West Oakland Risk Assessments for Diesel Particulate Matter from Goods Movement

EMISSIONS INVENTORY – for Calendar Year 2005

West Oakland Community (Part 3)

Source Type	Equipment or Facility Examples	Source Domain	Source of Activity Data
Freeways and Primary Roads	Diesel vehicles on freeways, major roadways, and at Bay Bridge toll plaza	Freeways 80, 580, 880, and 980 and other direct arterials between port or rail yards and the freeways	Truck activity (e.g., volume, speed, and link length) from Integrated Transportation Network. QA of data with Caltrans data from way in motion (WIMS) and freeway performance measurement system (PeMS). Truck trips reported from port and rail yard. Idling information from traffic analysis zones from COGs.
Off-Port Tug Activity	Tugs not assigned to Port of Oakland	Tug hotel and dockside activities that support the Bay (non-port related)	Total tug activity excluding Part 1 activity using Port of Oakland vessel counts and survey of tug operators.
Off-Port Waterside Activity	Harbor craft and ocean going vessels in SF Bay	Zone of activity data from inside Golden Gate to South Bay	Harbor craft: ARB inventory for harbor craft rule. Ships: ARB inventory from auxiliary engine fuel rule. All within domain, but excluding Part 1 activity.
Off-Rail yard Train Activity	Trains leaving rail yards and port that are within West Oakland domain. Non-Amtrak commuter trains.	Located in West Oakland	Train counts from port and rail yards; passenger or other trains counts from carriers; emission factors from ARB
Distribution Centers	Diesel trucks and TRUs	Busiest centers in West Oakland	District and its contractors to conduct on-site surveys of distribution centers to determine truck activity & idling and activity of stationary/portable engines and other off-road equipment

Amtrak Station	Diesel locomotives	Located in West Oakland	Amtrak schedules and locomotive emission factors from ARB
Post Office Dist. Center	Diesel trucks, cargo equipment	Located in West Oakland	District and its contractors to conduct on-site surveys at the Post Office facility to determine truck activity & idling.
Greyhound Bus Station	Diesel buses	Located in West Oakland	ARB, District, and contractors to obtain on-site information.
Power Plants	East Bay MUD Duke Energy	Located in West Oakland	District data on permitted facilities
Schnitzer Steel	Vessels, diesel cargo equipment and stationary engines	Schnitzer property	ARB and District to use data from permits, cargo surveys, vessel inventory
Construction Activity for Bay Bridge	Heavy diesel equipment and marine support	Bay Bridge	EIR/EIS data on equipment and operations for Bay Bridge Improvements
Stationary Diesel Sources	Top 20 emission sources of diesel PM in area from stationary diesel engines	Located in West Oakland	District data on permitted facilities

Maritime Port of Oakland Operations (Part 1)

Source Type	Equipment or Facility Examples	Source Domain	Source of Activity Data
Ocean-Going Vessels	Primarily container ships	Vessels to and from Port of Oakland only	Port of Oakland vessel counts; Marine Exchange data
Commercial Harbor Craft	Smaller vessels, such as tugs and dredge operations	Dredge activity and tugs assigned to Port of Oakland vessels	Port of Oakland vessel counts, and survey of tug operators
Cargo Handling Equipment	Yard trucks, container handlers, cranes, forklifts	All of Port's cargo equipment, including BNSF	Equipment counts and activity from each terminal and BNSF
Locomotives	Locomotives	BNSF	BNSF to provide data on number, type and activity for locomotives
Trucking	On-road heavy duty trucks	Total truck traffic excluding UP	Gate and roadway counts from Port of Oakland, BNSF, and UP

UP Rail Yard (Part 2)

Based on what we've learned so far, locomotives are the biggest contributor to rail yard risk and the key inputs for locomotive activity are: the number of trains per day, how many locomotives on each train are running, how many are switchers versus line-haul locomotives, and how much time they spend in each power (notch) setting. Trucks are typically the number two risk source at rail yards, with the number of trucks and idling time being the key activity indicators. ARB's methodology for rail yard risk assessments released for public comment in July 2006 details how all of the assessments for designated rail yards under the 2005 agreement will be performed (see **http://www.arb.ca.gov/railyard/hra/hra.htm)**

Source Type	Equipment or Facility Examples	Source Domain	Source of Activity Data
Locomotives	Line-hauls, switchers	UP Oakland Rail Yard	Number, type, hours of operation by notch setting, from UP contractor and multiple sources (see discussion below)
Heavy Diesel Trucks	Fuel trucks		Gate counts of number of trucks and idling time from UP contractor
Cargo Handling and Other Heavy Equipment	Cranes, forklifts, yard hostlers, backhoes		Number of pieces, horsepower, and operating hours, from UP contractor and ARB survey data (see ARB rulemaking report for diesel cargo equipment)
Transport Refrigeration Units/Reefer Cars			Number of units, horsepower, hours of operation, from UP contractor
Portable Diesel Equipment	Power generators, compressors		Number and type of equipment from UP contractor, district permits, portable equipment registration program data

The non-confidential data provided by the railroads and their contractors for the rail yard risk assessments will be included in the study reports. ARB staff cross checks the reasonableness of the new data against other information sources used to develop the statewide emission inventory.

MODELING

Models to be used:

Part 1: CalPUFF
Part 2: AERMOD for risk assessment under 2005 Rail Yard Agreement; plus same emissions/activity assumptions run in CalPUFF for integration with other West Oakland assessments
Part 3: CalPUFF

Receptor Domain:

100 km x 100 km (centered at about Port of Oakland)
500 x 500 meter spacing across domain
250 x 250 meter spacing within West Oakland.

Meteorological Data:

2 water side sites
13 land side sites

RISK CHARACTERIZATION

Report for UP Rail Yard will be consistent with other rail yard reports performed according to the published methodology (July 2006)

Integrate Parts 1, 2 (revised with CalPUFF) and 3

Risk characterization to be consistent with Port of Los Angeles and Port of Long Beach

OEHHA Risk Assessment Guidelines to be used