

San Francisco Bay Area Green Ports Initiative

The San Francisco Bay Area is home to several marine ports. Emissions from the ports contribute to air pollution levels above State and federal air quality standards and unacceptable levels of health risk in the surrounding communities. Diesel particulate matter (DPM) is a pollutant of particular concern, both because DPM emissions from the ports and port-related activities are regionally significant and because health risk from DPM is a serious concern for the affected local areas. Criteria pollutants of most concern are particulate matter (PM), oxides of nitrogen (NOx), which contribute to ozone and particulate matter pollution, and oxides of sulfur (SOx), which contribute to PM pollution.

It is important to note that the risk to human health posed by any activity is related not only to the quantity of emissions generated but also to how close the release point is to the receptors. In many cases, the risks are higher for activities that contribute lower overall emissions but are carried out closer to workers and nearby residents. For example, diesel truck traffic, which releases emissions at ground level and often passes close to port neighbors, may pose higher risks than berthing and maneuvering, which release emissions from relatively tall stacks at some distance from workers and residents.

Ports and Air Pollution

Emissions from marine ports and related activities come from a number of sources including ocean going vessels, tugs, service vessels, cargo handling equipment, heavy-duty diesel trucks, locomotives and refrigeration units on trailers and containers. Pollutants directly emitted from these activities adversely affect local and regional air quality. Indirectly, the maritime activities also contribute to regional background levels of particulate matter, especially through entrainment of roadside particles and secondary particulate formation from NOx and SOx emissions.

The District's current estimates of 2005 region-wide emissions associated with Bay Area marine ports and related activities (including ship emissions out to 24 nautical miles) are:

Pollutant	Emission (tons/day)	Percent of Regional Mobile Source Emissions
NOx:	123	26%
SOx:	14	79%
DPM:	6	35%

Source: CARB, *Goods Movement Emission Reduction Plan*, 2006

Action Plans

The District will propose regulations by the end of the first quarter of 2008 establishing air quality goals to reduce air pollution and health risks from marine port activities and requiring the ports to develop comprehensive action plans to meet those goals. Each plan shall ensure the port maximizes the benefits of existing and future State, federal and international regulatory standards. Further, the plans will be required to include specific commitments that capture and expand on current efforts by the ports to reduce air pollution as necessary to achieve the goals.

Goals – In order to protect air quality generally, and to address impacts on adjacent and other affected communities, the District will develop emission reduction goals for existing and new or expanded marine ports that will:

- Reduce health risks by reducing exposure to DPM and other toxic air contaminants
- Achieve “fair share” reductions of criteria pollutants relative to other facilities operating in the District
- Reduce greenhouse gas emissions

The specific goals will be developed during 2007 through a public process initiated by the District for use by the ports in developing their plans. These goals may be in the form of percentage reductions, mass emission limits, emission rates, or other limits as appropriate, and will be updated from time-to-time as necessary to incorporate new data and information, new science or new policy objectives. As a part of this process, each port, in consultation with the District, will be required to develop a comprehensive inventory of emissions from port activities and conduct a health risk assessment using existing data and resources to the maximum extent possible.

Plan Components – Each action plan shall include specific components to reduce emissions and the local and regional effects of air pollution in the Bay Area. Specifically, the plan will be required to contain the following components:

- A quantification of emission reductions and other benefits of compliance with all applicable State, federal and international standards and requirements
- Commitments to take additional actions as necessary to meet the emission reductions and health risk improvement goals established by the District. In preparing these commitments the port shall consider all available measures to reduce emissions and health risks, focusing on the most significant sources and health risks. This shall include but not be limited to the following:
 - Modification of operations to reduce emissions and to reduce localized impacts
 - Use of leases and other market participant mechanisms to accelerate use of cleaner ship engines, harborcraft and fuels used in these sources
 - Cold ironing or other clean technologies for ships at berth
 - Accelerate the pace of replacing, repowering and retrofitting diesel engines in the trucks and off-road equipment that service the ports
 - Vessel speed reduction policies
 - Replace or retrofit locomotive engines to meet the most stringent standards on accelerated schedule
 - Use of container fees and other incentives to provide resources to achieve plan commitments
- A schedule of milestones for any commitment expected to take more than one year to complete
- A mechanism for monitoring and measuring emission reductions and progress against plan
- A commitment to conduct a periodic review of the plan that includes the following:
 - Quantification of emission reductions achieved
 - An update of emissions inventories and health risk assessments
 - Modifications as necessary (1) to address deficiencies in implementation and (2) to address any changes in the goals established by the District