



Clearing the Air in West Oakland: Port Impacts, Freight Transport & Environmental Justice

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West Oakland: A Snapshot

- ✓ Area “inside the freeways”
- ✓ ~22,000 residents (~65% African-American, 9% Asian, 11% White, 10% Latino)
- ✓ Median household income \$21,124



West Oakland Environmental Indicators Project (EIP) Area

0 0.25 0.5 1 Miles

1:7,200
1 inch equals 600 feet

Data Sources:
ESRI
California Spatial Information Library



West Oakland: Mix of Industrial & Residential land use



- ✓ 50-60 Truck-related businesses
 - ✓ Repair shops, parking facilities,
- ✓ U.S. Postal Service distribution center
- ✓ Highways: I-880, I-980, I-580
- ✓ Port of Oakland
 - ✓ Nation's 4th largest container port
 - ✓ 2 million TEU's (twenty-foot equivalent) in 2005
 - ✓ Pollution sources include
 - ✓ Ships
 - ✓ Trucks
 - ✓ Trains
 - ✓ Cranes
 - ✓ Cargo Handling Equipment
- ✓ 2 Railyards & tracks that encircle West Oakland



Example of one risk from truck traffic: Overturn & spill in 2003



West Oakland: High Health Burden

West Oakland residents are five times more likely to be hospitalized for asthma than the average California resident (and children are 7 times more likely).

	1996	1997	1998	1999-2001
West Oakland (94607)	447	348	405	533
Alameda	182	196	208	178
California	124	130	124	105

Source: : Oakland Berkeley Asthma Coalition (March 2004); rates age-adjusted to 2000 US Census population estimates.

West Oakland: Diesel Hotspot

2003 “Clearing the Air” key findings

- Pilot indoor air monitoring study found diesel pollution levels five times higher in West Oakland homes vs. elsewhere in Oakland (China Hill) [$2.9 \mu\text{g}/\text{m}^3$ vs. $0.51 \mu\text{g}/\text{m}^3$]

Location	Black Carbon concentration measured in air ($\mu\text{g}/\text{m}^3$)	Corresponding Diesel Particulate Concentration in air ($\mu\text{g}/\text{m}^3$)	70 Year (Full Adult Life Span) Cancer Risk
West Oakland	2.1	2.90	1201 per million or 12 per 10,000
Background Oakland	0.37	0.51	212 per million or 2.1 per 10,000

Source: “West Oakland Diesel Emissions Inventory and Air Quality Monitoring Study,” Pacific Institute, November 2003

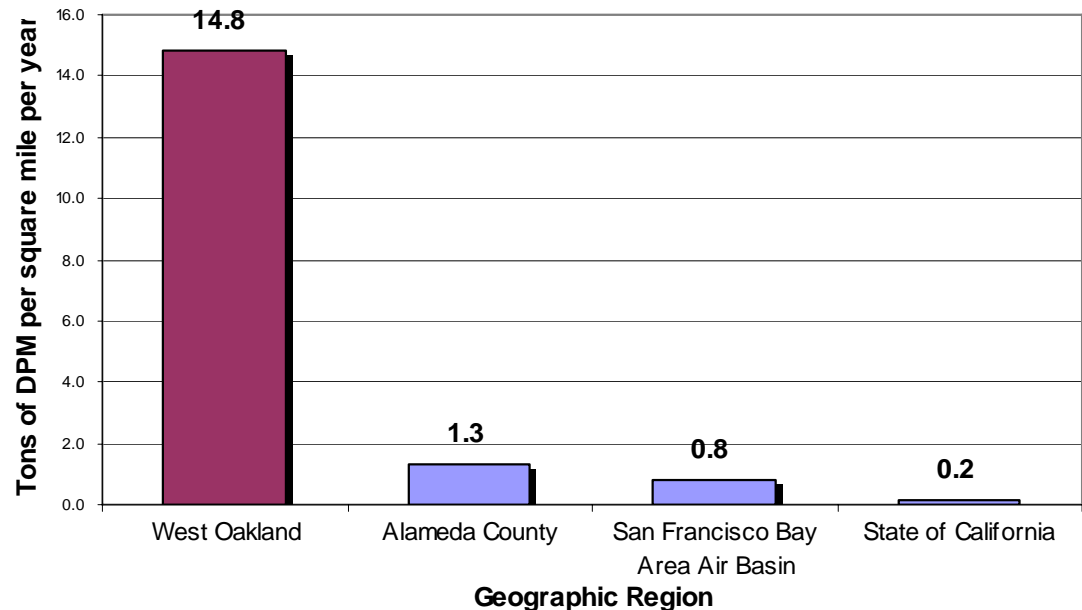
West Oakland: Diesel Hotspot

2003 “Clearing the Air” key findings : Emissions Inventory for West Oakland

- ✓ Port-related diesel truck traffic in West Oakland releases 125 pounds of diesel particulate matter per day, or ~16 tons per year

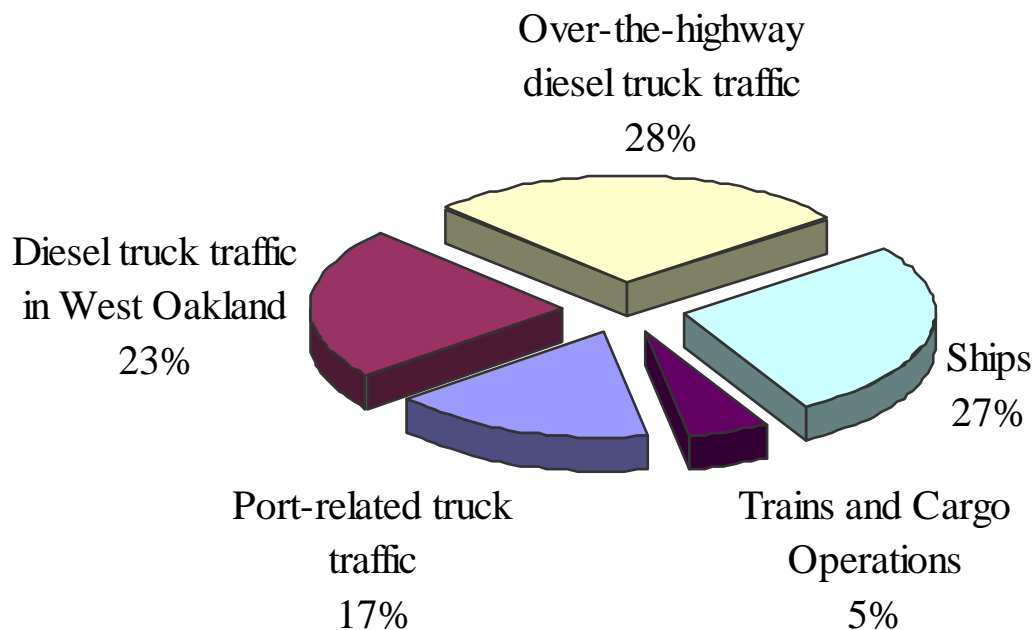
- ✓ Compared to Alameda County as a whole, West Oakland has 11 times more diesel emissions per square mile each year

Tons of Diesel Particulates per Square Mile by Region



Estimated Diesel Sources in West Oakland

Figure 2-3. Sources of Diesel Pollution in West Oakland



Source: "West Oakland Diesel Emissions Inventory and Air Quality Monitoring Study," Pacific Institute, November 2003

West Oakland: Modeled Diesel Levels

- Peak levels modeled at $14 \mu\text{g}/\text{m}^3$, on Port & UP Railroad property
- Most of 7th street, some Peralta / Wood St. at $4 \mu\text{g}/\text{m}^3$
- Remainder of W. Oakland $\sim 2\text{-}3 \mu\text{g}/\text{m}^3$



Source: "West Oakland Diesel Particulate Emissions Study, City of Oakland Environmental Services Division, September 2001"

West Oakland a snapshot of broader freight transport system

- ✓ “Goods Movement” or freight transport via ships, cranes, trucks, and trains. Industrial land uses include seaports, railyards, truck parking lots, distribution centers & warehouses
- ✓ In California, goods movement contributes to 75% of all the diesel pollution in the air, and 30% of the smog-forming nitrogen oxides
- ✓ The health impacts of these pollutants include:
 - o Premature death, asthma, lung cancer, low birthweight, cardiovascular illness

Health Impacts of Freight Transport

Other community health impacts include

- o Noise → disturbed sleep, increased stress, increased risk of heart attacks, poorer job and school performance
- o Pedestrian Safety
- o Decreased walkability and exercise → increased risk of overweight
- o Truck parking → decreased walking visibility & “sense of safety”
- o Rail-street grade conflicts, especially a concern during emergency events

Health costs of “goods movement”

- California Air Resources Board estimates annual costs of air pollution from freight transport in California at \$19.5 billion per year
 - 2400 premature deaths
 - 2000 hospital admissions (respiratory) costing \$67 million
 - 62,000 asthma & other lower respiratory symptoms costing \$1.1 million
 - 360,000 lost work days
 - 1.1 million lost school days
- ** More than ½ of this risk comes from truck pollution
- For every dollar invested in mitigation, \$3 to \$8 in health costs can be avoided

Source: California Air Resources Board, “Quantification of Health Impacts & Economic Valuation of Air Pollution from Ports and Goods Movement in California”

Port Pollution & Environmental Injustice

- Communities adjacent to freight transport hubs like the Port of Oakland are disproportionately low-income & minority – this is an environmental justice issue

	Median Income	% People of Color
California	\$47,493	53%
11 CA communities near freight hubs	\$31,829	79%
West Oakland	\$21,124	93%

Source: "Paying with Our Health: The Real Costs of Freight Transport in California," Ditching Dirty Diesel Collaborative & the Pacific Institute.

Driver Health Risks

- Truck drivers face high cancer risks from diesel exhaust exposure
 - Risks up to 10 times higher than OSHA-acceptable levels
 - Those with highest exposures face nearly double the lifetime lung cancer risk
- Other risks include asthma & respiratory disease, hearing loss, musculoskeletal injury, heart disease & hypertension, kidney & bladder disease. . .
- 2001 rates of occupational injury & illness among truck drivers higher than for “all construction” workers
 - 60% higher for nonfatal injury & illness
 - 223% higher for fatalities



[source: Bureau of Labor Statistics]

What Can be Done?

- City of Oakland can implement CARB's land use guidelines implementing a 500 foot buffer zone between homes and freeways
- Trucks are the #1 polluters (10,000 trucks currently making 6400 trips / day, estimated to double)
 - All trucks should meet 2007 engines standards
 - But clean-up cost burden should be on drivers alone
- Use EJ principles in freight
Transport planning



What Can be Done?

- Oakland Army Base Redevelopment
 - Relocate trucking-related businesses
- Encourage green industry: upzoning is NOT the answer
- Who should pay?
 - Taxpayers currently footing \$1B infrastructure bond
 - Cargo owners, shippers need to pay fair share – fees on inbound & outbound containers make sense



Looking Ahead

A thriving, healthy, affordable West Oakland with clean air & “green jobs” for local residents!



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