



Draft ARB Health Risk Assessments for the UP City of Industry Railyard

March 11, 2008

California Environmental Protection Agency

 **Air Resources Board**



Presentation Overview

- Meeting Purpose/Public Review Period
- Background
- Methodology for Preparing the Draft Assessments
- Results of the Draft Assessments
- Actions to Reduce Health Risk
- Next Steps



Purpose and Public Review

➤ Purpose of tonight's meeting:

- Present draft analyses and explain results
- Initiate process for review and comment
- Explain emission reduction efforts underway

➤ After tonight's meeting, there will be:

- Opportunity for comments within 30 days
- Consultation to obtain your ideas on possible future emission reduction actions



Health Risk Assessment Timelines

Draft Health Risk Assessments Completed in 2007		Draft Health Risk Assessments Released in 2008	
Railyard	Railroad	Railyard	Railroad
Commerce/Eastern	BNSF	Colton	UP
Hobart	BNSF	ICTF/Dolores	UP
Richmond	BNSF	Industry	UP
Stockton	BNSF	Oakland	UP
Watson	BNSF	Barstow	BNSF
Commerce	UP	San Bernardino	BNSF
LATC	UP	San Diego	BNSF
Mira Loma	UP		
Stockton	UP		

Background

- **Part of our commitment to address pollution impacts on communities**
 - Implements the ARB Goods Movement Plan
 - Required by the ARB/UP/BNSF Railroad Agreement
- **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



Purpose of the Assessments

- Identify pollution sources in the railyards
- Determine exposures to the public
- Estimate the health risks
- Put the railyard risks into perspective with other sources
- Provide information needed to reduce the risks



Scope of the Draft Assessments

- **Two major parts:**
 - Health risk assessment for the railyard
 - Health risk assessment for significant diesel sources surrounding the community
- **Separate report for each railyard**
- **Focus on diesel PM** - other toxics evaluated, TACs small relative to diesel PM

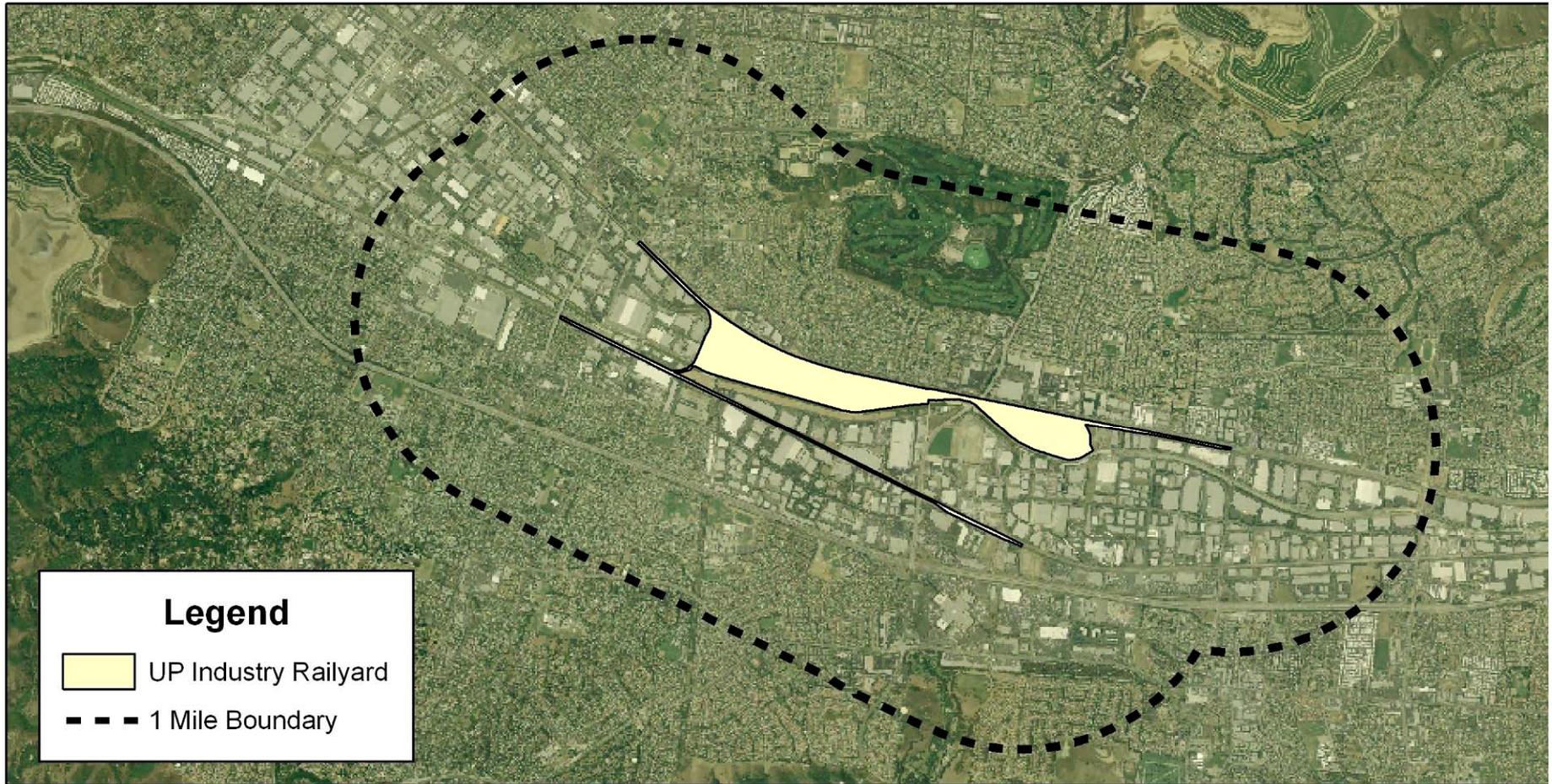


Railyard Risk Assessment Methodology

- **Prepare the best possible baseline emissions inventory**
- **Complete air dispersion modeling**
- **Provide estimates of health risks**
- **Determine other sources of risks**

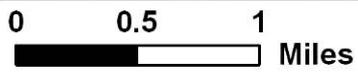


UP City of Industry Railyard With One-Mile Off-Site Boundary

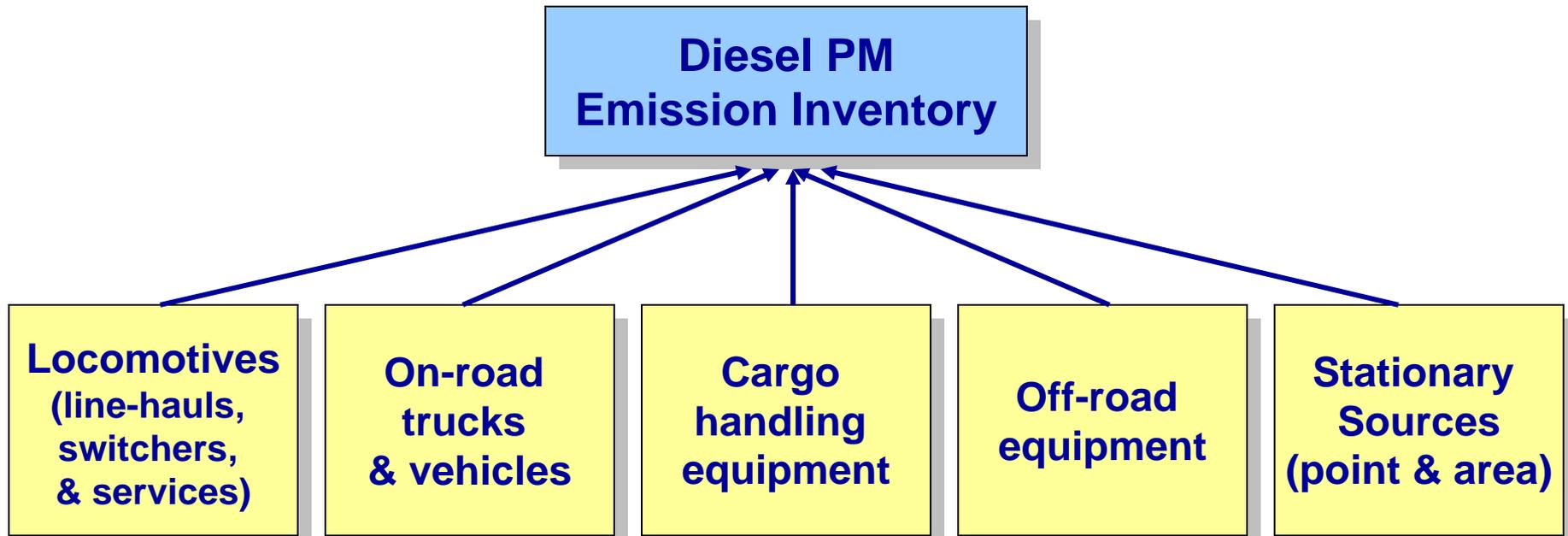


Legend

-  UP Industry Railyard
-  1 Mile Boundary



Prepare Railyard Emissions Inventory



Summary of UP City of Industry Railyard 2005 Diesel PM Emissions

Facility-wide Source Types	Tons per year*	Percentage*
Locomotives	5.9	54%
Switch Locomotives	3.3	30%
Line Haul Locomotives	2.6	24%
Service/Maintenance	0.01	<0.1%
Cargo Handling Equipment	2.8	25%
On-Road Heavy-Duty Trucks	2.0	18%
Transport Refrigeration Units (TRUs) and Refrigerated Cars	0.3	2%
Total	10.9	100 %

*Numbers and percentages do not add precisely due to rounding

Non-Railyard Emission Inventories

- Focus on diesel PM sources
- On road trucks and stationary sources
- EMFAC-2007 (mobile), CEIDARS (stationary)



Summary of Nearby Non-Railyard Diesel PM Emission Inventory

Sources	Tons per Year
Heavy-Duty Diesel Trucks	27.6
Stationary Sources	0.02
Total	27.6



Comparison of Local Diesel PM Sources with Regional Sources

(tons per year in 2005)

Sources	Locomotive	Cargo Handling Equipment	On-Road Trucks	Other (e.g. Ships, Refrig. Trailers)	Total
South Coast Air Basin	300	500	2,000	5,000	7,800
Port of LA/Long Beach	20	170	40	1,570	1,800
UP City of Industry	5.9	2.8	2.0	0.3	10.9
Nearby Roadways	—	—	27.6	—	27.6

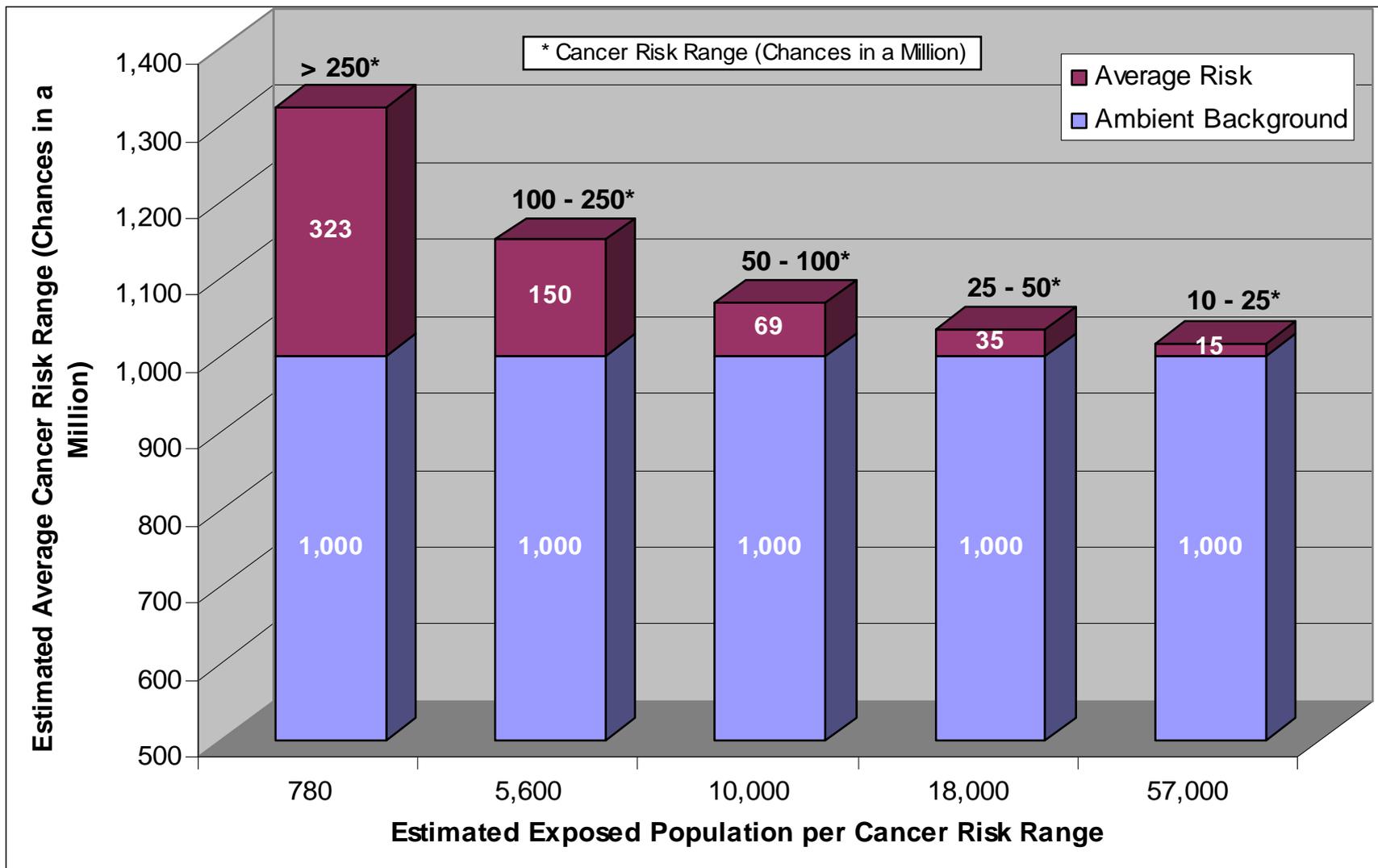


Estimated Health Risks

- **Combine air dispersion modeling results with toxicity data to estimate health risks**
- **Determine risks for cancer and non-cancer effects**
- **Express results as chances per million for cancer and a “hazard index” for non-cancer impacts**
- **Use toxicity data provided by the California Office of Environmental Health Hazard Assessment**

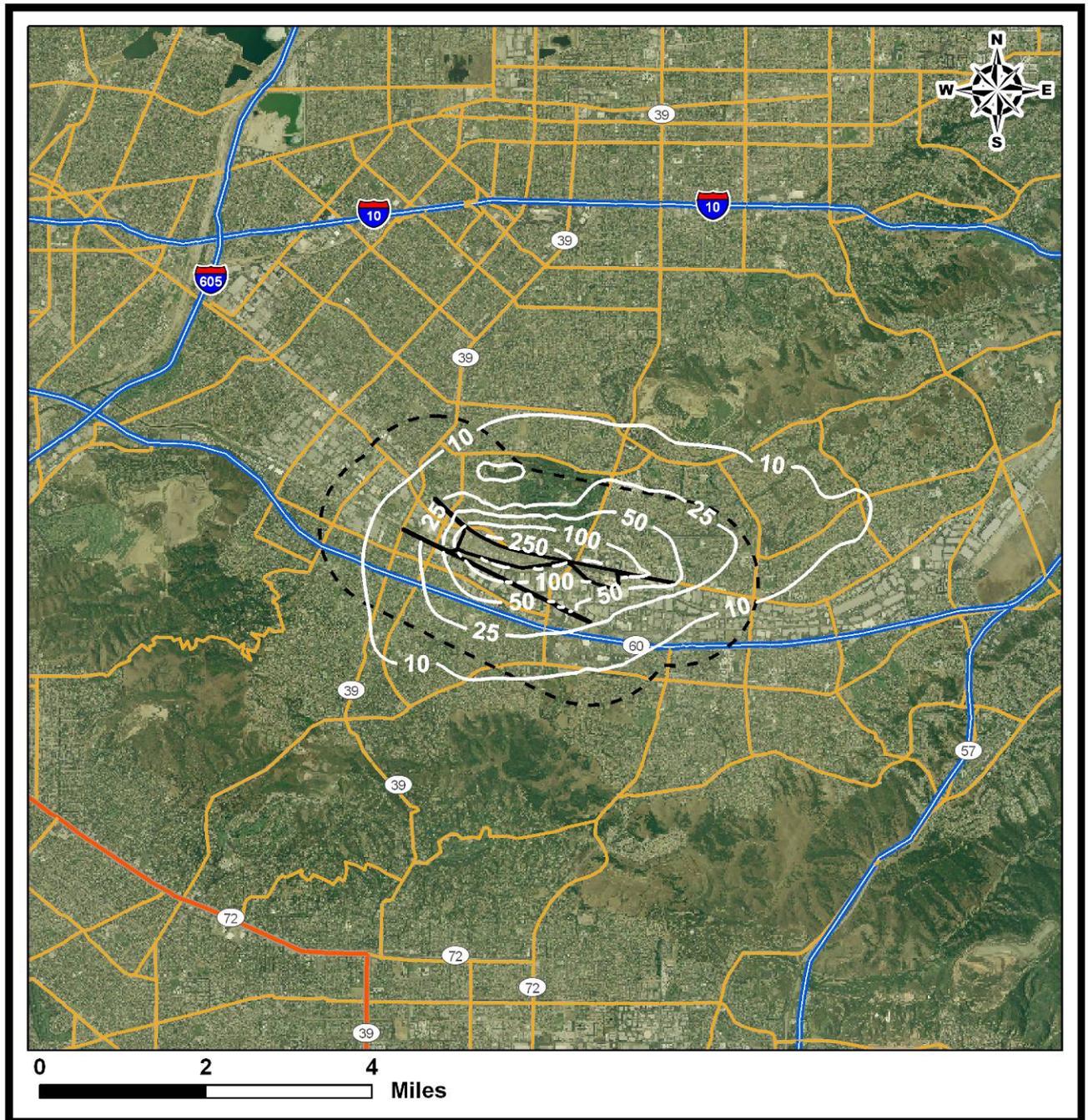


Estimated Potential Cancer Risks

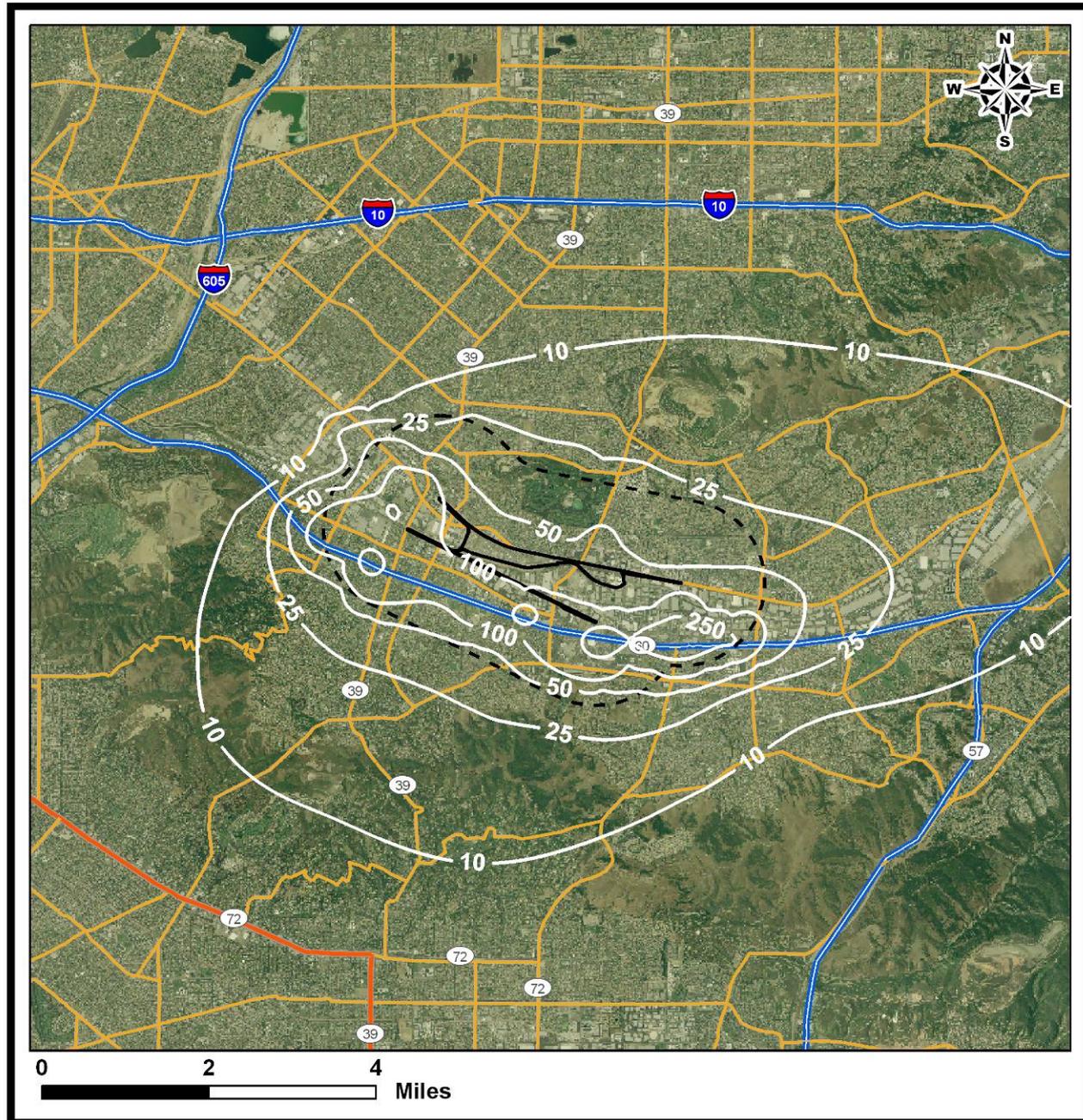


Estimated Potential Cancer Risks

UP City of Industry Railyard



**Estimated
Potential
Cancer Risks
Non-Railyard
Sources**



Actions to Reduce Health Risks



Approach to Reducing Emissions

- **ARB regulations**
 - Fuels
 - 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/2005 Statewide
- **Railroad yard 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 (measures above plus)

- 1998 NO_x 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%

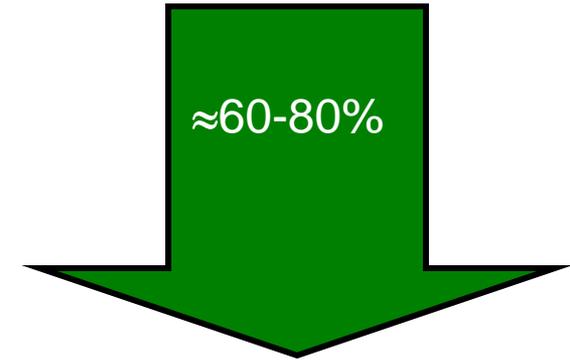


Possible Additional Measures

➤ 2005-2020:

- U.S. EPA locomotive rulemaking (Spring 2008)
- California replacement of switch locomotives

≈60-80%



Next Steps

- **Begin public comment period**
- **Review the draft assessments**
- **Submit written comments to ARB (by April 11)**
- **Meet with interested stakeholders**
- **Evaluate any additional feasible mitigation measures**



ARB Railyard HRA Contacts

- **Manager, Engineering Evaluation Section**
 - **Harold Holmes**
(916) 324-8029; hholmes@arb.ca.gov
- **Lead Staff**
 - **Eugene Yang, Ph.D., P.E.**
(916) 327-1510; eyang@arb.ca.gov
- **ARB Railyard HRA Website:**
 - **<http://www.arb.ca.gov/railyard/hra/hra.htm>**

