

# **West Oakland HRA: DRAFT Emissions Inventory for Year 2005**

**Presented by:  
Port of Oakland  
California Air Resources Board  
Bay Area Air Quality Management District  
August 21, 2007**



1

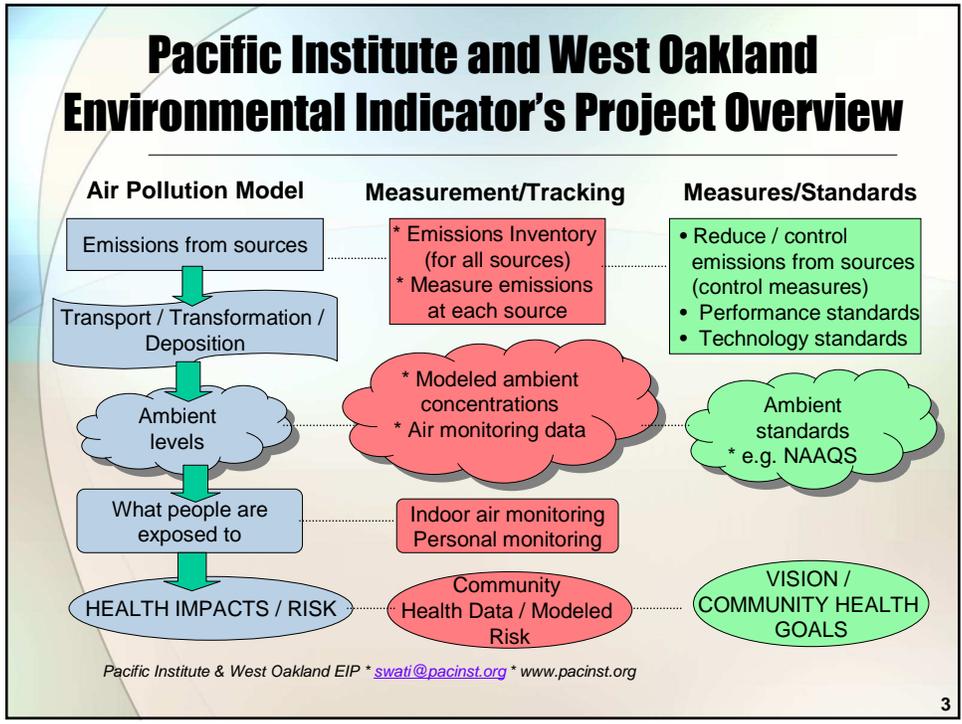
## **Overview of West Oakland Risk Assessment**

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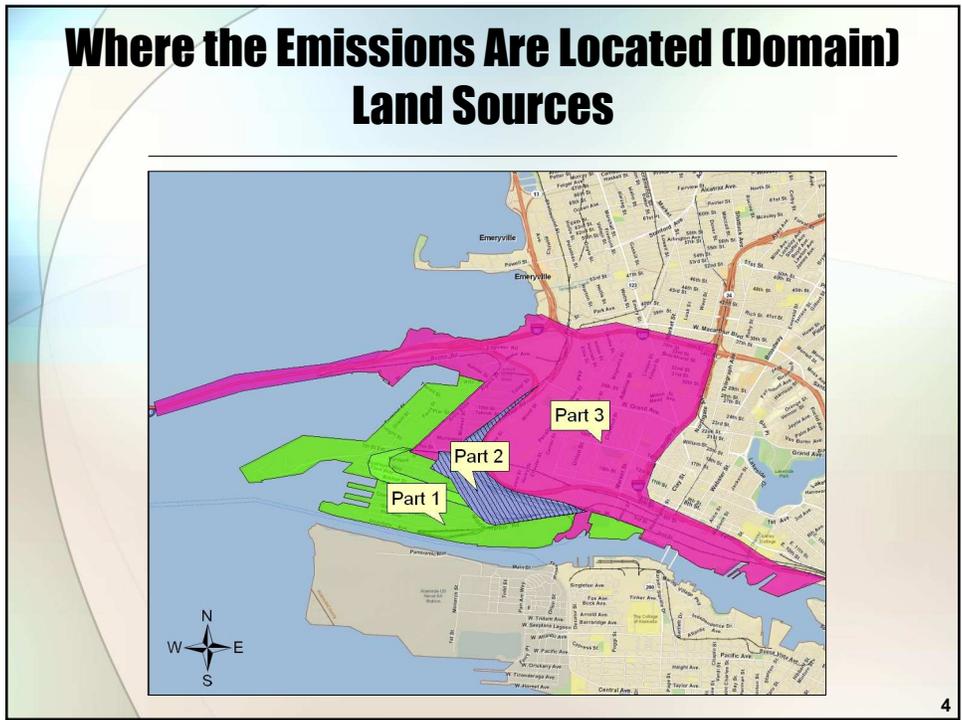
- **Assessment focuses on diesel PM**
- **Based on emissions in 2005**
- **3 complementary parts**
  - **Part 1: Seaport (Maritime) Port of Oakland**
  - **Part 2: Union Pacific Rail Yard**
  - **Part 3: Sources in [adjacent to] West Oakland**
- **Provides an estimate of the amount of diesel PM in the air**
- **Estimates the potential lifetime cancer risk and other health impacts**

2

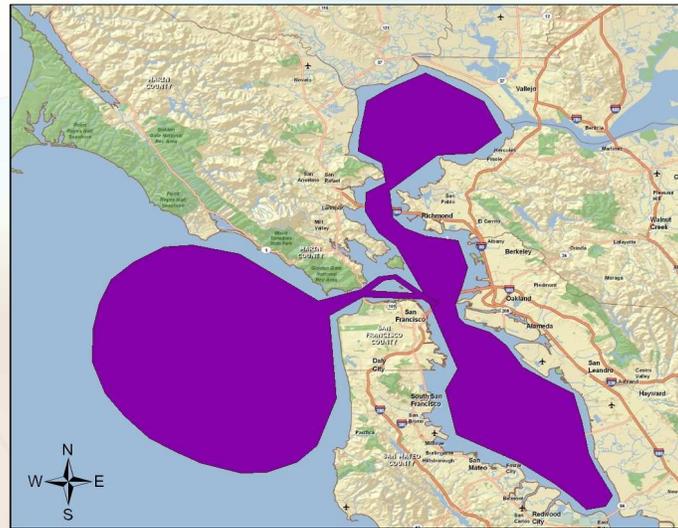
## Pacific Institute and West Oakland Environmental Indicator's Project Overview



## Where the Emissions Are Located (Domain) Land Sources



## Where the Emissions Are Located (Domain) Water Sources



5

## Emissions Inventory Overview Year 2005\* - tons per year (tpy)

\*Does not include businesses or emission sources established after 2005

<b>Part 1 - Port of Oakland</b>	<b>261 tpy</b>
<b>Part 2 - UP Rail Yard</b>	<b>7 to 11 tpy</b>
<b>Part 3 - Other West Oakland</b> (Sources in and adjacent to)	<b>627 tpy</b>
<b>TOTAL</b>	<b>~ 900 tpy</b>

6

**Part 1 – Port of Oakland**

Presented by:  
Roberta Reinstein and Delphine Prevost  
Port of Oakland

7

**Part 1 – Port of Oakland Overview**  
**Diesel PM Emissions Inventory\***

- **Categories included:**
  - Ocean-going vessels (OGV) 209 tpy
  - Harbor craft 13 tpy
  - Cargo handling equipment 21 tpy
  - On port diesel trucks 16 tpy
  - On port rail 2 tpy
- **TOTAL 261 tpy\*\***

\* All numbers are rounded  
\*\* Total PM is 272 tpy

8

## Part 1 – Ocean-Going Vessels (OGVs) Where Emissions are Located



9

## Part 1 – Ocean-Going Vessels (OGVs)\*

Type of Activity	Diesel PM Emissions (tpy)	Number of Emission Sources
Transiting to and from outer buoy	105	1,916 ship visits
Maneuvering	41	
Hotelling	61	20.7 hours per ship call
Anchorage	2	125 anchorages
<b>TOTAL</b>	<b>209</b>	

\*All numbers are rounded

10

## Part 1 – Harbor Craft Where Emissions are Located



11

## Part 1 – Harbor Craft\*

Type of Activity	Diesel PM Emissions (tpy)	Number of Emission Sources
Tug (OGV assist)	13	6,787 tug assists
Dredging	<0.5	72 tug assists
Total Emissions	13	

\*All numbers are rounded

12

## Part 1 – Cargo Handling Equipment Where Emissions are Located



13

## Part 1 – Cargo Handling Equipment\*

Type of Activity	Diesel PM Emissions (tpy)	Number of Emission Sources
Top and side picks/other	6	149 pieces
RTG Cranes	3	36 pieces
Yard trucks / other	12	337 pieces
<b>TOTAL</b>	<b>21</b>	<b>522</b>

\*All numbers are rounded

14

## Part 1 – Diesel Trucking Where Emissions are Located



15

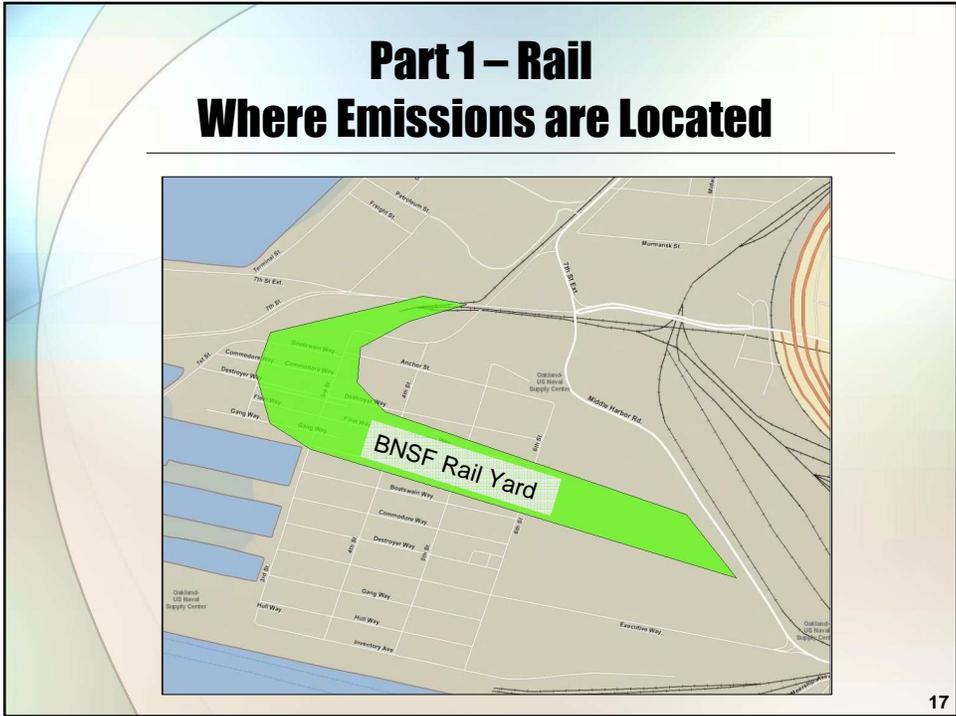
## Part 1 – Diesel Trucking\*

Type of Activity	Diesel PM Emissions (tpy)	Number of Emission Sources
Surface roads (to freeway entrance; from freeway exit)	5	~2.62 million truck trips in and out of marine facilities
Gate Idling	0.5	
In terminal truck movement	9	~912,000 truck trips in and out of rail facilities
In terminal idling	1.5	
<b>Total Emissions</b>	<b>16</b>	

\*All numbers are rounded

16

## Part 1 – Rail Where Emissions are Located



## Part 1 – Rail\*

Type of Activity	Diesel PM Emissions (tpy)
Refueling area	minimal
Arrival/departure	1
Switching engines	1
<b>TOTAL</b>	<b>2</b>

\*All numbers are rounded

**Part 2 – UP Rail Yard**

Presented by:  
Dan Donohoue  
Air Resources Board

19

**Part 2 – UP Rail Yard**  
**Diesel PM Emissions Inventory - pending**

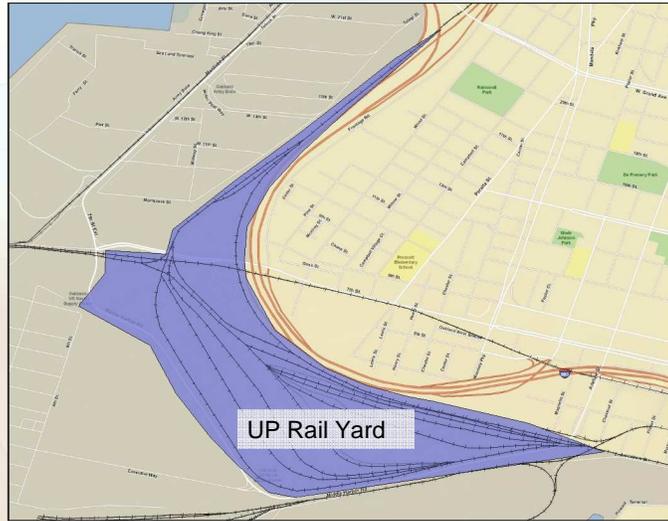
- **Categories included:**
  - Locomotives
  - TRU / refrigerator cars
  - Diesel trucks
  - Cargo handling equipment
  - Heavy off-road equipment
  - Stationary sources (generators)

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• **TOTAL** ~ 7 to 11 tpy

20

## **Part 2 – UP Rail Yard Where Emissions are Located**

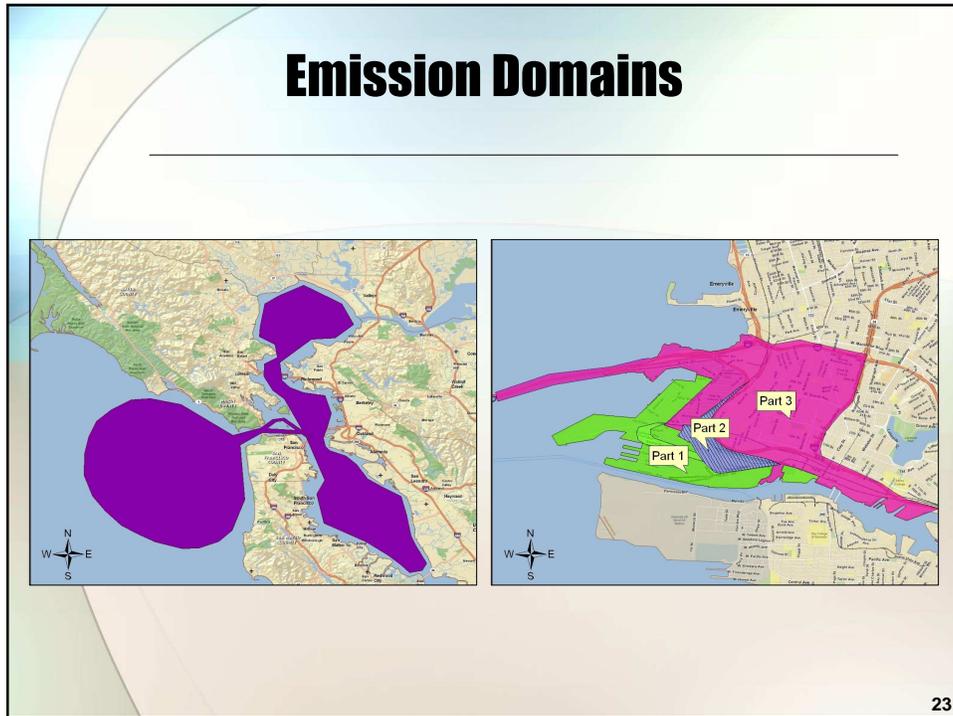


21

## **Part 3 – Emissions in (Adjacent to) the West Oakland Community**

Presented by:  
Henry Hilken  
Bay Area Air Quality Management District  
and  
Greg Harris  
Air Resources Board

22



### Part 3 – Emissions In (Adjacent to) West Oakland Diesel PM Emissions Inventory

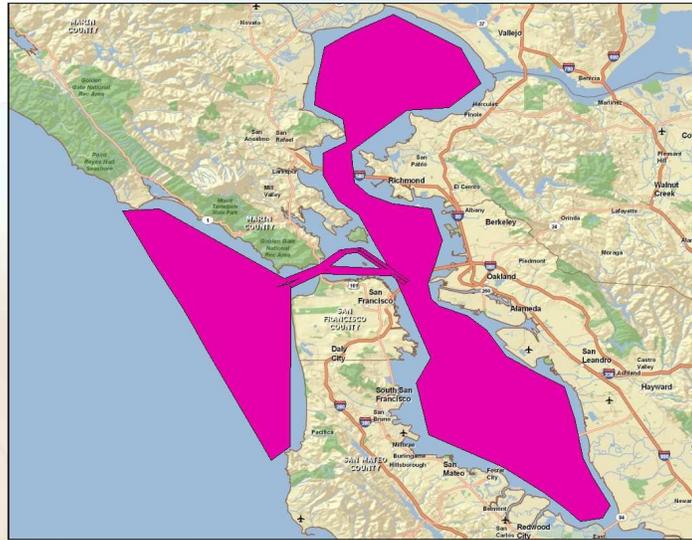
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- **Categories included:**
  - Off-port harbor craft                      278 tpy
  - Off-port OGVs                                233 tpy
  - Freeways / roads                            92 tpy
  - Construction                                13 tpy
  - Off-port rail                                 5 tpy
  - Cargo handling equipment                4 tpy
  - Trucking / dist. Centers                    2 tpy
  - Stationary sources                         < 1 tpy

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- **TOTAL**                                      ~ 627 tpy

## Part 3 – Harbor Craft Where Emissions are Located



25

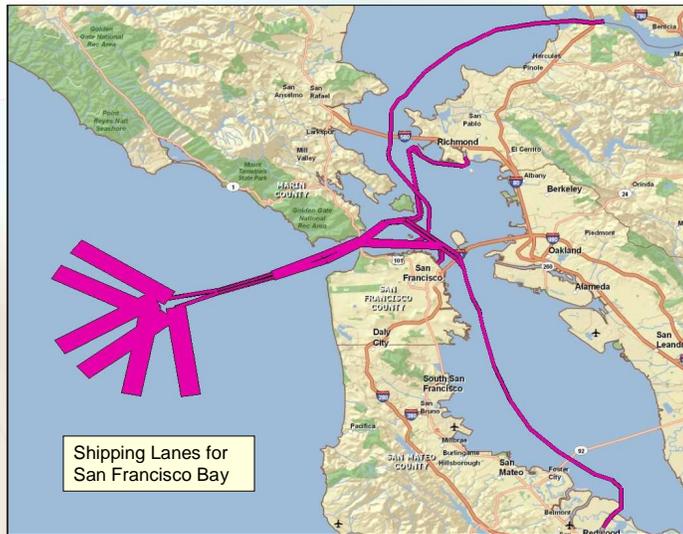
## Part 3 – Harbor Craft\*

Type of Activity	Diesel PM Emissions (tpy)	Number of Vessels
Charter fishing	17	155
Commercial fishing	28	859
Crew and supply	3	9
Ferry	114	138
Pilot	1	4
Towboats	16	24
Tugboats	86	49
Workboats	2	35
Other	11	65
<b>TOTAL</b>	<b>278</b>	<b>1,338</b>

\*All numbers are rounded

26

### Part 3 – Off Port Ocean Going Vessels Where Emissions are Located

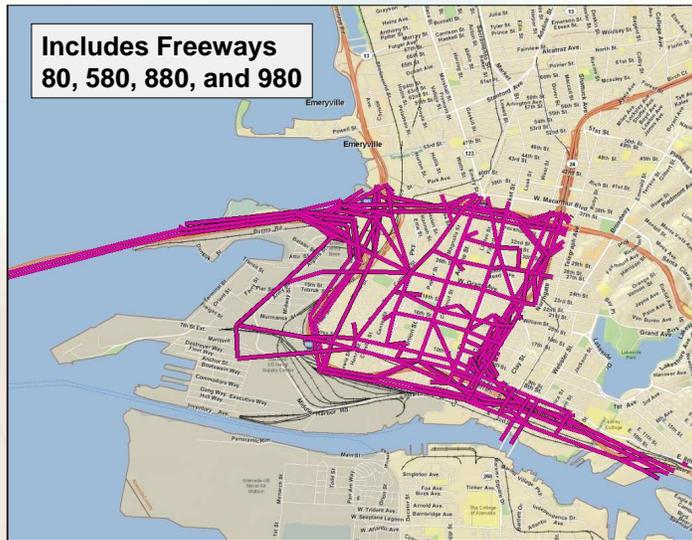


### Part 3 – Off Port Ocean Going Vessels\*

Type of Activity	Diesel PM Emissions (tpy)	Number of Emission Sources
Transiting (to and from outer buoy) and maneuvering	188	1,637 vessel visits
Hotelling	35	1,637 vessel visits
Anchorage	10	933 vessel anchorages
<b>Total Emissions</b>	<b>233</b>	

\*All numbers are rounded

### Part 3 – Freeways and Roadways Where Emissions are Located



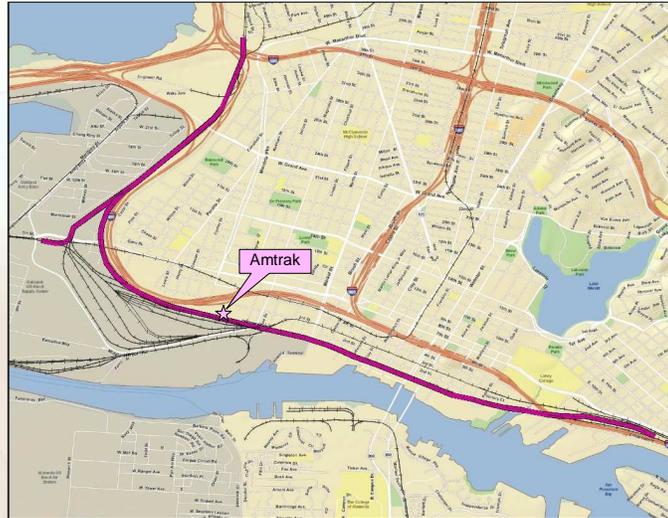
### Part 3 – Freeways and Roadways\*

Type of Activity	Diesel PM Emissions (tpy)	Number of Emission Sources
Trucks	86	313,861 vehicle miles per day (VMT)
Buses	6	19,973 VMT
<b>TOTAL</b>	<b>92</b>	<b>~334,000 VMT</b>

\*All numbers are rounded

Includes Freeways 80, 580, 880, and 980

### Part 3 – Off-Port Rail Where Emissions are Located



31

### Part 3 – Off-Port Rail\*

Source	Diesel PM Emissions (tpy)	Number of Emission Sources
Locomotive movement (includes Amtrak, UP, and BNSF off-port/off-rail yard)	1.3	
Amtrak passenger train movement (in yard)	0.2	13 trains/day M-F; 7 trains per day S-S
Amtrak Switcher	0.4	1 switcher on site
Shuttle Wagon	<0.1	1 shuttle on site
Amtrak locomotive idling and maintenance	2.8	13 trains/day M-F; 7 trains per day S-S
Total Emissions	~5	

\*All numbers are rounded

32

### Part 3 – Cargo Handling Equipment Where Emissions are Located



33

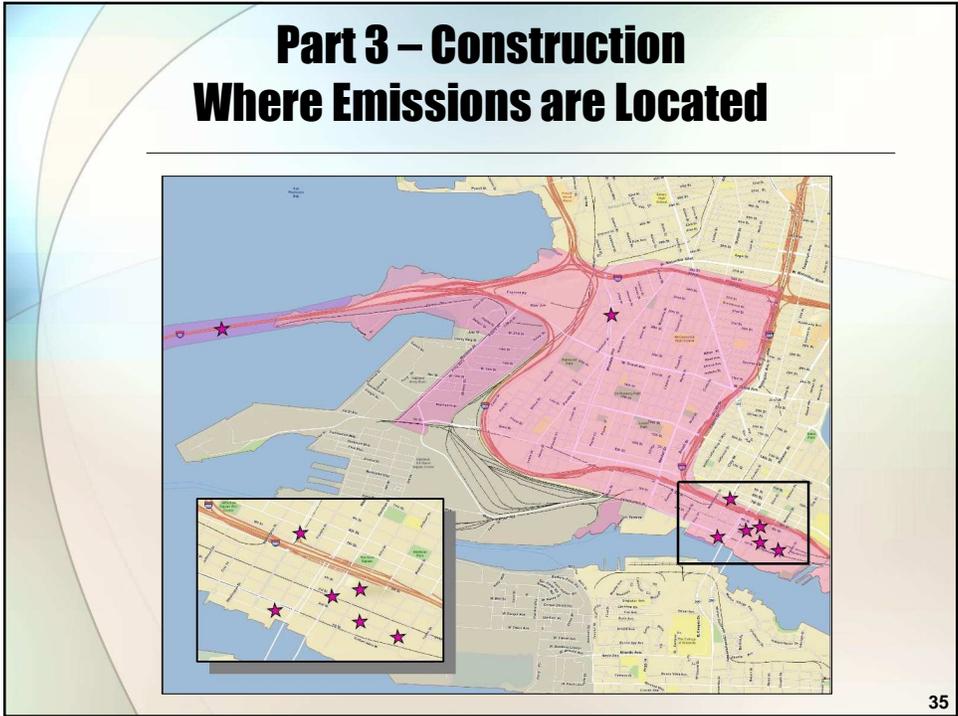
### Part 3 – Cargo Handling Equipment\*

Source	Diesel PM Emissions (tpy)	Number of Emission Sources
Schnitzer Steel	3.7	
Compass Container	<0.3	
Port Maintenance Facility	<0.1	
East Bay Resources	<0.1	
Mutual Express	<0.1	
Roadway Express	<0.2	
<b>TOTAL</b>	<b>~4</b>	<b>~ 80 pieces</b>

\*All numbers are rounded

34

## Part 3 – Construction Where Emissions are Located

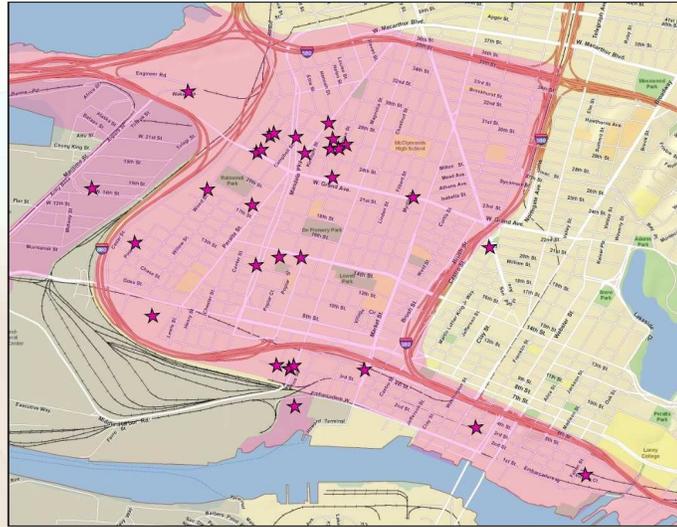


## Part 3 – Construction Activity\*

Project	Diesel PM Emissions (tpy)	Number of Emission Sources
66 Franklin Street	<0.1	10
206 Second Street	<0.1	9
Harbor View Lofts (Aqua Via)	0.1	9
300 Harrison Street	0.1	9
8 Orchids	0.1	9
Ettie Street-Mandela Parkway	0.1	9
Wheelink Project	0.1	9
Bay Bridge Construction	12.1	112
<b>Total</b>	<b>~13</b>	<b>176</b>

\*All numbers are rounded

## Part 3 – Trucking and Distribution Centers Where Emissions are Located



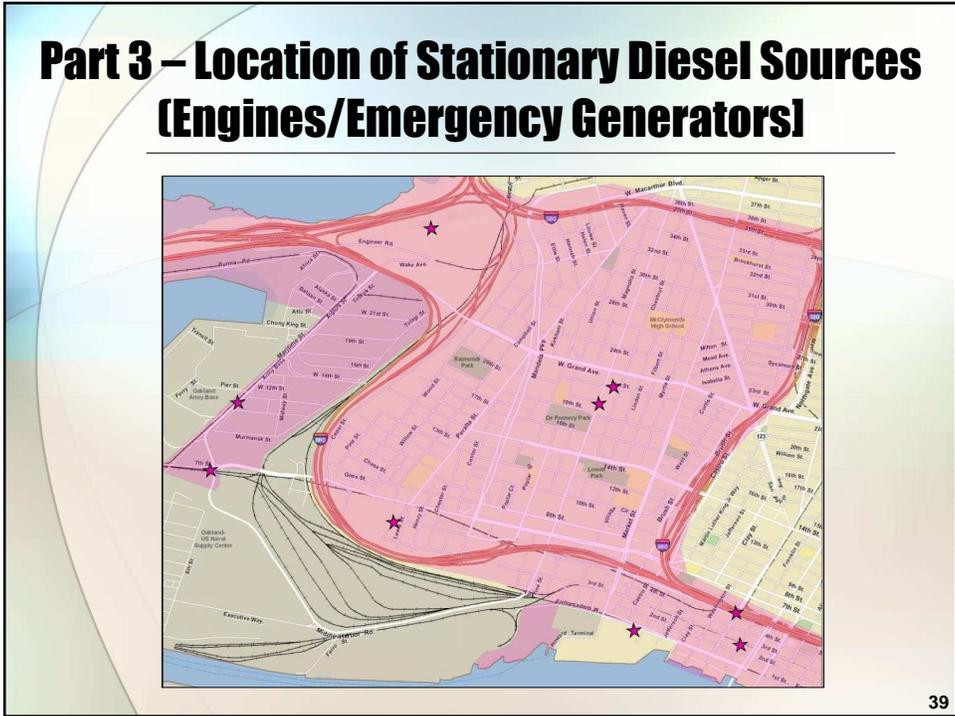
37

## Part 3 – Trucking and Distribution Centers

- 34 facilities / centers inventoried
- Various number of truck trips per facility
- Most were < 0.01 tpy
- List available
- TOTAL ~ 2 tpy

38

## Part 3 – Location of Stationary Diesel Sources (Engines/Emergency Generators)



## Part 3 – Stationary Diesel Sources (Engines/Emergency Generators)\*

Type of Activity	Diesel PM Emissions (tpy)	Number of Sources
EBMUD – 3 locations	< 0.2	3 prime engines / 8 standby; 2 reciprocating engines
USPS	minimal	2 standby
County of Alameda – 2 locations	minimal	3 standby
BNSF	minimal	1 standby
SSA terminal	minimal	1 standby
Total Emissions	<0.2	

\*All numbers are rounded

## **Future Updates to Emissions Inventories and Risk Assessments**

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- **Refine current estimates of on-road truck emissions**
  - Survey truck traffic and idling in West Oakland
  - Refine estimates of “Port trucks” on streets and freeways
- **Track emissions of diesel PM in future years**
  - Changes in activity
  - Construction at Port and in West Oakland
  - State & federal mandated controls
  - Additional possible controls
- **BAAQMD will repeat modeling in future years to track risk-reduction progress**

41

## **Next Steps and Schedule**

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- **Finalize inventory by end of August**
- **Perform modeling by end of September**
- **Draft HRA by end of October**
- **Final HRA by end of November**

42

## Contacts

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- **Port of Oakland**  
Delphine Prevost (510) 627-1141  
[dprevost@portoakland.com](mailto:dprevost@portoakland.com)

43

## Additional Information

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- **BAAQMD Community Air Risk Evaluation (CARE) Program**  
<http://www.baaqmd.gov/CARE/index.htm>
- **Port of Oakland Seaport Air Emissions Inventory**  
<http://www.portofoakland.com/envirom/airEmissions.asp>
- **ARB's Community Health Program**  
<http://www.arb.ca.gov/ch/communities/ra/westoakland/westoakland.htm>

44