

Executive Summary

As an independent department of the City of Oakland, the Port of Oakland (Port), operating through its Board of Port Commissioners, manages property stretching along 19 miles of the City of Oakland's waterfront. This Port Area encompasses property from Oakland International Airport to Jack London Square, in addition to the seaport area. The Maritime Air Quality Improvement Plan (MAQIP) applies only to the seaport and its operations.

In collaboration with a task force of diverse stakeholders, the Port developed the MAQIP to guide its efforts to reduce criteria pollutants, notably diesel particulate matter, associated with maritime (seaport) activities at the Port. The MAQIP is the Port's master plan to reduce air pollution from both mobile and stationary on/near-shore and off-shore sources at the seaport. The MAQIP not only supports current and future State and local emission reduction requirements, but enhances these requirements through early implementation goals and by targeting emission reductions that exceed legally mandated requirements.

The MAQIP builds upon the Port Maritime Air Quality Policy Statement (Port Air Quality Statement), adopted by the Board of Port Commissioners in March 2008. The Port Air Quality Statement sets a goal of reducing the excess community cancer health risk related to exposure to diesel particulate matter (DPM) emissions associated with the Port's maritime operations by 85% from 2005 to 2020, through all practicable and feasible means. It also commits the Port to implement early action emissions reduction measures to reduce the duration of the public's exposure to emissions that may cause health risks, through all practicable and feasible means.

The MAQIP is not simply a paper document, but rather a living plan to guide air quality improvement initiatives through the 2020 planning horizon. The MAQIP is built upon the recognized role that cooperative efforts between the Port and regulatory, enforcement and funding agencies, tenants, business and community stakeholders will play in achieving the plan's air emissions and health risk reduction goals. Through the MAQIP, the Port and its stakeholders recognize that air quality is a dynamic area of study, with burgeoning technology and regulation, and that achievement of the MAQIP goals will require creative collaboration and a commitment to adaptive management of air quality initiatives.

The MAQIP was developed through an extensive public stakeholder participation process. The MAQIP Task Force, comprised of 35 stakeholders, was created in 2007 to develop goals and actions to guide air quality improvement efforts undertaken at the Port's seaport. The MAQIP Task Force developed seven guiding principles for its work, which shaped the MAQIP goals and implementation measures:

- Seek economic growth
- Promote environmental stewardship
- Apply the concept of fair share

- Exercise the Port's authority
- Engage stakeholders
- Promote environmental justice
- Build knowledge

The MAQIP will guide the Port's interim and long-term air quality strategy to achieve the 2020 goal of reducing cancer health risk associated with the Port's maritime operations by 85% from 2005 levels. In support of that goal, the focus of the MAQIP is the reduction of DPM because of the recognized link between diesel particulate matter and human health risk. Other criteria pollutants, including oxides of nitrogen (NOx) and sulfur oxides (SOx), are also of concern, and the MAQIP contains emission reduction goals for such pollutants as well. The MAQIP will likely be revised in the future to address greenhouse gases after such emissions have been calculated in an emissions inventory. The MAQIP relies on the 2005 seaport air emissions inventory (completed in 2007, and revised in 2008) and 2008 human health risk assessment studies prepared by the Port and the California Air Resources Board (CARB), respectively, to establish baseline emissions and to set emission reduction goals.

The MAQIP sets aggressive but realistic interim (2012) and long-term (2020) goals for both on/near-shore and off-shore emission reductions as follows:

Table ES-1 Port of Oakland Emissions Reduction Goals and Forecasted Reductions				
Pollutant by Port Source	Percentage Change from 2005^a			
	2012 Forecast/Goals	2020 Goals	2020 Forecast	Additional Reductions Needed to Meet 2020 Goals
PM Emissions				
On- and Near-Shore	-65%	-85%	-81%	4%
Off-Shore	+2%	-85%	-67%	18%
SOx Emissions				
On- and Near-Shore	-85%	-85%	-96%	Exceeds Goal
Off-Shore	-3%	-94%	-92%	2%
NOx Emissions				
On- and Near-Shore	+1%	-34%	-31%	3%
Off-Shore	+12%	TBD	+46%	TBD

^a 2012 goals are based on full regulatory compliance. 2020 goals are based on full regulatory compliance and adoption of additional feasible initiatives. 2020 forecasts assume full regulatory compliance. See note for Table 6-1. The Board of Port Commissioners' Air Quality Policy Statement goal is derived from these DPM goals.

To achieve its air quality improvement goals, the MAQIP commits the Port to implement a three-pronged emissions reduction strategy to:

- Target emissions reductions earlier than required by regulations
- Support enforcement of regulations
- Target emissions reductions above and beyond those required by regulations

In order to develop specific initiatives to meet the emissions reduction goals and strategies, the MAQIP describes a number of source and operational control measures. These initiatives closely parallel the planning and regulatory efforts of CARB, and to that end, the MAQIP recognizes that compliance with emissions reduction regulations is critical to achieving air quality improvement goals. As such, the Port will coordinate and support regulatory compliance and enforcement efforts of CARB and the Bay Area Air Quality Management District (BAAQMD).

The MAQIP identifies seven primary emissions control measures:

- Early action retrofit and/or replacement of port drayage trucks
- Compliance with CARB's shore power regulation
- Design and operational efficiencies
- Participation in pilot and verification projects for NO_x and DPM reduction strategies
- Early action construction emissions reductions
- Support of enforcement of regulations by CARB and BAAQMD through coordination with Port tenants
- Accountability, monitoring and reporting

In the spirit of adaptive management and in light of on-going economic and regulatory changes, and emerging technologies, the Port and maritime stakeholders will continue to consider a variety of emissions reductions initiatives and programs. To date, the Port's selected or completed initiatives include the Comprehensive Truck Management Program, programs related to retrofit or replacement of drayage trucks, LNG equipment and infrastructure development, tugboat engine replacement, container terminal equipment retrofit and repowering, improvements to the Port's vehicle fleet, marine terminal facility improvements, and shore power, among others. Recommended individual emissions reductions initiatives and programs identified in the MAQIP and developed through the MAQIP process will be brought to the Board of Port Commissioners as required for consideration and approval.

Implementation of the MAQIP to achieve the air quality improvement goals is expected to require considerable resources in terms of funding and personnel. Sources of funding for such projects are identified in the MAQIP, including grants from the Proposition 1B funds that are expected to be available to Port tenants, pending resolution of the State budget challenges. In addition to the Port's existing sources for environmental funding (operational revenue and bond-funded capital projects), the Port will consider supplemental funding sources.

The MAQIP requires the Port to periodically monitor the effectiveness of the initiatives to reduce air emissions from seaport sources. The MAQIP commits the Port to prepare periodic reports to the Board of Port Commissioners and stakeholders to report on progress towards meeting the interim and long-term emission reduction goals.

Even with the achievement of sizeable emission reductions by the Port, CARB's 2008 West Oakland human health risk assessment suggests that Port-related reductions alone will not be sufficient to fully reduce health risk from diesel particulate matter to the West Oakland community. Pollution from non-Port diesel engines, including heavy-duty diesel trucks and buses that do not serve the Port and are outside the Port's jurisdiction, has been identified as the most significant source of DPM to West Oakland.

As a living plan, it is foreseen that the MAQIP will be updated and amended over time to respond to a number of factors, including the results of strategies and changes to the regulatory, economic and technological environment of maritime operations at the Port. Material changes to the master plan will be discussed with stakeholders and presented in the form of MAQIP Supplements for the consideration and approval of the Board of Port Commissioners.