

# Initial Draft Diesel PM Mitigation Plan for the BNSF San Bernardino Railyard

California Environmental Protection Agency

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**Air Resources Board**

October 1, 2008

# Overview of Meeting

- ARB

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

- BNSF

- Present initial draft railyard mitigation plan for BNSF San Bernardino 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
  - ARB/UP/BNSF Railroad Agreement
- Railyard health risk assessments
  - 18 railyard health risk assessments finalized by July 2008
- The State's goals:
  - Reduce exposure to toxic diesel PM as quickly as possible
  - Reduce risks by at least 85 percent by 2020

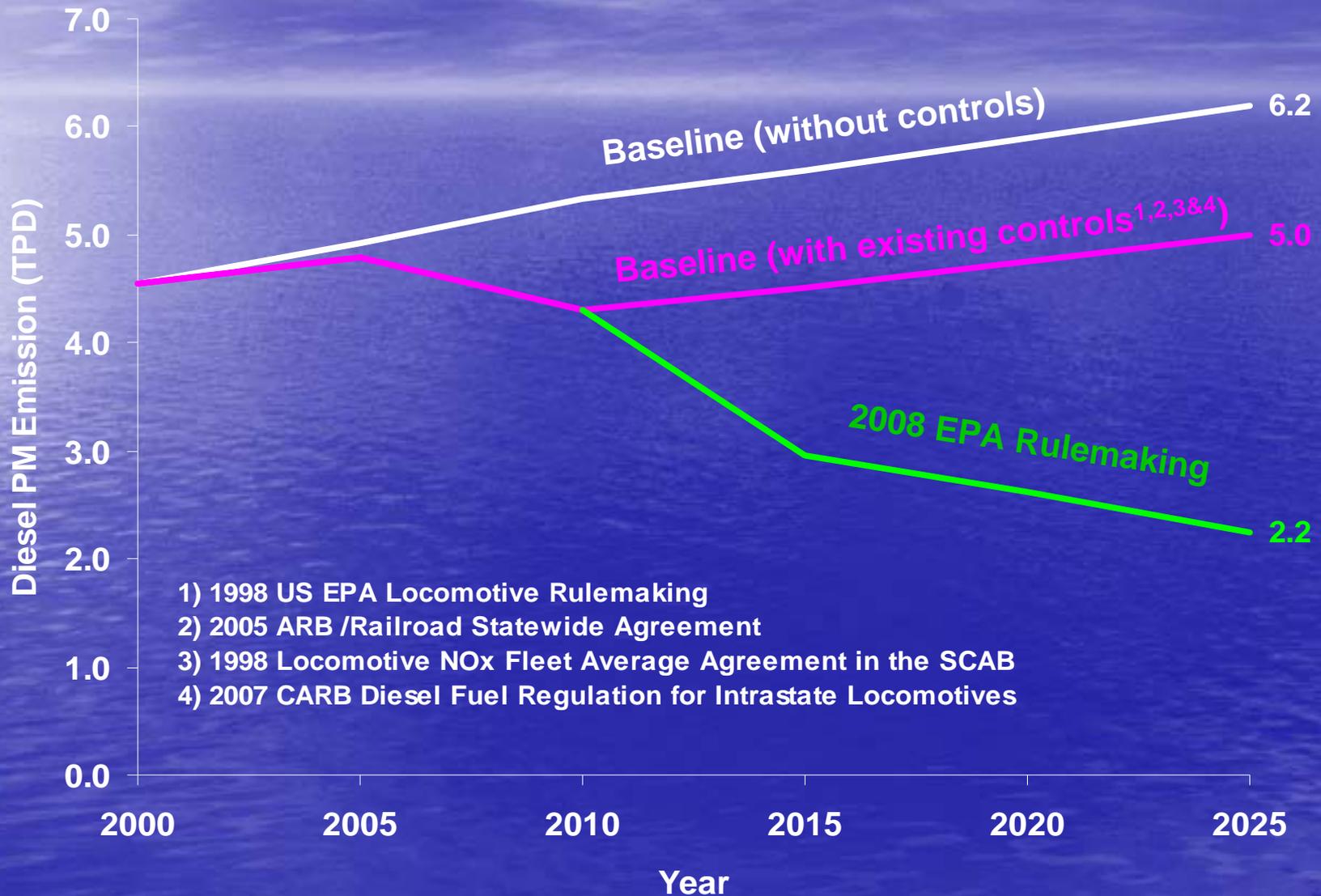
# Railyard Mitigation Plan Process

- Railroads prepare initial draft railyard mitigation plans
- 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
- Finalize the plans

# Existing Control Measures

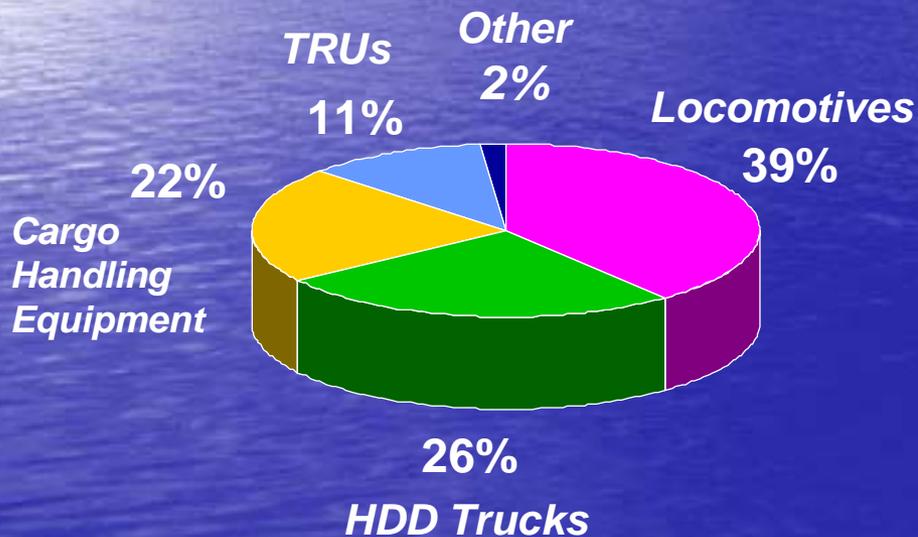
- South Coast Locomotive NO<sub>x</sub> Fleet Average Agreement (1998)
- Transport Refrigeration Unit Air Toxic Control Measure (2004)
- ARB Tier 4 Nonroad Diesel-Fueled Emission Standards (2004)
- Statewide Railroad Agreement (2005)
- ARB Diesel Fuel Regulation (2007)
- ARB Cargo Handling Equipment Regulation (2007)
- On-Road Heavy Duty Diesel Truck Regulation (2007)
- Port and Intermodal Railyard Truck Regulation (2007)
- U.S. EPA Locomotive Emission Standards (2008)

# Statewide Locomotive DPM Emissions



# Distribution of 18 Railyard Diesel PM Emissions by Source Category

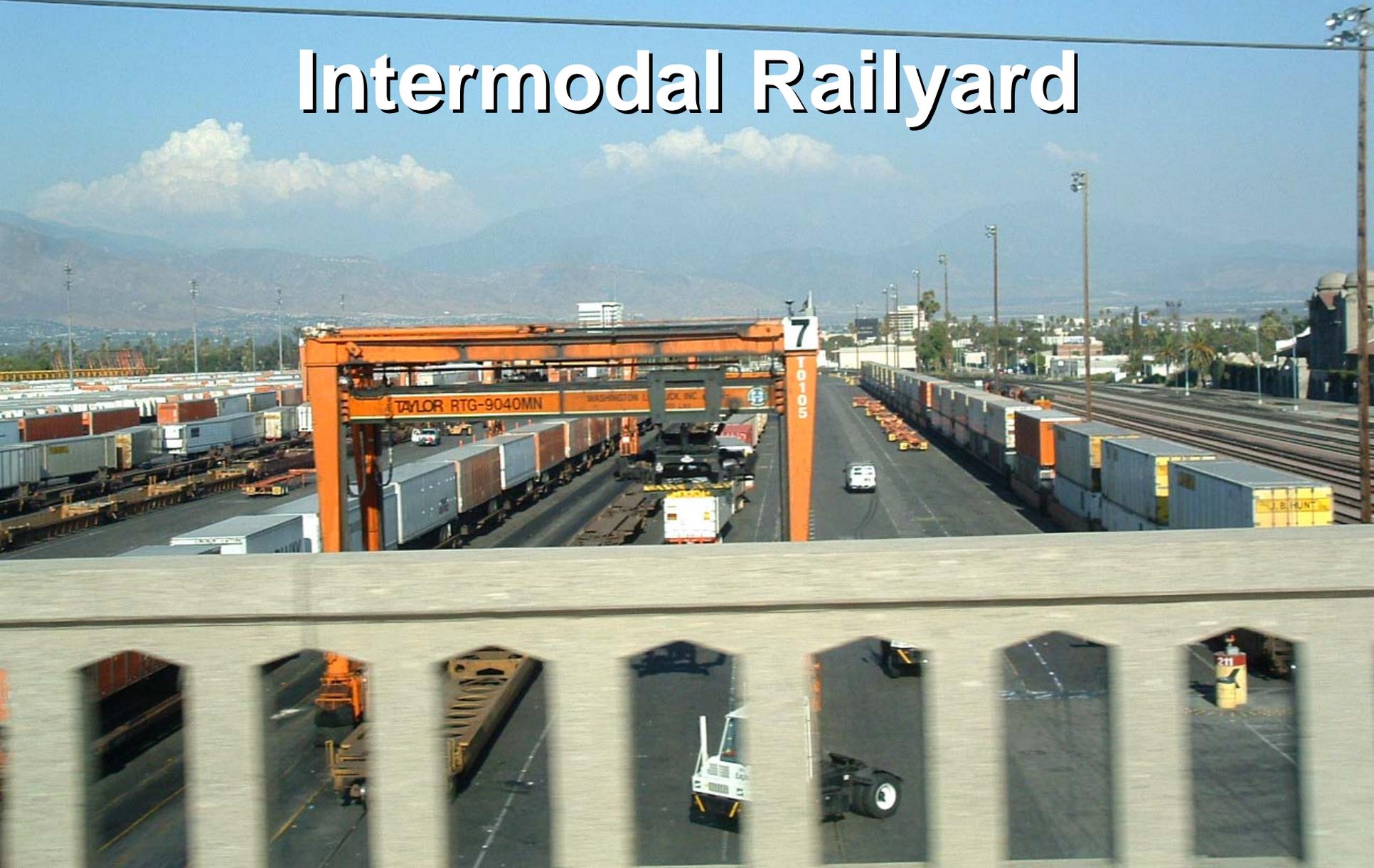
8 Intermodal Railyards DPM Emission Inventory (2005)



10 Classification Railyards DPM Emission Inventory (2005)



# BNSF San Bernardino Intermodal Railyard



# BNSF San Bernardino Railyard

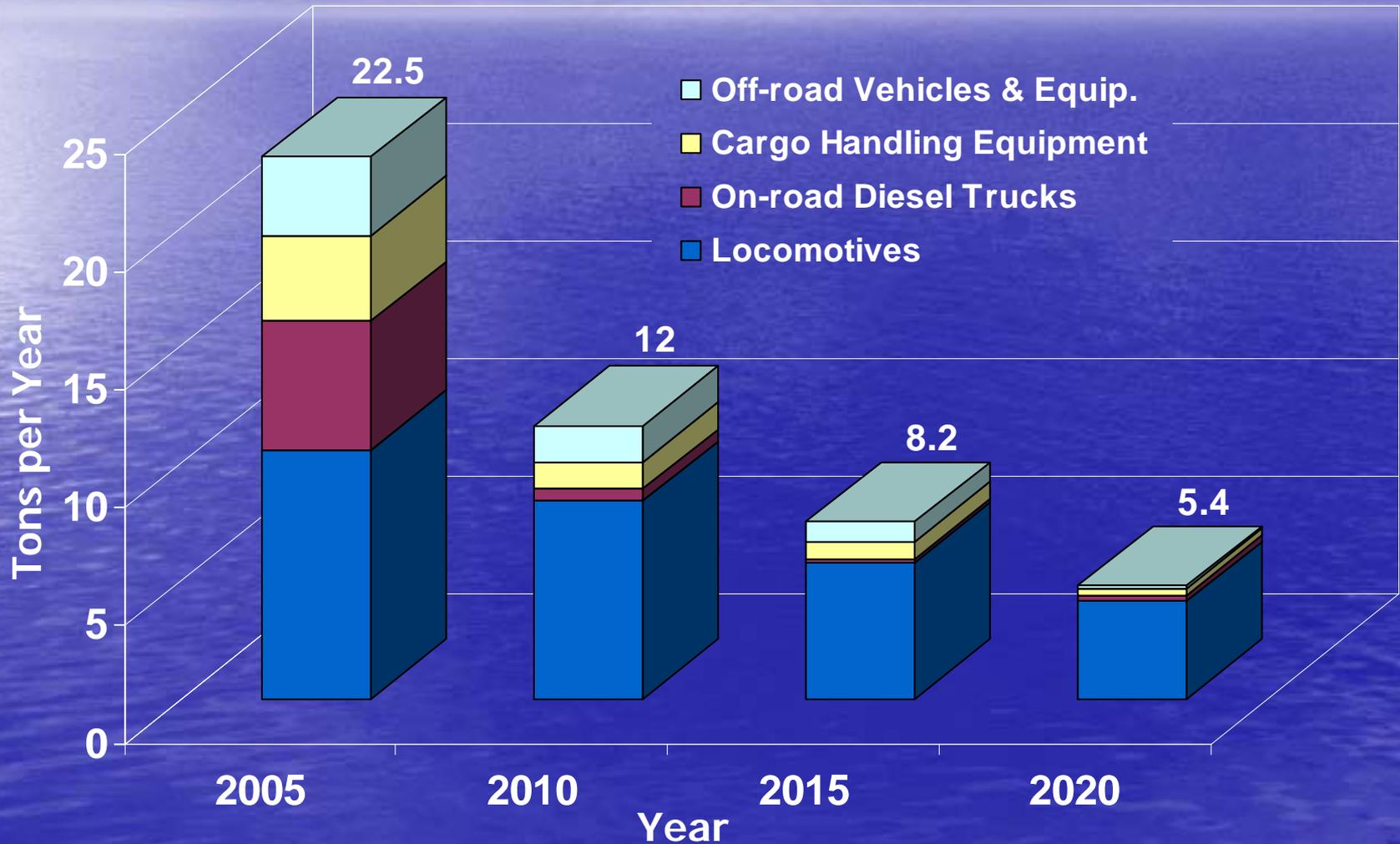
## Estimated 2005 Diesel PM Emissions

Diesel PM Emission Sources	San Bernardino Railyard	
	Tons/Year	Percentage
<b>Locomotives</b>	<b>10.6</b>	<b>47%</b>
<i>Line Haul Locomotives</i>	<i>6.1</i>	<i>27%</i>
<i>Switch Locomotives</i>	<i>4.1</i>	<i>18%</i>
<i>Refueling</i>	<i>0.4</i>	<i>2%</i>
<b>On-road Trucks and Vehicles</b>	<b>5.4</b>	<b>24%</b>
<b>Cargo Handling Equipment</b>	<b>3.0</b>	<b>13%</b>
<b>Off-road Vehicles and Equipment</b>	<b>3.4</b>	<b>15%</b>
<b>Other Stationary Sources</b>	<b>0.1</b>	<b>&lt; 1%</b>
<b>Total</b>	<b>22.5</b>	<b>100%</b>

# BNSF San Bernardino Railyard Estimated 2015 Diesel PM Emissions

Diesel PM Emission Sources		San Bernardino Railyard	
		Tons/Year	Percentage
Locomotives		6.3	77%
	<i>Line Haul Locomotives</i>	3.7	45%
	<i>Switch Locomotives</i>	1.9	23%
	<i>Refueling</i>	0.7	9%
On-road Trucks and Vehicles		0.2	2%
Cargo Handling Equipment		0.7	9%
Off-road Vehicles and Equipment		0.9	11%
Other Stationary Sources		0.1	1%
<b>Total</b>		<b>8.2</b>	<b>100%</b>

# BNSF San Bernardino Railyard Diesel PM Emissions



# BNSF San Bernardino Railyard

## Estimated Changes in DPM Cancer Risks by 2015 (from existing measures)

- MICR (Maximum Individual Cancer Risk)

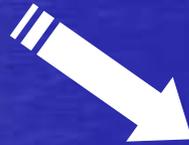
2,500



330

- Exposed Population (> 10 in a million)

300,000



86,000

# Summary

- Diesel PM public health risks are still too high in 2015
- The mitigation plan provides significant diesel PM emissions reductions from 2010 to 2015 and later
- However, still need earlier and more diesel PM emissions reductions
- ARB is preparing a technical document to evaluate:
  - Feasibility and costs of additional locomotive and railyard mitigation measures
  - Provide earlier and more locomotive and railyard emissions reductions

# ARB Technical Evaluation Document

## Strategies to Further Reduce Railyard and 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)
- Hold public workshops and request comments  
Fall 2008

# 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>