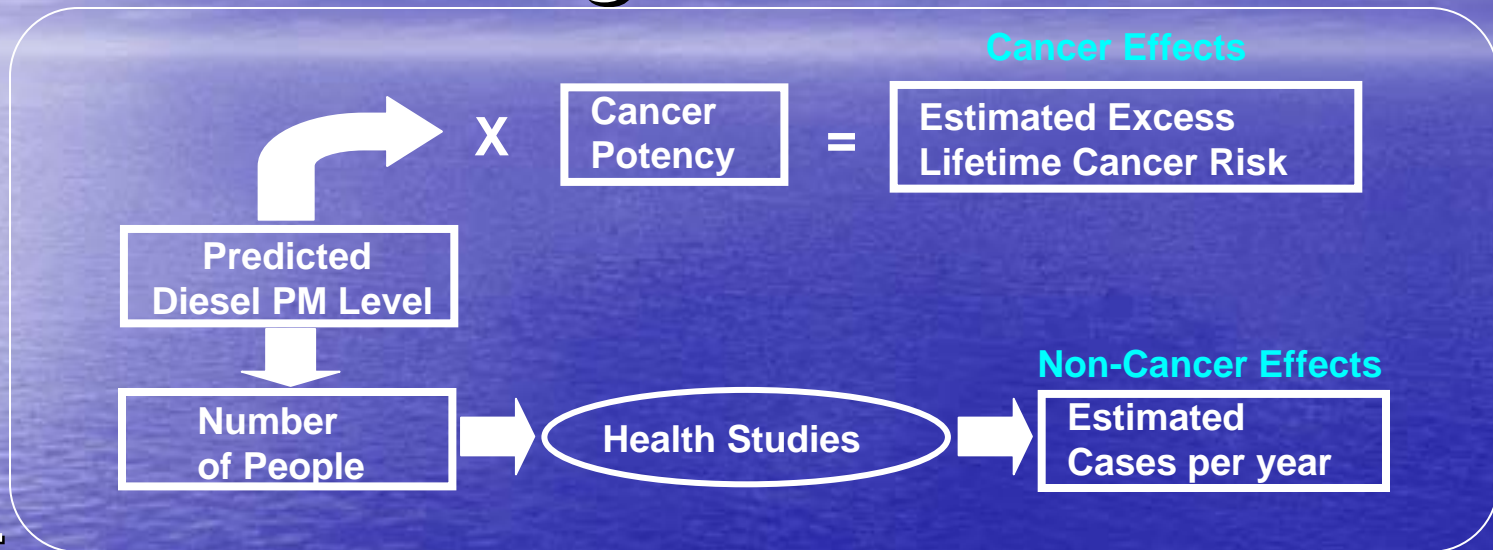


Local and Regional Diesel PM Sources

(Tons per year in 2005)

| DPM Sources | Locomotives | Cargo Handling Equip. | On-Road Diesel Trucks | Off-Road Diesel Engines and Others (Stationary Sources) | Total |
|-----------------------|-------------|-----------------------|-----------------------|---|-------|
| South Coast Air Basin | 300 | 5,000 | 2,000 | 5,000 | 7,800 |
| Ports of LA/LB | 20 | 170 | 40 | 1,570 | 1,800 |
| BNSF Watson Railyard | 1.88 | | | 0.04 | 1.9 |

Health Risk Assessments: Estimating Health Effects



Do:

- Provide an estimate of the amount of a pollutant in the air
- Predict or estimate the lifetime cancer risk and other health impacts – in this case for diesel PM

Don't:

- Actually measure amount of diesel PM in the air
- Gather/use health data on local residents

Estimated Potential Cancer Risk in 2005



BNSF Watson Railyard

Estimated Changes in DPM Cancer Risks (from existing measures)

- MICR (Maximum Individual Cancer Risk)



- Exposed Population (> 10 in a million)



Summary

- The mitigation plan provides significant diesel PM emissions reductions from 2010 to 2015 and later
- Diesel PM public health risks are still high in 2015
- Need to accelerate and provide more diesel PM emission reductions

ARB Technical Evaluation Document

Strategies to Accelerate and Further Reduce Railyard and California Statewide Locomotive Emissions

- Separate and complementary effort
- Evaluate potential strategies based on the following criteria:
 - Technical feasibility
 - Potential emission reductions
 - Costs and cost-effectiveness
 - Not intended to address implementation issues (i.e., legal, regulatory, agreement, funding)
- Request public comments
 - December 22, 2008 to March 23, 2009

Contact Information

Comments and Questions

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- ARB Railyard HRA and Mitigation Plan Website
 - <http://www.arb.ca.gov/railyard/hra/hra.htm>
- ARB Locomotive Technical Evaluation Document
 - <http://www.arb.ca.gov/railyard/ted/ted.htm>