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*Committed to Achieving Clean Air to Protect
the Public's Health and the Environment*

CARE Program Update West Oakland Activities

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Bay Area Air Quality Management District

CARE Task Force Meeting

December 12, 2007

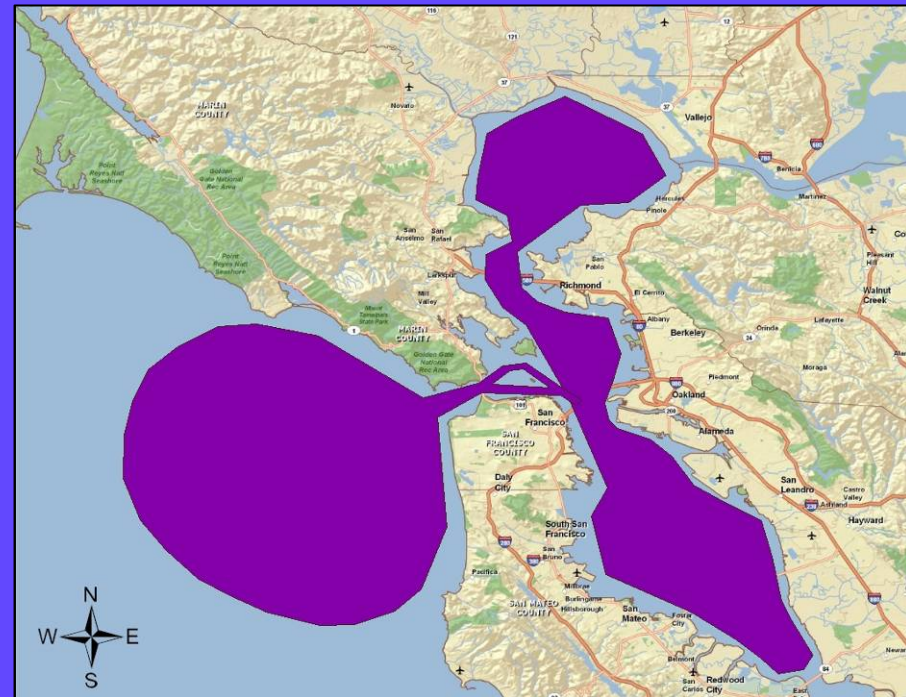
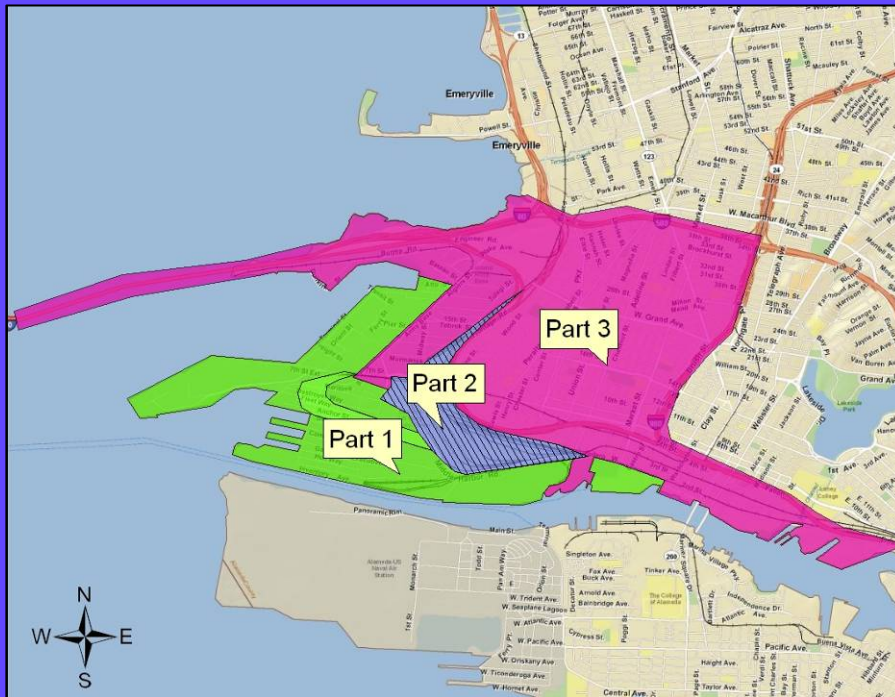
Overview

- **West Oakland Health Risk Assessment**
 - Emissions & modeling status
 - Project schedule
- **West Oakland Truck Traffic Survey**
 - Work with the community
 - Project kick-off meeting (9/26/07)
 - Identifying survey locations
- **West Oakland Measurement Study**
 - EPA grant status
 - Project schedule
 - Establishing “reference” air quality station & meteorological measurement stations

West Oakland Health Risk Assessment

- Assessment focuses on diesel PM
- Based on emissions in 2005
- Three parts:
 - Part 1: Seaport -- Port of Oakland
 - Part 2: Union Pacific Rail Yard
 - Part 3: Sources in West Oakland not on Port property
- Estimates the amount of diesel PM in the air
- Estimates the potential lifetime cancer risk and other health impacts

West Oakland Health Risk Assessment Emission Domains



Emissions Inventory Overview

Year 2005 - tons per year (tpy)

Part 1 - Port of Oakland 261 tpy

Part 2 - UP Rail Yard 7 to 11 tpy

Part 3 – Other 627 tpy

(Major sources that may affect West Oakland)

TOTAL ~ 900 tpy

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

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)

- TOTAL ~ 7 to 11 tpy

Part 3 – Emissions Influencing West Oakland

Diesel PM Emissions Inventory

- 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

- TOTAL ~ 627 tpy

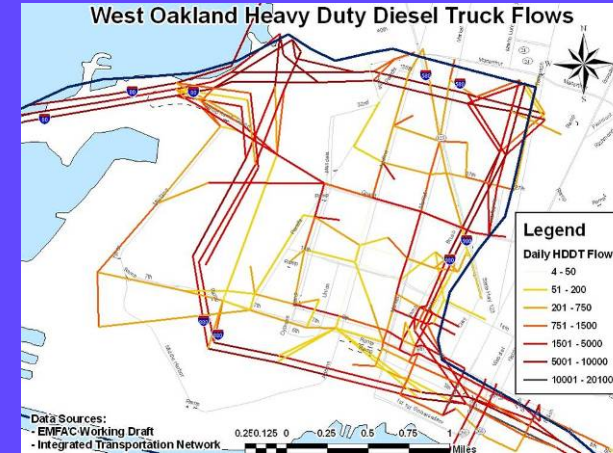
Next Steps and Schedule

Finalize inventory report	December 2007
Complete modeling	December 2007
Cancer & non-cancer risk assessment	January 2008
Future risk (reflects growth in activity and effects of controls)	January 2008
Draft HRA released for public review	February 2008
Complete final HRA report	Early Spring 2008

West Oakland Truck Survey

Refine estimates of local truck traffic and idling

- Map West Oakland roadways
- Identify trucking routes
 - Field observations
 - GPS data
 - Satellite/aircraft images
- Count trucks & cars at fixed locations
 - Automated counters
 - Work with community on surveying
 - Count during winter & spring seasons
- Extrapolate counts to other locations
- Identify truck idling locations
- Refine estimates of diesel truck emissions



West Oakland Truck Survey Draft Schedule

Meet with community members to discuss methods	January 2008
Draft protocol	January 2008
Define truck routes	February 2008
Start traffic counts	February 2008
Summer counts	June 2008
Estimate revised truck emissions	July 2008



IKONOS satellite image

Refine HRA Modeling for On-Road Trucks

- Use survey results to update diesel PM emissions estimates used for West Oakland HRA
- Refine HRA modeling for on-road trucks in Part 3
- Improve estimate of importance of trucks on local roadways to annual risk

West Oakland Measurement Study

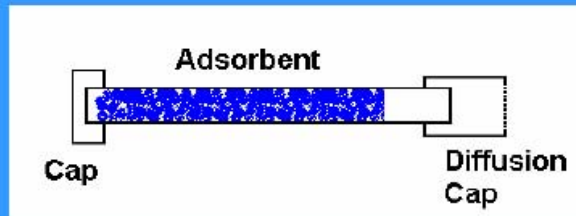
- EPA Community Measurement Grant
 - Expect award letter by end of December
- Work with West Oakland Community and Port of Oakland
 - Define goals & establish measurement sites
- Increase density of air quality measurements in West Oakland via “saturation monitoring”
 - Characterize local-scale pollutant concentrations and gradients
- Intend to supplement with mobile measurements

Time-Integrated and Continuous Measurements

- Seven-day-average sampling at multiple sites
 - NO_x, SO₂, VOC, carbonyl compounds (passive sampling)
 - PM_{2.5} mass and organic & elemental carbon (active samplers)
- Continuous measurements at additional sites
 - VOC, PM_{2.5}, black carbon, ultrafine particles
 - More expensive sampling at a few locations to provide hour-to-hour variations

Passive Adsorbent Sampler -- Example

Passive Adsorbent Sampler (PAS)



Allen et al, 2007

Measurement Study Status

- Establishing Reference station in West Oakland
 - EBMUD Office at Linden & West Grand
- Developing sites for meteorological measurements nearby
 - EBMUD Sewage Treatment Plant
- Work with Port and community members to establish
 - Additional Reference station
 - Passive sampling locations

Summary

- West Oakland HRA will identify cancer and non-cancer health risks from diesel PM for 2005 and future years
- Truck survey will provide refined on-road truck emissions
- Supplemental air quality measurements will help to evaluate modeling results and help characterize community health risks from toxic air contaminants