MAQIP

Maritime Air Quality Improvement Plan

FINAL

Approved by Board of Port Commissioners

April 2009

PORT OF OAKLAND

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Foreword

This Maritime Air Quality Improvement Plan (MAQIP) provides a master plan for the Port of Oakland's (Port's) long-term commitment to reducing the air quality and health risk impacts of its maritime operations.

This document embodies the primary obligation of the Port under the Oakland City Charter and as trustee of state tidelands: to ensure the proper management and administration of the Port Area for the purpose of navigation and commerce. As such, the strategies and goals outlined in the MAQIP reflect a careful balance between the need for sustained economic viability in a competitive business environment and the need for environmental responsibility and justice. The document also describes the past, current and future efforts of the Port to initiate, finance, and monitor its fair share of emissions reductions in our communities.

The MAQIP also reflects the need for cooperative efforts among the Port, regulatory, enforcement and funding agencies, tenants, business stakeholders, and the community. As one of many parties in a chain of international and interstate commerce and goods movement that operates across international and federal jurisdictions, the Port alone cannot realize all of the goals expressed in the MAQIP. Only in the spirit of true partnership will these goals be realized.

Acronyms and Abbreviations

BAAQMD	Bay Area Air Quality Management District
BMP	Best Management Practice
BNSF	Burlington Northern Santa Fe Railroad
CARB	California Air Resources Board
CEQ	California Environmental Quality Act
CHE	Cargo Handling Equipment
CIP	Capital Improvement Program
CNG	Compressed Natural Gas
CO	Carbon Monoxide
DOC	Diesel Oxidation Catalyst
DPF	Diesel Particulate Filter
DPM	Diesel Particulate Matter
EIR	Environmental Impact Report
EIS	Environmental Impact Statement
EPA	United States Environmental Protection Agency
Genset	Generator Set
GHG	Greenhouse Gas
GMAP	Goods Movement Action Plan (CARB)
GMERP	Emission Reduction Plan for Ports and Goods Movement in California (CARB)
HC	Hydrocarbon
IMO	International Maritime Organization
LNG	Liquefied Natural Gas
LPG	Liquefied Petroleum Gas
MAQIP	Maritime Air Quality Improvement Plan
MARPOL	International Convention for the Prevention of Pollution from Ships
µg	Microgram
NEPA	National Environmental Policy Act
NM	Nautical Mile
NO	Nitric Oxide
NOx	Oxides of Nitrogen (consists of NO and NO_2)
NO_2	Nitrogen Dioxide
OGV	Ocean-going Vessel
PM	Particulate Matter
PM_{10}	Particulate matter less than 10 micrometers in aerodynamic diameter
$PM_{2.5}$	Particulate matter less than 2.5 micrometers in aerodynamic diameter
Port	Port of Oakland
PPB	Parts per billion
PPM	Parts per million
ROG	Reactive Organic Gas (see also VOC)
SO_2	Sulfur Dioxide
SOx	Sulfur Oxide
TEU	Twenty-Foot Equivalent Unit
TOG	Total Organic Gases
UP	Union Pacific Railroad
VOC	Volatile Organic Compound
ULSD	Ultra-Low Sulfur Diesel
WOEIP	West Oakland Environmental Indicators Project
WOTRC	West Oakland Toxics Reduction Collaborative

Acknowledgments

The Port of Oakland (Port) gratefully acknowledges all of the people who contributed to the Maritime Air Quality Improvement Plan (MAQIP) presented in this report, especially the Task Force co-chairs and each member of the MAQIP Task Force. Throughout the planning process, Task Force members demonstrated their commitment to improving air quality and reducing health risk in West Oakland, while crafting a usable plan for the Port.

Facilitators from CONCUR, Inc., including Scott McCreary, Rebecca Bryson, Becky Tuden, Jon Mires, and Amy Le Blanc provided valuable assistance during the extensive MAQIP public participation process, with support from Anna Rossinoff, Erin Murphy, and Nikki Hodgson and from Laurel Marcus and Associates.

Staff from ENVIRON International Corporation, especially Till Stoeckenius, Chris Lindhjem, David Souten, and Chelsea Chandler, along with William Sylte of Sierra Nevada Air Quality Group, LLC, undertook all of the technical emissions calculations, advised the Port and Task Force on technical air quality issues, and prepared portions of the initial draft of this report. Chris Lindhjem, assisted by Amnon Bar-Ilan and John Grant of ENVIRON, along with Mr. Sylte, also prepared the "Port of Oakland 2005 Seaport Air Emissions Inventory" and contributed comments and technical expertise to the California Air Resources Board's "Diesel Particulate Matter Health Risk Assessment for the West Oakland Community." Both of those studies are important underpinnings of the MAQIP. Arlene Finger and Greg Nelson of Finger Design prepared the document graphics and the final document design.

Staff from throughout the Port participated in MAQIP Task Force meetings and document preparation. A special thanks is due to Delphine Prévost for managing the MAQIP Task Force meetings throughout 2007 and for drafting much of the original material for those meetings that was used in this plan. Omar Benjamin, Joe Wong, Richard Sinkoff, Diann Castleberry, and former employees Danny Wan, Roberta Reinstein and Bernida Reagan provided strategic direction within the Port. Laura Arreola advised and coordinated on public participation and meetings, with assistance from Sylvia Dudley, Misi Pulu, and Angela Brisco. Renata Gray designed the cover and worked with Vaughn Filmore on other graphics and design services. John Perry managed the reprographics services.

This report was prepared by Anne Whittington, project manager and principal author, Marucia Britto and Celia McCarthy at the Port, with the assistance of Task Force members who submitted constructive recommendations and guidance. We especially acknowledge Port Commissioner Margaret Gordon for her leadership and guidance.

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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 NOx 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

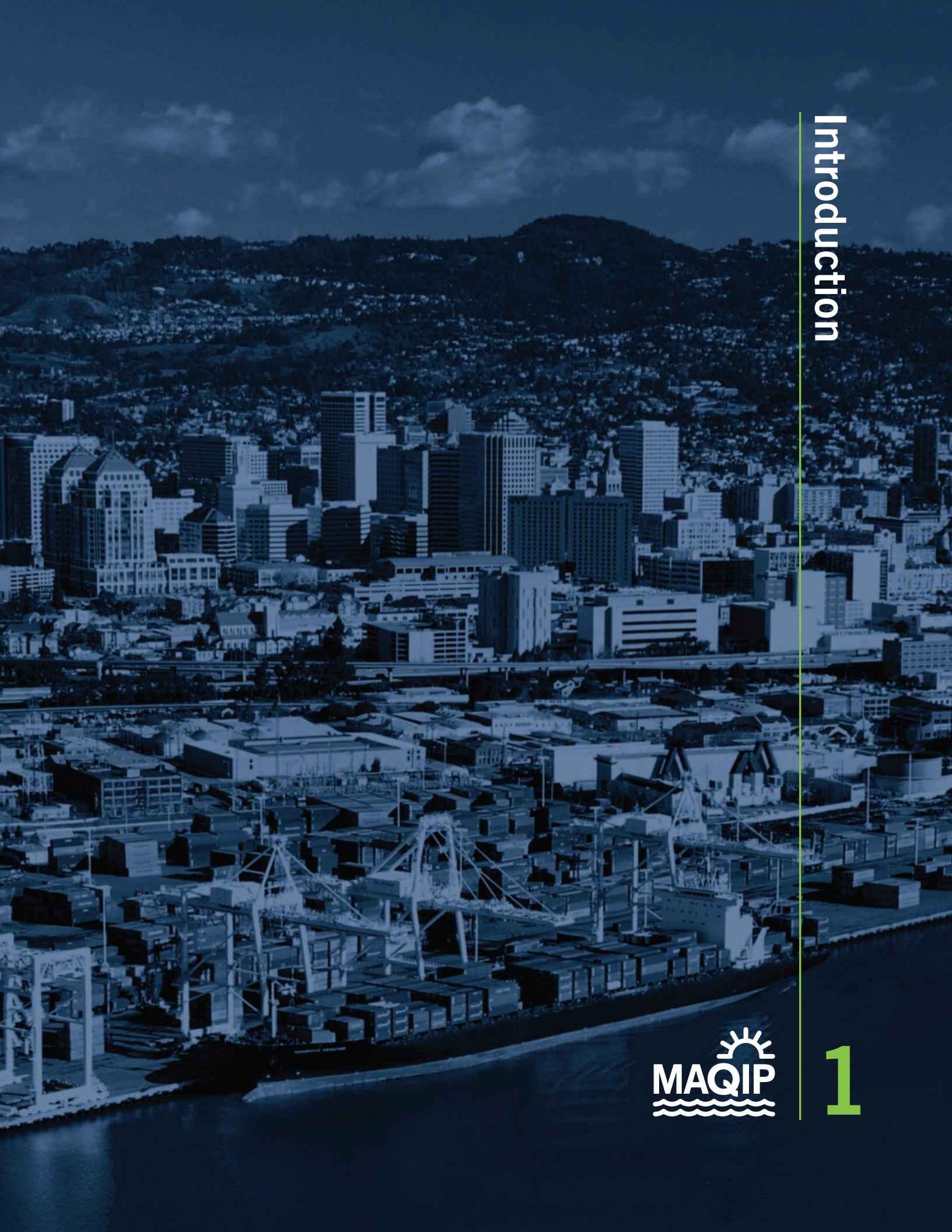
In the spirit of adaptive management and in light of on-going economic and regulatory changes, and emerging technologies, the Port and maritime stakeholders will continue to consider a variety of emissions reductions initiatives and programs. To date, the Port's selected or completed initiatives include 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.



Introduction

MAQIP

1

Section 1: Introduction

The Maritime Air Quality Improvement Plan (MAQIP) was born out of community engagement on behalf of better air quality in West Oakland. As landlord of the largest industry in West Oakland, and the largest seaport in the Bay Area, the Port of Oakland (Port) recognizes that emissions from maritime seaport-related operations must be controlled to reduce health risks to nearby residents and improve air quality.

Discussions with community groups, regulatory agencies and other interested parties in 2006 led to the formal initiation of the Port's air quality plan and the establishment of the MAQIP Task Force. For much of 2007 and through early 2008, this 35-member group met to create this air quality master plan that sets goals and will guide air quality efforts in the seaport (the Port's maritime area) for years to come, with the goal of reducing health risk from Port operations through emissions reductions. Not everyone agreed with all of the decisions surrounding the plan development or with all of the elements in this master plan. However, every Task Force member contributed to the planning process and to shaping this plan.

The draft MAQIP document was discussed at a MAQIP Task Force meeting on June 19, 2008, and members were asked to provide written comments to be used in revising the plan prior to its approval by the Port of Oakland's Board of Port Commissioners. Some common themes that emerged from the comments are summarized in Section 1.4. Revisions and edits based on the comments are incorporated throughout this final plan.

1.1 Purpose of the Maritime Air Quality Master Plan

The MAQIP is the master plan of air quality goals and policies that covers all seaport-related development and operations at the Port. From the Port's perspective, all development projects must be scoped with an eye toward meeting the MAQIP air quality goals. All grant funding opportunities should be reviewed as opportunities to meet the MAQIP goals. All seaport operations should consider opportunities for air quality improvement.

The essential elements of a master plan are included in this document, which:

- Describes the current environment
- Reviews the goals and values that should guide Port operations and development
- Presents a vision of the future
- Outlines how that future will be achieved

While the MAQIP is a master plan guiding the Port's long-term air quality strategy through 2020, it also includes more detailed components, such as the initiatives, programs and projects, that provide a roadmap for the Port to follow in achieving its 2020 health risk goal. In support of that goal, the focus of the plan is to reduce diesel

particulate matter (DPM) because of its link to health risk. Other criteria pollutants, including NOx, SOx, ROG, and CO, are also of concern, but the emphasis is on DPM. Greenhouse gases (GHG) are not addressed in this version of the plan but will be added in future updates, after GHG emissions have been calculated in an emissions inventory.[1]

Based on the MAQIP goals, the Port is committed to a three-fold emissions reduction strategy:

- Target emissions reductions earlier than required by regulations ("early actions")
- Support enforcement of regulations
- Target emissions reductions above and beyond those required by regulations.

The Port envisions the MAQIP as a living document that may be updated and amended over time through supplements in response to the results of implementation strategies and to reflect changes in the regulatory, economic and technological context of seaport operations.

The Port turned to its community, tenant, environmental, business, and regulatory stakeholders for guidance in preparing the plan, which:

- Documents the development of the MAQIP through the MAQIP Task Force (Section 2)
- Describes the Port's operations, emissions, and past air quality improvement efforts, along with the current and future air quality regulatory settings (Sections 3, 4, 5, and 6)
- Sets an overall West Oakland community cancer health risk reduction goal related to exposure to DPM emissions from Port operations, including interim emissions reduction goals (Section 7)
- Outlines specific air pollutant reduction goals (Section 7) and both general and specific strategies to meet those goals (Section 8)
- Provides a set of screening criteria for prioritizing additional air emission reduction measures that the Port could implement (Section 9)
- Lists air quality improvement initiatives, along with programs and projects that may help the Port, its maritime tenants and related businesses in reaching the MAQIP early actions and 2020 goals (Section 9)
- Discusses implementation and monitoring of emissions reduction programs and projects (Sections 10 and 11)
- Establishes the next steps for plan implementation and oversight (Section 11).

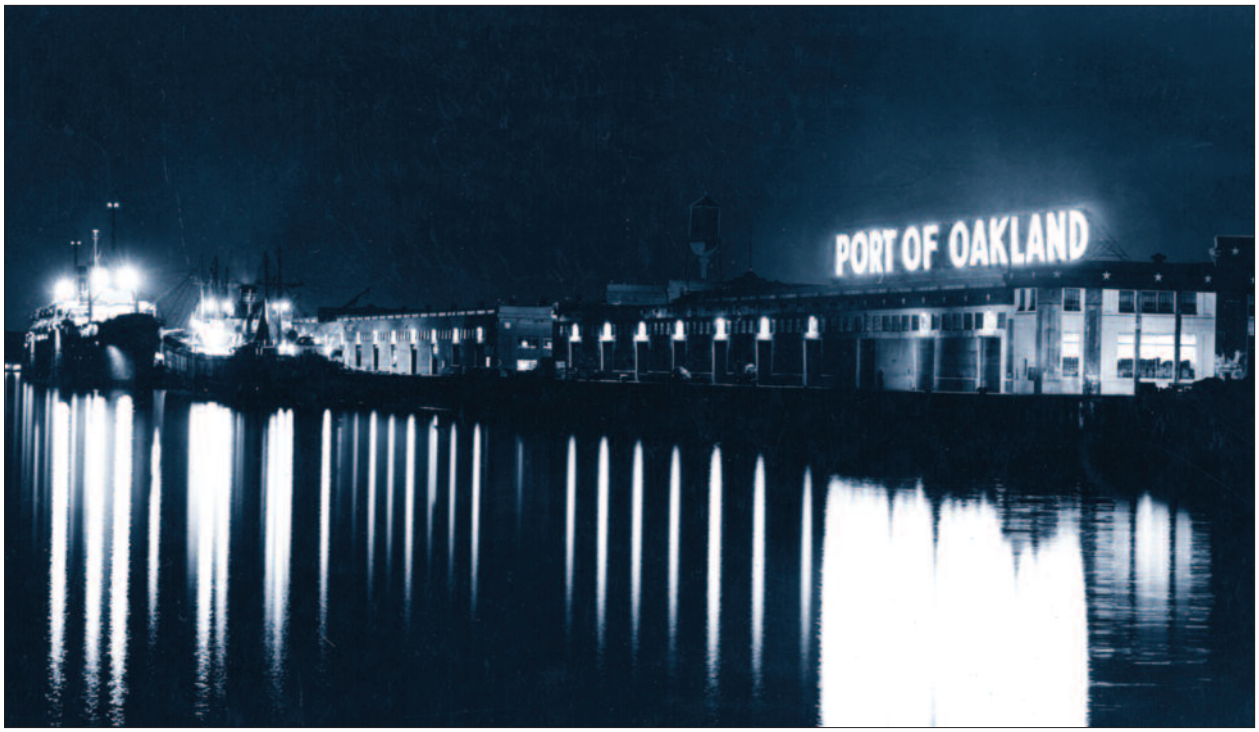
[1] Recommendation to add GHG in comments by Diane Bailey, et al., Natural Resources Defense Council (NRDC), July 14, 2008.

1.2 Maritime Air Quality Policy Statement

As a first solid step to using the MAQIP to guide the Port's activities, the Board of Port Commissioners (Board) approved the Port's Maritime Air Quality Policy Statement on March 18, 2008. The air quality policy sets a goal of an 85% reduction from 2005[2] to 2020 in neighboring-community cancer health risks related to exposure to diesel particulate matter emissions from the Port's maritime operations through all practicable and feasible means. Furthermore, the Board stated that the Port would implement emissions reduction measures in advance of regulatory deadlines in order to reduce the duration of people's exposure to emissions that may cause health risks ("early actions"). Specific early actions include:

- Incentives for replacement or retrofit of older polluting drayage trucks
- Mechanisms for enforcing the prohibition of Port truck parking or operation on neighborhood streets, including truck registration and tracking
- Feasible and cost-effective means of reducing ship idling emissions

In addition to committing the Port to the health risk reduction goal, the Board also committed to adopting funding mechanisms to pay for the Early Action emissions reduction measures.



Outer Harbor, circa 1960.

[2] The baseline data that will be used to measure the Port's progress toward its health risk reduction goal are the "Port of Oakland 2005 Seaport Air Emissions Inventory" (2007, revised 2008) and CARB, 2008b, "Diesel Particulate Matter Health Risk Assessment for the West Oakland Community: Preliminary Summary of Results" (March 2008 and subsequent revisions).

Port of Oakland Maritime Air Quality Policy Statement

The Board of Port Commissioners affirms that it has the social responsibility to minimize exposure of neighboring residents to air pollution from Port sources and to support [the] rights of community, local businesses, and workers to clean air and fair working conditions. Therefore, the Board is committed to improving air quality, safety, and quality of life for neighboring residents and workers by reducing environmental impacts of Port operations, while fulfilling the Port's basic obligations to maximize commerce and to provide economic and job opportunities. To these ends, the Board hereby adopts the following policy principles that shall guide the Port's plans and actions, including the adoption of the Port's Maritime Air Quality Improvement Plan (MAQIP), Comprehensive Truck Management Plan (CTMP), and Early Actions (as defined below).

1. The Port adopts the goal of reducing the health risks to our neighboring communities (expressed as increase in cancer risk) related to exposure of people to diesel particulate matter emissions from Port sources by 85 percent by the year 2020 through all practicable and feasible means. Reduction will be calculated based on the Port's 2005 Seaport Emissions Inventory baseline.

2. The Board commits to adopting funding mechanisms, including the imposition of fees, to fund air emissions reduction measures. To the maximum extent possible, Port fee revenues shall leverage matching federal, state, and private funds. Fees for the purpose of funding the measures shall be evaluated for legality and be enacted to the extent that they do not damage the Port's or its customers' market competitiveness.

3. The Port will implement certain air emissions reduction measures prior to the dates that such measures are required by state or federal regulations, in order to reduce the duration of people's exposure to emissions that may cause health risks ("Early Actions"). The Port shall implement, beginning in 2008, Early Action measures for the purpose of immediately reducing the impacts of Port-serving trucks and other Port operations on West Oakland and surrounding communities. These measures shall include:

    a. Incentives for Early Action replacement and/or retrofit of older polluting truck engines,

    b. Mechanisms for enforcing the prohibition of Port truck parking or operation on neighborhood streets, including truck registration and tracking

    c. Feasible and cost-effective means of reducing ship idling emissions.

In order to fund these Early Action measures, the Board will adopt truck or containers fees and apply for matching state and federal funds.

Adopted on March 18, 2008 by the Board of Port Commissioners of the Port of Oakland by Resolution No. 08057

1.3 Plan Methodology

The Port normally approaches planning through a continuum, starting with a conceptual strategic or master plan that provides a framework for how to achieve the goals delineated in the plan. The next step is to develop comprehensive programs that manage how the goals will be reached. Finally, the specific projects that contribute to the goal are implemented. As illustrated in **Figure 1-1**, the MAQIP is at the master plan level, and provides policy direction for the Port's current and future maritime air quality activities.

In addition to following a rational planning methodology, the Port must carefully document both the opportunities and challenges presented by a plan. This analysis is intended to support the plan by articulating both the reasons for undertaking the planning effort (opportunities) and the potential barriers that the plan could face (challenges).

1.3.1 Planning Continuum

As the Port pursues solutions to environmental and other planning concerns and issues, it follows a methodology of interrelated steps. This methodology—the "Planning Continuum"—aims to achieve the planning goals.

The Planning Continuum organizes specific planning activities into discrete phases: the master plan phase, the program development phase, and the project implementation phase. Each phase focuses on its own goals and objectives. Careful adherence to the character of each planning phase promotes completion of tasks, efficiency of resource use, and progress towards the next stage of the planning process. Stakeholder involvement is a key component of the Port Planning Continuum, but the nature and focus of stakeholder involvement and facilitation change with each planning phase.

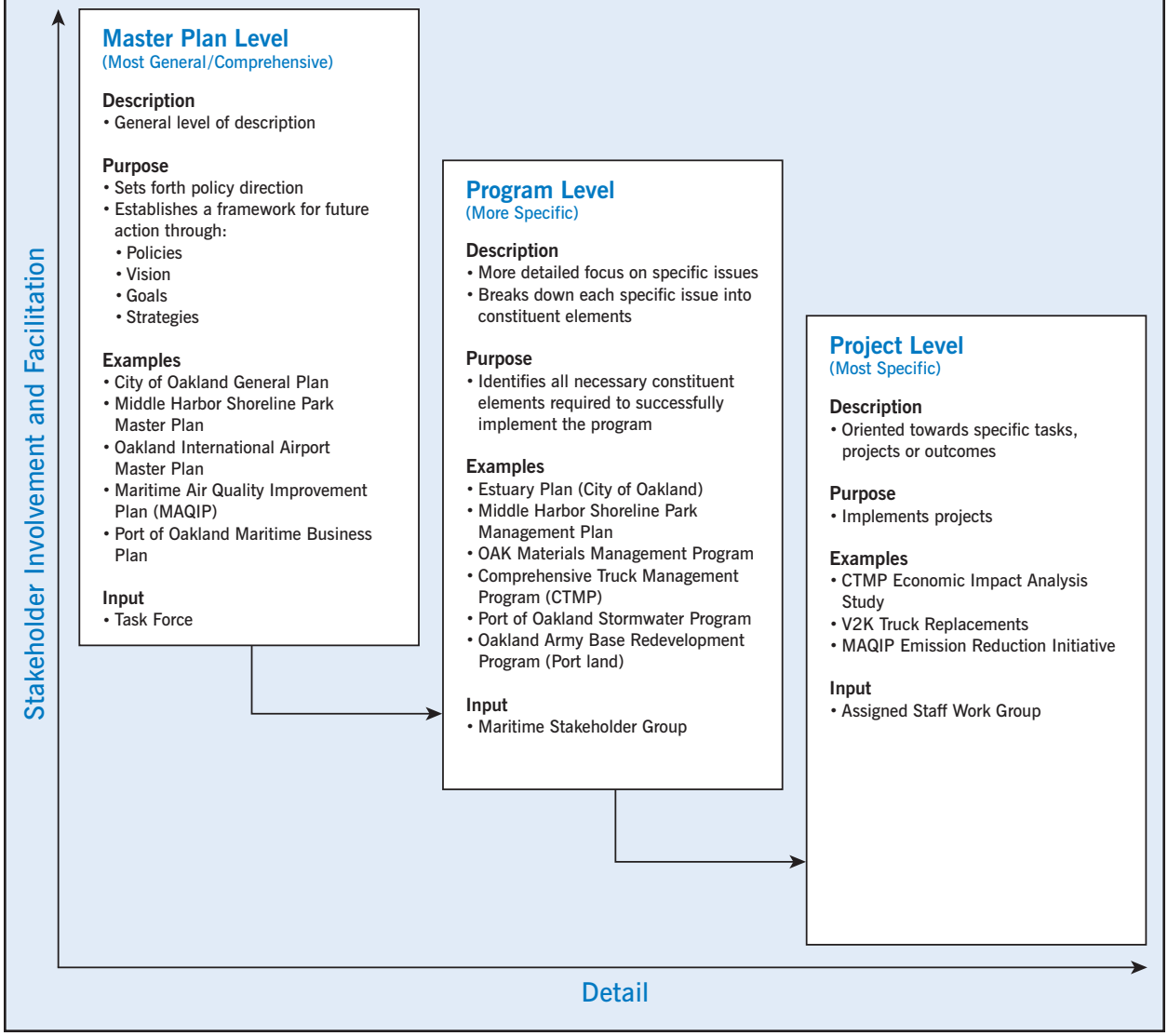
- Stakeholder involvement and facilitation is at its highest in the Master Plan phase, since preparation of a comprehensive master plan typically includes soliciting a wide spectrum of viewpoints on a particular issue and developing a set of common goals and principles for the plan. The involvement of trained facilitators during this phase may be very high because stakeholders often hold widely divergent perspectives, and because reconciling those perspectives is frequently painstaking.

- Upon completion of the Master Plan phase, the focus of stakeholder input turns to program design and development. During the program development phase, facilitators may be used to orient stakeholder dialogue toward identifying specific program components and elements.

- Finally, the specific projects that achieve the planning goal are identified and implemented. At the project phase of the Planning Continuum, stakeholder involvement focuses on promoting implementation of projects and on monitoring and reporting activities. Facilitation, if required, is oriented towards constructive feedback and adaptive management activities.

The MAQIP Task Force was convened at the highest Master Plan level to ensure that the voices of all interested stakeholders would be heard throughout preparation of the maritime air quality master plan. An experienced facilitator, CONCUR, Inc., led the Task Force and Port staff through a consultative planning process. Once the Port's Board approves the MAQIP, stakeholder involvement will move to the next phase, with oversight from a maritime stakeholder group to ensure that the design of specific programs is consistent with the planning guidance of the MAQIP. Facilitators may assist with periodic review and updates of the plan's initiatives. Finally, stakeholders will continue their involvement during the project phase through the MAQIP's monitoring and reporting provisions.

Figure 1-1 Planning Continuum – Hierarchy of Planning Activities



1.3.2 Opportunities and Challenges

The benefits to the Port of developing a long-range maritime air quality plan are clear. Setting air quality goals ensures that the air will be cleaner. Developing a strategy and framework to help maritime-related businesses meet or exceed regulatory standards supports their compliance with the regulations. Equally important, community and stakeholder participation in establishing the goals, the plan and its implementation promotes accountability by the Port to accomplish the plan's elements. The challenges of the MAQIP are also clear; regulations adopted by air quality agencies must be feasible and enforceable.

Unambiguous goals provide direction for the organization and for its tenants and customers. With support and policy direction from the Board of Port Commissioners for the MAQIP and its goals, Port staff will place a higher priority on working towards cleaner air in the seaport area. The West Oakland community, including Port staff, will benefit from a lower cancer health risk from maritime-related diesel emissions.

Berths 67-68 (Howard Terminal), 2005.

Reaching those goals, however, is only possible with strong statewide—and preferably national and international—regulations. This plan counts on the benefits of regulations to reduce emissions to levels close to the MAQIP goals. Therefore, the Port must rely on its agency partners with rule-making authority, especially the California Air Resources Board (CARB), the San Francisco Bay Area Air Quality Management District (BAAQMD) and the U.S. Environmental Protection Agency (EPA), to establish regulations that apply uniformly to the maritime industry. The reality of the economic climate is that cargo customers look for the lowest-cost transportation services, and the shipping lines and terminal operators look for the most cost-effective way to provide those services. The more uniformly a regulation is applied throughout a wide geographic region, the less likely air quality improvements will be seen as a competitive concern and financial burden.

Compliance by the maritime industry with adopted and planned regulations has the potential to yield large emissions and risk reductions at the Port's seaport as well as elsewhere in the state. However, full and timely compliance may be difficult since existing and proposed regulations are complex, may be costly to implement, and affect maritime sources and activities well into the future.

This maritime air quality master plan establishes a framework for the programs and projects that will assist the Port's tenants and business partners in meeting the regulatory requirements, with an emphasis on early actions (i.e., meeting standards earlier than required by regulations), on full compliance with the adopted regulations, and on exceeding the requirements to achieve even cleaner air. The monitoring and reporting commitments in this plan allow the Port and its stakeholders to ascertain that programs and projects are undertaken according to guidelines and are achieving the expected emissions reductions.

The Port must rely on the regulatory agencies to ensure that their regulations are feasible: that exhaust retrofits are available and will work without damaging equipment, that the fuel needed to satisfy regulatory requirements is plentiful, that companies providing necessary services will be able to afford new equipment on a reasonable schedule, and that the regulations themselves can stand up to legal scrutiny.

Finally, the Port must rely on the agencies to determine that their regulations are having the anticipated effect. As a landlord port, the Port's jurisdiction is limited to the provision of property and, in some cases, facilities to its tenants. Since seaport activities are not directly controlled by the Port, the full cooperation of the Port's tenants and maritime business partners will be needed to reduce emissions from activities on the San Francisco Bay, in the Port area, and on nearby freeways and thus reduce health risks to West Oakland residents and workers. The Port will ensure that its tariff and leases continue to require compliance with all applicable laws and regulations.

The Port will continue its partnership with tenants, other maritime businesses and regulatory agencies to share information, funding sources, and strategies to support the full regulatory compliance and additional measures that will be needed to achieve the goals of this plan: dramatic reductions in emissions and health risk in the West Oakland community.

1.4 Summary of Comments on the Draft MAQIP

Port staff asked MAQIP Task Force members to submit written comments on the Draft MAQIP for the purpose of obtaining constructive editorial guidance and recommendations for the final document. The Port received fifteen comment letters by August 8, 2008. Common themes emerged from many of the comments, and they merit identification and discussion in this section. Text revisions and edits based on these and other comments are incorporated throughout the plan, sometimes in clarifying footnotes. The comment letters are available on the Port's MAQIP[3] website and in Appendix J.

[3] The Port's MAQIP website is http://www.portofoakland.com/environm/prog_04c_info.asp

The major areas in which commentors thought the plan should be improved were:

- Overemphasis on challenges and constraints
- Clear commitments and implementation schedules for all of the control measures necessary to meet the 2020 goals
- Reliance on compliance with state regulations to meet its goals
- Enforcement
- Nature of the MAQIP planning process
- Master plan vs. detailed plan
- Public and agency participation
- Backup plan for MAQIP
- Recommendations for additional studies

1.4.1 Overemphasis on Challenges and Constraints

Many Task Force members noted that the constraints to a successful implementation of the MAQIP were mentioned repeatedly throughout the draft plan, to the point of sounding excessively discouraging. The intention of the caveats was to incorporate the realistic concerns of the Port and of some MAQIP Task Force stakeholders about the difficulties surrounding implementation of the measures required to reach the MAQIP goals.

The MAQIP has been revised to eliminate repetitive caveats regarding implementation of the plan. It is more appropriate to consolidate feasibility issues in subject-specific sections. Therefore, discussions of uncertainties and challenges are presented by the following subject areas in the noted sections:

- Overall challenges (Section 1.3.2, “Opportunities and Challenges”)
- Limitations of forecasting emissions (Section 6.2, “Future Emissions”)
- Air quality goals (Section 7.3, “Challenges”)
- Institutional limitations (Section 10.3, “Port Organizational Capacity and Constraints”)

1.4.2 Clear Commitments and Implementation Schedules for Control Measures Necessary to Meet the 2020 Goals

Many Task Force members also requested that the plan be revised to provide a clear commitment, time line, and implementation schedule for each of the control measures necessary to meet the air quality emissions and health risk reduction goals. More information was particularly requested on the specific DPM control measures that would meet the gap in 2020 between the 73% health risk reductions expected from compliance with regulations and the MAQIP goal of 85% DPM health risk reduction.

That is a valid request, and the subject of considerable effort by the Port. Staff has included currently foreseeable projects in the MAQIP. However, any other fully-scoped projects to bridge the gap to the 2020 goal would be speculative due to the rapidly changing regulatory and technological environment. A practical consideration is that CARB's adopted and proposed regulations to control port-related emissions represent an aggressive effort to implement the best available control technology for all targeted sources. There are few feasible and measureable approaches that are not already incorporated into CARB rule-making. Over the next decade, when new technologies are introduced and verified, the Port will be in a better position to develop programs and projects to further reduce emissions. Even CARB faced this issue, as noted in its "Emissions Reduction Plan for Ports and Goods Movement in California" (2006):

> *Reductions achieved through 2005, from controls that have already been enacted, are included in the starting emissions. Reductions shown for 2010 and later strategies are dependent on the future actions and further development of control technologies....The new reductions—2020 strategies are conceptual at this point. We believe that global concern about emissions from ships and health impacts near ports will compel the development of the new technologies that will allow ships to eventually be nearly as clean as land-based transportation sources.*[4]

Further development of new technologies, especially for off-shore ship emissions, cannot be quantified, but can be expected. Similarly, operational efficiencies, terminal redesign and vessel replacements, which can provide substantial reductions in emissions over time, are not easily predictable because they are operating business decisions, which are outside the Port's purview.

Therefore, the 2020 MAQIP goals with specific targets for DPM, SOx, and NOx emissions reductions do not yet have a complete list of implementable projects with measureable emissions reductions that add up to the target reductions. The Port is committed through the MAQIP to coordinating with its stakeholders on the selection of measures that the Port will pursue. Those measures will be drawn primarily from the MAQIP initiatives, as revised over time by the stakeholders upon further analysis.

The Port's overall emissions reduction strategy is:

- Target emissions reductions earlier than required by regulations ("early actions")
- Support enforcement of regulations
- Target emissions reductions above and beyond those required by law.

The Port's focus, with support from CARB and the BAAQMD and in consultation with stakeholders, is on early action measures to reduce harmful emissions as expeditiously as possible, in compliance with the broad MAQIP health risk and air quality goals. Therefore, projects and programs that are underway or in a planning stage and that will achieve reductions in advance of regulatory deadlines are briefly scoped and presented in **Table 9-4** (description and project schedule), **Table 9-6** (PM and NOx reductions) and **Table 10-2** (timeline and early actions).

[4] CARB's "Emissions Reduction Plan for Ports and Goods Movement in California" (2006b), page 54. The plan and staff updates are available at: http://www.arb.ca.gov/planning/gmerp/gmerp.htm

In the longer term, the best opportunities for the Port, tenants and maritime-related businesses to reduce emissions beyond regulatory requirements may center on:

- Promotion of operational efficiencies within terminal and rail yards
- Design of new facilities that incorporate measures to minimize emissions

While such measures can substantially reduce emissions by minimizing fuel usage through better layouts, reduced idling, etc. within a container yard, the emissions reductions are difficult to quantify.

1.4.3 Plan Relies on Implementation and Compliance with State Regulations to Meet Its Goals

The MAQIP does rely on implementation of state regulations and on compliance with those regulations to reach the Port's air quality improvement and health risk reduction goals. Reliance on state regulations is not unreasonable, given CARB's mission "To promote and protect public health, welfare and ecological resources through the effective and efficient reduction of air pollutants while recognizing and considering the effects on the economy of the state." Over the last several years, CARB embarked on an aggressive effort to regulate all targeted port-related sources throughout the state, using the best available control technologies. CARB staff is highly knowledgeable about the scientific, technical, and legal aspects of their emissions reductions regulations, and the agency is staffed and organized to design measures, obtain widespread public comment, address concerns about proposed regulations through revisions, adopt and implement measures, and finally, monitor and enforce compliance using their own staff or in partnership with local air districts and ports (see Section 1.4.4).

As discussed in Section 1.4.2, the Port's goals both rely on regulations and require reductions above and beyond those achieved through regulatory compliance. The Port will coordinate selection of such measures in consultation with a maritime stakeholder group and will draw initially on the MAQIP initiatives, as revised by the stakeholders upon further analysis.

1.4.4 Enforcement

Compliance with port-related emissions reduction regulations is key to achieving the Port's air quality goals. In response to several comments about the need to more directly address how the Port will contribute to the enforcement of regulations, the MAQIP now includes three new sections (Section 8.3 "Regulatory Compliance and Enforcement," Section 8.4 "Port of Oakland Control Measures and Strategies," and Section 10.1 "Overview of Port's Legal Authority") as well as an expanded discussion of the Port's authority with respect to maritime tenants and customers (Section 10.2 "Port Implementation Approaches").

The Port recognizes that designated enforcement staff from CARB and the BAAQMD may need support from Port staff, so the Port is prepared to:

- Coordinate with the agencies as they develop enforcement protocols for adopted regulations
- Provide or participate in forums to educate maritime tenants on the regulations
- Remind tenants of regulatory compliance and reporting deadlines

- Coordinate with agency partners in designing and implementing incentive programs for tenants and maritime-related businesses to promote early actions to meet regulatory goals in advance of deadlines

1.4.5 Nature of the MAQIP Planning Process

The general approach adopted by the Port staff and Co-Chairs with the assistance of the neutral facilitator, CONCUR, Inc., was to structure the MAQIP process as a robust consultative planning process, rather than an agreement-focused process. This approach was adopted largely based on the recognition that the primary authors of the Plan are Port staff. At the same time, with the advice of the facilitator and the support of Port staff, many sections of the Plan—particularly the guiding principles and the list of action strategies—were drafted with very extensive involvement of Task Force members.

One comment letter asked that participation in the Task Force meetings as a member or Co-Chair should be correctly interpreted, and not overstated as "agreement" with the text of the MAQIP.

To reflect the true nature of the consultative approach to planning, the MAQIP text uses the term "in consultation with," or similar language, instead of "agreement" to accurately describe the process used. Furthermore, all of the comment letters received from Task Force members, including those expressing disagreements with portions of the June 2008 draft MAQIP, are posted on the Port website,[5] along with all letters and handouts distributed at any MAQIP Task Force meeting.

MAQIP Task Force meeting, 2007.

[5] The Port's MAQIP website is http://www.portofoakland.com/environm/prog_04c.asp

1.4.6 Master Plan vs. Detailed Plan

The main function of a master plan is to provide a policy structure and strategic direction (i.e. "road map") to address a given planning or environmental issue. A master plan accomplishes this function by setting forth a vision and establishing a framework composed primarily of policies, goals, objectives, and general actions and measures. A master plan will also typically include background information on key planning issues, a planning horizon, a section describing the geographic boundaries of the plan, and a comprehensive analysis of the planning or environmental issues, problems, or concerns to be addressed. The level of detail in a master plan can be described as "general" as opposed to "specific" or "detailed." This general level of detail serves the policy-framing and strategic functions of the plan.

Some commentors questioned the Port's characterization of the MAQIP as a Master Plan, expressing their view that the Port had changed the parameters of the MAQIP at a mid-course point in the planning process. Also, some commentors stated that the Port's introduction of the "Planning Continuum" reflected a change in the character and direction of the planning process.

However, a review of MAQIP planning documents on both the Port and CONCUR's websites shows that the Port clearly described the MAQIP as a master plan document from the inception of the planning process. Port staff prepared a written description of the MAQIP as a master plan document in the "MAQIP Planning Document," which was presented to the Co-Chairs for review and discussion prior to being presented to the entire Task Force at the June 11, 2007 Task Force meeting.

Consistent with the structure of a master plan, the Port's presentation discussed parameters and goals of the MAQIP planning process and established 2020 as the proposed planning horizon. At the December 14, 2007 meeting, some members of the Task Force and attendees again questioned the master plan concept and approach. Port staff restated the function of a master plan and reminded participants of the June 11 discussion.

Because questions regarding the different phases and nature of planning and programming remained, Port staff developed a more detailed explanation of the relationship of master planning to subsequent planning phases, program development and project implementation. These concepts are illustrated in **Figure 1-1** ("Planning Continuum: Hierarchy of Planning Activities") and further described in Section 1.3.1.

1.4.7 Public and Agency Participation

Some commentors requested that a public process continue to ensure participation of impacted communities, environmental groups, elected officials, air quality agencies, and others in MAQIP consultation, project and funding assistance, and monitoring.

As outlined in Section 11.5, the Port will create a maritime stakeholder group through a due diligence process that is envisioned to address ongoing monitoring of MAQIP initiatives, community outreach, research and study, and funding and policy. This group will convene on a regularly scheduled basis and consider recommendations from the MAQIP, CTMP, Oakland Mayor's Task Force, the Oakland Partnership, and similar groups as they pertain to the Port and the neighboring community. The maritime stakeholder group will consist of key air quality agency staff, community members, Port maritime tenants, and other maritime-related businesses and other organizations.

1.4.8 Backup Plan for MAQIP

One commentor noted: "The final MAQIP should identify a backup plan, or at the very least a concrete plan for creating a backup plan, that can be implemented in the event that the Port of Oakland is unable to meet the expected reduction targets."[6] In response to this recommendation, a new subsection, 11.3.4 ("Reconsideration of MAQIP Strategies"), has been added to Section 11 ("Monitoring, Reporting, and Next Steps").

1.4.9 Recommendations for Additional Studies

Several commentors[7] requested that the Port conduct additional studies and analyses for the MAQIP, some of which are:

- 2000 emissions inventory
- 2005 emissions inventory revision to look at understatement of truck emissions (see Section 5.1) and research/analysis plans to look at truck emissions and socio-economic and labor challenges of trucking
- GHG inventory
- Uncertainties associated with the CARB health risk assessment study[8]
- Risk management decision framework for emissions estimate uncertainties

These studies fall beyond the current purpose, budget, and schedule of the MAQIP. Port staff expects to conduct a GHG inventory when the maritime emissions inventory is updated (in 2009 or 2010). At that time better trucking data may be available to assist in obtaining a more detailed estimate of truck emissions.

[6] Sandra Witt, Alameda County Health Care Services Agency, Public Health Department, July 14, 2008.

[7] Sandra Witt, Alameda County Health Care Services Agency, Public Health Department, July 14, 2008; Diane Bailey et al., Natural Resources Defense Council (NRDC), July 14, 2008; Jamie Fine, Environmental Defense Fund.

[8] CARB, 2008b.

Maritime Air Quality Improvement Plan Development

MAQIP

2

Section 2: Maritime Air Quality Improvement Plan Development

Over the last decade, residents living in neighborhoods adjacent to seaports throughout California have grown increasingly concerned about the potential impacts on their health of air emissions from goods movement. The Port has sponsored and participated in many community air quality efforts since the late 1990's, including the Vision 2000 Air Quality Mitigation Program, the West Oakland Environmental Indicators Project (WOEIP), the West Oakland Toxics Reduction Program, Ditching Dirty Diesel, and others. The community-led efforts also benefit from the support of programs at the Pacific Institute, BAAQMD (Community Air Risk Evaluation or CARE program), and the EPA (WOEIP). Local air districts, such as the BAAQMD, and CARB have responded to these concerns and are developing and enforcing regulations statewide to substantially reduce emissions from port-related sources.

In 2005 the Port decided to prepare a comprehensive air emissions inventory of seaport operations to provide baseline emissions data for future planning activities, such as this air quality master plan, and to enable the Port to track its tenants' progress in reducing harmful emissions.

During development of the inventory, CARB announced that, in response to requests from residents of West Oakland, it intended to carry out a human health risk assessment of the potential health effects of diesel particulate matter on the neighborhood. The study focus was on the diesel emissions from maritime sources at the Port and the Union Pacific Railyard, and from other sources that could affect West Oakland residents (for example, freeways, non-Port related trucking, ferries, and local industries). To assist CARB, the Port adapted its emissions inventory to agree with CARB's current methodologies. Through weekly calls, the Port, along with the BAAQMD, participated in the development of CARB's health risk assessment. The Port's emissions inventory was released in August 2007 and finalized in March 2008[1]; CARB's report "Diesel Particulate Matter Health Risk Assessment for the West Oakland Community: Preliminary Summary of Results" was made available in March 2008[2] and finalized in December 2008 with no substantive changes.

This plan relies on the emissions inventory and health risk assessment results to forecast future emissions and to help set its goals for emissions reductions.

[1] Port of Oakland, 2007b. "Port of Oakland 2005 Seaport Air Emissions Inventory" is available at: www.portofoakland.com/environm/airEmissions.asp

[2] CARB, 2008b. Available at: www.arb.ca.gov/ch/communities/ra/westoakland/westoakland.htm

2.1 Plan Overview and Development

A year-long facilitated participatory process led to the design of the MAQIP, with the MAQIP Task Force establishing guiding principles, adopting goals, proposing air quality improvement initiatives, and providing guidance for the preparation of this master plan.

Two broad planning goals to reduce the Port's impacts on public health and on ambient air quality were adopted by the MAQIP Task Force. The Port presented supporting quantitative goals that proposed explicit emissions reduction targets for specific air pollutants in future years.

In support of the adopted goals, the Task Force explored two types of strategies to reduce emissions and health risk:

- Measures that comply with current and anticipated regulations
- Measures that accelerate or otherwise go beyond regulatory requirements.

Task Force members prepared an extensive list of possible measures, or initiatives, that could potentially help the Port, tenants, customers, and related businesses go above and beyond regulatory requirements in achieving emissions and health risk reductions. Those proposed initiatives are intended both to help the Port and its maritime partners reach the 85% health risk reduction goal adopted by the Board, and to achieve emissions reductions earlier than required by regulations.

2.2 Public Participation

The MAQIP was developed through an extensive public stakeholder participation process led by Port staff with the assistance of facilitators from CONCUR, Inc. The MAQIP Task Force of 35 stakeholders, selected through a nomination process from community members, Port tenants, environmental advocacy groups, air quality and health agencies, and maritime-related businesses, was appointed by the Port's Executive Director, and first met in June 2007 to guide the development of the air quality master plan. Planning activities for the Task Force were led by a team of four co-chairs.

While the Board of Port Commissioners is responsible for approving the final content of the MAQIP through formal approval of the plan, the policy direction, and content were shaped by the Port's planning partners through a consultative process led by staff from a neutral facilitator, CONCUR, Inc. Key stakeholders and their roles in the creation of the MAQIP are described here, and a complete roster is provided in Table 2-1.

Task Force Co-Chairs

Mr. Omar Benjamin, Executive Director, Port of Oakland

Mr. Jack Broadbent, Executive Officer, Bay Area Air Quality Management District

Mr. Brian Beveridge, Co-Chair, West Oakland Environmental Indicators Project (this position was held by Ms. Margaret Gordon until Fall 2007, when she was appointed to the Board of Port Commissioners)

Mr. Andy Garcia, Executive Vice President, GSC Logistics Inc.

Task Force Members

The MAQIP Task Force was comprised of representatives from the following stakeholder groups:

- West Oakland residents
- Commerce, community, and environmental justice organizations based in West Oakland or actively involved in West Oakland studies
- Terminal operators and shipping companies
- Trucking enterprises
- Railroads
- Other goods movement related industry
- Labor
- Elected and appointed officials (including the Office of the Mayor, City of Oakland)
- Environmental regulatory and health agencies
- Energy and utility companies

Following a MAQIP kickoff meeting held on April 10, 2007, the MAQIP Task Force was formed and met seven times at roughly one to two-month intervals during plan development. The role of the Task Force included proposing or reviewing meeting topics, prioritizing air emission reduction measures, deliberating the merits of proposed actions, contributing to strategies for implementation, monitoring, and adaptive management and generally shaping plan content. Stakeholder deliberations routinely included brainstorming sessions, break-out group exercises, and roundtable discussions following various presentations by select stakeholder groups. Port staff worked in consultation with Task Force members and other stakeholders to develop broad-based consensus on the elements of the MAQIP, although no formal voting procedure was used to decide on the final MAQIP content. All Task Force meetings were open to the public and comment was solicited from both Task Force and non-Task Force members. Not everyone agreed with all of the decisions surrounding the plan development or with all of the elements in this master plan. However, the contributions of every Task Force member ultimately shaped this version of the plan. Constructive disagreements led to new perspectives and to the development of ambitious air quality and health risk reduction goals. Some of the recurring differences were reflected in the comment letters on the draft MAQIP and are summarized in Section 1.4.

The facilitators prepared a Key Outcomes Memorandum after each meeting to summarize major points of the discussion and decisions made. All meeting materials, including presentations, handouts, and the Key Outcomes memoranda, were posted on the Port's MAQIP website.[3] To further record its decisions, the Task Force adopted the following documents during the course of the MAQIP development:

Ground Rules, adopted on June 11, 2007: describes the composition of the MAQIP Task Force and the roles and responsibilities of members (Appendix A).

[3] The Port's MAQIP website is http://www.portofoakland.com/environm/prog_04c.asp

Table 2-1 Port of Oakland MAQIP Task Force Members and Alternates

MAQIP Task Force Co-Chairs	Alternates	Affiliation
Omar Benjamin*	Joe Wong*, Richard Sinkoff*, Diann Castleberry* (formerly held by Bernida Reagan)	Port of Oakland
Brian Beveridge	formerly held by Margaret Gordon	West Oakland Environmental Indicators Project
Jack Broadbent*	Jean Roggenkamp*, Jack Colbourn	Bay Area Air Quality Management District
Andy Garcia	Robert Rodriguez	GSC Logistics, Inc.
MAQIP Task Force Members	**Alternates**	**Affiliation**
Bill Aboudi	Jeff Caldwell (Yolo Enterprises)	AB Trucking
Wendy Alfsen	Kent Lewandowski	Sierra Club, Northern California
Marisa Arrona		Office of Councilmember Nancy Nadel
John Berge	John McLaurin, Laura Williams	Pacific Merchant Shipping Association
Ted Blanckenburg		American Navigation Maritime Services
Doug Bloch	Zach Goldman	Change to Win
George M. Bolton	Steve Lowe (West Oakland Commerce Association)	WOCAG
Washington Burns M.D.		Prescott Joseph Center
Miguel Bustos*	Steve Lautze*, VaShone Huff	City of Oakland, Office of the Mayor
Sharon Cornu	Wendall Chin	Alameda Labor Council
Chris Ferrara	Mike Trevino	Pacific Gas and Electric (PG&E)
Eric Goodman/Robert Tooke	Mike Stanfill, Ryan Perry	BNSF Railway Company
Carol A. Harris/Andy Perez	Darcy Wheeles, Peter Okurowski (California Environmental Associates, for Association of American Railroads)	Union Pacific Railroad Co.
Ginny Hessenauer	Scott Smith	American President Lines (APL)
Robyn Hodges*		Office of Supervisor Nate Miley
Maha Ibrahim	Leslie Littleton	Office of Congresswoman Barbara Lee
Jerry Jackson	Kevin Williams	JC Penney
Ellen Joslin Johnck	Richard Rhoads (Moffatt and Nichol)	Bay Planning Coalition
Deborah Jordan	Mike Bandrowski*, Richard Grow*, Amy Zimpfer*	U.S. Environmental Protection Agency
Andy Katz	Amy De Reyes*	Office of Supervisor Keith Carson
Ray Kidd	David de Korsak	West Oakland Neighbors (WON)
Ken Larson		SSA Terminals
Kenneth Levin	Fran Black	San Francisco Bar Pilots
Ellen Parkinson	Marcus Johnson	West Oakland Resident
Michael Porte	Dave O'Neill	TraPac, Inc.
Swati Prakash	Jamie Fine (Environmental Defense Fund)	Pacific Institute
Kurt Sulzbach	Jim Flanagan	APM Terminals Pacific Ltd.
Queen Thurston		West Oakland Resident and Economic Council for West Oakland Revitalization
David Weinreich	Maurice Williams	Office of Senator Don Perata
Veronica Williams		Office of Assemblymember Sandre Swanson
Sandra Witt*	Pamela Evans* (Alameda County Environmental Health Dept.)	Alameda County Public Health Dept.

* MAQIP Interagency Group member. Other Interagency Group members not represented on the Task Force are Leroy Griffin (Oakland Fire Department), Jeff Jones (Port), Cynthia Marvin (CARB), Michael Murphy (BAAQMD), Carolyn Suer (CARB), and Anne Whittington (Port).

Guiding Principles and Goals, provisionally adopted on August 14, 2007, subject to revisions, which were subsequently incorporated into the document: identifies the values guiding the development of the MAQIP and the two overarching goals of the MAQIP. Outlines topics to be covered in the plan (Appendix B).

Screening Criteria for Air Quality Initiatives, adopted on September 27, 2007: characterizes the criteria used to screen the potential emission and risk reduction initiatives suggested by the Task Force (Appendix C).

Proposed Lists of Primary Interest and Secondary Interest Air Quality Initiatives for Potential Implementation, revised by the MAQIP Task Force on January 30, 2008: describes the selection process and presents the MAQIP air quality initiatives as of January 30, 2008 (Appendix D).

2.3 Guiding Principles

The MAQIP Task Force identified seven guiding principles to articulate values that drove the planning process for the MAQIP and that should guide future updates. These principles were adopted by the Task Force on August 14, 2007:[4]

Seek Economic Growth: The Port of Oakland is an economic engine for the City of Oakland and the region. As such it is vital that the seaport remain strong and grow in a fiscally responsible manner. The Port recognizes that its ability to operate, grow, and be a good neighbor will depend on its ability to address potentially adverse environmental impacts resulting from activities occurring at the seaport, at the same time remaining a viable and competitive organization.

Promote Environmental Stewardship: The Port of Oakland holds environmental stewardship as one of its core organizational goals. The Port is committed to ensuring that seaport activities are carried out in an environmentally responsible manner, minimizing adverse impacts on our neighbors and the environment, and striving to improve the environmental conditions in the seaport area for the benefit of both present and future generations.

Apply Concept of "Fair Share": The Port of Oakland seaport commits to achieving its fair share of air emission reductions, while recognizing that it alone does not have the resources needed to subsidize the entire cost of emission reductions. Therefore, the seaport will count on the support of its private-industry and government partners, and on the commitment of all companies engaged in goods movement at, to, and from the Port of Oakland, to achieve and fund their fair share of emission reductions in an equitable manner.

Exercise Authority: The Port of Oakland seaport commits to using its authority and influence to achieve air quality improvement within market and legal constraints. Seaport operations produce emissions, but the Port does not own or operate the sources that produce those emissions. Where the Port may not have authority over an emission source, it will strive to develop voluntary partnerships or agreements aimed at reducing emissions. The Port will pursue emission reduction measures in conjunction with and relying upon local, state, and federal regulations.

Engage Stakeholders: The Port of Oakland seaport commits to actively engage and partner with its diverse stakeholder community in developing, implementing, and monitoring the MAQIP. The Port recognizes the need to especially collaborate and partner with those who are most affected by seaport operations, including, but not limited to labor, tenants, customers, and neighboring residents.

[4] One Task Force member commented that the adopted Guiding Principles "should be reordered to place environmental quality and public health principles at the top of the list, and economic principles toward the end of the list." However, since this is the format in which the document was adopted in 2007, the original order is retained.

Promote Environmental Justice: The Port of Oakland seeks to prevent and address adverse impacts to communities that experience disproportionate environmental and economic effects.

Build Knowledge: The Port of Oakland believes that good planning builds knowledge and educates, and thus results in informed decisions. To this end, the Port strives to create a plan that educates and adds value and in which knowledge is built, shared, and used by all participants as a basis for informed and accountable decision-making. The Port and its stakeholders will rely on the best available information, science, and technology in all aspects of maritime air quality planning. The Port and its stakeholders will remain flexible in their approaches to improving air quality, in order to respond to, adapt to, and incorporate new advancements, information, and evolving regulatory programs.

Berth 55 (Hanjin Terminal) from Middle Harbor Shoreline Park, 2003.

2.4 MAQIP Goals and Strategies

Early in the MAQIP planning process, the Task Force adopted two planning goals[5] (see Section 7):

Goal 1: Reduce the adverse public health impacts of the Port of Oakland's seaport-related air emissions at the seaport area and in neighboring communities that are most affected by goods movement at the seaport (in particular West Oakland) and on workers in the maritime area, as expeditiously as feasible.

Goal 2: Reduce the adverse impacts of the Port of Oakland's seaport-related air emissions on ambient air quality in West Oakland and more generally in the San Francisco Bay Area Air Basin, as expeditiously as feasible.

[5] Source: Guiding Principles and Goals, provisionally adopted on August 14, 2007, subject to revisions. The entire revised document is provided in Appendix B.

For the Port, its tenants, customers and related businesses to reach these goals, the Task Force realized that it was essential to rely largely on federal and state regulations to reduce emissions, but that additional emissions reductions could also be necessary. Therefore, in support of the adopted goals, the Task Force explored two types of strategies to reduce emissions and health risk:

- Measures that comply with current and anticipated federal and state regulations
- Measures that go beyond federal and state regulatory requirements

Emissions Reductions Through Regulatory Compliance

With the adoption in 2006 of the "Emission Reduction Plan for Ports and Goods Movement in California" (GMERP) as a state-wide air quality master plan, CARB embarked on an ambitious effort to regulate the major sources of port-related emissions, especially DPM. The GMERP contained a goal of reducing DPM emissions back to 2001 levels by 2010 and reducing statewide DPM health risk 85% by 2020, compared to 2001 levels. To reach these goals, CARB is developing a comprehensive set of regulations to control port-related goods movement emissions. Some regulations are already making a difference in seaport emissions, while others have not yet taken effect or are still under development (see **Table 4-2** and Appendix E).

Additional and Accelerated Emissions Reductions

The other approach to reaching the Port's MAQIP goals is to seek additional and accelerated emissions reductions beyond those expected to accrue from timely compliance with regulatory requirements. Many of the regulations are extremely aggressive, so they do not leave much room for voluntary actions that produce additional emissions reductions. However, accelerated compliance with regulations can result in earlier reductions in emissions and risk. All of the MAQIP initiatives described in Section 9 fall into this additional reduction category, and each will require a feasibility analysis to ensure that the measure is financially, technologically and legally feasible.

2.5 MAQIP Elements

Since the purpose of the year-long MAQIP effort was to produce a written maritime air quality master plan, the MAQIP Task Force members proposed that the Port's plan include at least the following elements:[6]

- Geographic and jurisdictional boundaries of seaport emission sources and the affected neighboring areas to which air quality improvement efforts will be primarily targeted
- Pollutants that will be targeted for reductions, and the impacts of those pollutants on the environment and public health
- Regulations affecting seaport operations
- Quantification of baseline and projected emissions and the linkage between emissions and risk
- Quantitative objectives or "goals" for reducing the adverse public health and environmental impacts of seaport air emissions
- Potential measures and related initiatives for reducing emissions from seaport operations that build upon the

[6] Source: Guiding Principles and Goals, 2007, Appendix B.

regulatory and voluntary efforts of others to reduce emissions and the health impacts associated with these emissions. These potential measures may also be included in specific mitigation plans that may be adopted as part of CEQA review for future development projects at the Port of Oakland seaport

- Timelines, standards, and strategies for implementing the Plan, monitoring and measuring the progress of such implementation, performing adaptive management, and addressing progress shortfalls
- Public health and regulatory agency leadership and coordination to assist the Port in tracking risk reduction by providing routine updates to risk studies

All of the above elements are incorporated in this plan, except for the last. The Port added additional elements to complete the plan, including:

- Master plan purpose and planning approach
- Information about the Port history, organization and its maritime operations
- Overview of the MAQIP development process and Task Force roles
- Port emissions reduction strategies
- Relationship of Port air quality programs and projects to the proposed initiatives

2.6 MAQIP Interagency Group

At the request of the Task Force, the MAQIP Interagency Group was created to provide public health and regulatory agency expertise and resources in support of the MAQIP. The group is comprised of representatives of the public agencies and elected officials that participated in or advised on MAQIP development, including CARB, EPA, BAAQMD, City of Oakland, Port of Oakland, Alameda County Public Health and Environmental Health Departments, and the Offices of Mayor Ron Dellums of Oakland and Alameda County Supervisors Nathan Miley and Keith Carson.

The group meets periodically to coordinate efforts in support of the MAQIP. The Interagency Group produced two MAQIP-related work products in 2008:

- A matrix that summarizes regulations affecting the Port's seaport operations, with agency responsibilities (Appendix E);
- A proposed near-term MAQIP implementation plan for the Port and other agency members. The original version (November 19, 2008), is included as Appendix K.

Port of Oakland and Its Seaport Operations

MAQIP

3

Section 3: Port of Oakland and Its Seaport Operations

As an independent department of the City of Oakland, the Port, operating through its Board of Port Commissioners, manages property stretching along 19 miles of Oakland waterfront. This "Port Area" encompasses property from Oakland International Airport to Jack London Square, in addition to the seaport area. This maritime air quality master plan applies only to the seaport area and operations.

3.1 History of the Port of Oakland

The history of harbor development in Oakland dates to the mid-nineteenth century, when Oakland was first incorporated as a city. Oakland's shallow harbor was a port of call for bay and river vessels, such as ferries and scow schooners, but it was the city's designation as the terminus of the transcontinental railroad in 1869 that brought fundamental change to the Oakland waterfront. The railroad, which had gained control of Oakland's waterfront, was a magnet for industry. A vast railyard, adjoined by factories and canneries, spread over the marshes of West Oakland, and the Oakland Long Wharf, which extended nearly three miles into deep water, soon became one of the most important shipping terminals on the Pacific Coast. Large-scale federal harbor improvements to make Oakland more accessible to ocean-going vessels began in 1874. By the late 19th century, wooden hulled schooners could discharge their cargo into dockside warehouses, known as transit sheds, and longshoremen moved cargo between shore and vessel with hand trucks, shipboard derricks, and cargo nets.

The transition from wind-powered wood hulls to fuel-powered steel hulls in the early 1900s required new facilities and greater depths for increasingly larger vessels. Municipal waterfront development in the Oakland Estuary began shortly after the city regained title to the waterfront in 1909. These early municipal facilities were reconfigured, and additional wharves and transit sheds were added, after the Port of Oakland was established as an independent department of the City of Oakland in 1927 with the passage of a City Charter amendment. By the mid-1930s, the Port was a regular port of call for more than forty international steamship lines. World War II transformed Oakland into one of the nation's busiest military ports. Two large military bases covered hundreds of acres of former tidelands on the western waterfront and the military occupied most of the Port's maritime facilities. Wartime shipyards, which employed thousands of people, lined the Estuary. Most East Bay shipyards closed after the war ended in 1945.

The Port introduced large-scale container operations to the Pacific Basin in 1962. Containerized shipping revolutionized the cargo-handling industry and necessitated the conversion of traditional break-bulk facilities. Gradually, private and military-held waterfront land west of Jack London Square was consolidated and redeveloped into marine terminals. Transit sheds and other structures were removed and wharves and storage areas were either reinforced or rebuilt to handle the increased loads from cranes and stacked containers. The Port's maritime area now includes more than 1,210 acres of marine terminal facilities and support areas in the shoreline and water areas.

The most recent changes to the Port have come about through the closure of military bases. The site of the Navy's Fleet and Industrial Supply Center, Oakland (FISCO), reverted to the Port in 1999. The Port developed that property under the Vision 2000 program to construct two new maritime terminals, an intermodal rail facility and a public park. A companion project to deepen channels and berths from -42' to -50' and to create a wildlife habitat in Middle Harbor is nearing completion. The Oakland Army Base was closed in 1999 and the title to that property transferred from the Army to the Oakland Base Reuse Authority in 2003 and then to the Port and the City of Oakland in 2006. Environmental review of projects proposed for the Port's 182-acre share of the Army Base property was initially completed in 2002.

3.2 Seaport Operations

Located on the eastern shore of San Francisco Bay, one of the great natural harbors of the world, the Port was among the first ports to specialize in intermodal container operations, which revolutionized international trade and helped create today's global economy. Today, the Port's maritime seaport accounts for approximately $2 billion annual economic impact in annual trade and 28,000 jobs. In Fiscal Year 2008, the seaport produced 43% of total Port operating revenues, or approximately $128 million. The seaport is the 3rd and 5th largest container port on the West Coast and in the United States, respectively.

Facilities

The Port serves as the principal ocean gateway for container cargo in Northern California. The seaport provides an interface for waterborne international and domestic cargo moving between inland points in the United States and the Pacific Basin, as well as other points in the world.

The seaport (Figure 3-1) comprises four major marine terminal areas: the Outer Harbor Terminal Area, the 7th Street Terminal Area, Middle Harbor Terminal Area and the Inner Harbor Area. The seaport's 20 deepwater berths and 37 container cranes are backed by a network of local roads and interstate freeways, ancillary services, warehouses and intermodal railyards. One railyard is situated on Port-owned land; the other is on private property adjacent to the Port. The seaport includes more than 1,210 acres of water area and land-side facilities.

The seaport is a landlord port; it leases terminal facilities to shipping lines and stevedoring companies. The seaport does not operate, or employ the people who operate, the terminals, ships, cargo handling yard equipment, trucks or trains that move the cargo that passes through the Port. Aside from the electric-powered container cranes used to move cargo on and off the ships, all of these pieces of equipment and machinery are almost exclusively powered by diesel engines and, consequently, are sources of diesel particulate matter (DPM), oxides of nitrogen (NOx), oxides of sulfur (SOx) and other pollutants that are the subject of the MAQIP. While the seaport does not own or operate these sources of air emissions, the Port is committed to doing its part, working with its community and business partners, to reduce air pollution from goods movement activities.

Trade

The seaport is one of the four major gateways for international containerized cargo shipments on the North American West Coast, with a market share of approximately 10% in calendar year 2007. In that same year, the seaport handled 2.4 million TEUs, or 1.3 million containers. For comparison, the other two major gateways on the United States West Coast are the Ports of Los Angeles/Long Beach and Seattle/Tacoma, with 2007 market shares

of approximately 63% and 16%. The Oakland seaport handles a diverse range of containerized cargo including both import and export commodities. Principal exports moving through the Port are agricultural products, pulp and waste paper, raw cotton, animal feed, meat, synthetic resins and plastic chemicals, specialized industrial machinery, and wood and lumber. Principal imports are fruits and vegetables, beverages, meat, electronic data processing equipment, auto parts, newsprint, iron and steel, coffee, tea, and spices. The balance of trade at the Port is slightly tipped toward export (outbound), which represents approximately 55% of the cargo handled at the Port. The breakdown of import vs. export cargo from year to year changes in response to economic conditions. Pacific Rim countries continue to be the principal origination and destination points for cargo through the Port. Of the total cargo traffic at the seaport, approximately 70-80% is destined for local markets in Northern and Central California and the remaining 20-30% is destined for non-local markets elsewhere in the United States.

Competition

In the last 10 years West Coast ports increased their combined share of container traffic relative to all ports in North America by approximately 7%. This gain occurred primarily due to increased imports from Asia. However, over time, future improvements to the Panama Canal and capacity increases at East and Gulf Coast ports will tend to benefit those ports over West Coast ports. Additionally, in the future, Canadian and Mexican ports may capture a growing share of container traffic that originates or terminates in the United States.[1]

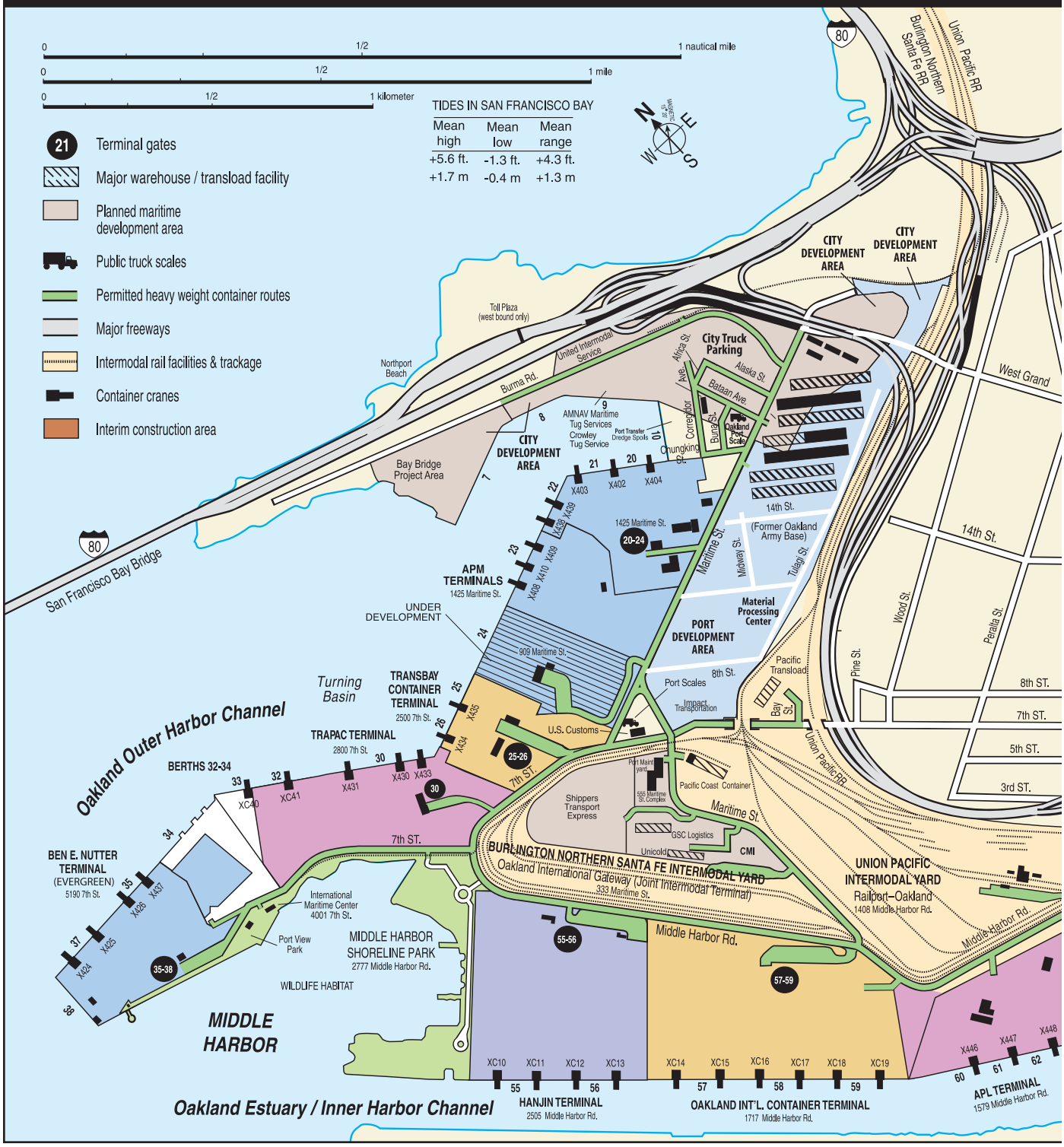
Mouth of Oakland Estuary, 2006.

Despite the aggregate West Coast port growth over the last 10 years, the seaport's market share has decreased relative to that of other major West Coast North American ports. In 1997, the Port's share of the West Coast market was 13% of all TEUs; in 2007 and 2008, it was approximately 10% and 11%, respectively. The seaport's decrease in market share resulted largely from an increase in the combined market share of the Ports of Los Angeles and Long Beach. The large local market and robust intermodal system serving the southern California ports often make these ports the preferred gateway for North American container imports.[2] In 2008, the U.S. and world economies experienced a major downturn, resulting in significant cargo volume declines. The maritime industry is experiencing significant challenges as the economic downturn continues into 2009. As a result, competition between ports is likely to intensify in the near term.

[1] Port, 2007a. Port of Oakland Feasibility Report for 2007 Bonds, October 2007.

[2] Port, 2007a.

Figure 3-1 Port of Oakland Maritime Facilities



INFORMATION

PORT OF OAKLAND	(510) 627-1100
Automated Customer Service	(510) 627-1461
Fax	(510) 835-1641
Maritime Operations	(510) 627-1308
Emergencies - weekdays	(510) 627-1308
After hours or holidays	(510) 577-4000
Web Site: *www.portofoakland.com*	
CITY OF OAKLAND	
Fire Prevention Bureau	(510) 238-3851
Oakland Police	(510) 238-3481
MARINE EXCHANGE, S.F. BAY Vessel arrivals	(415) 441-6600
RAILROADS	
Oakland Terminal Railway	(510) 832-8464
Burlington Northern Santa Fe	(510) 268-3543
Union Pacific	(510) 891-7669
SAN FRANCISCO BAR PILOTS	(415) 362-5436
U.S. COAST GUARD (USCG)	
Capt. of Port/Marine Safety Office	(510) 437-3073 (24 hrs)
Dangerous Cargo	(510) 437-3081
Environmental Protection	(510) 437-3781
Pollution Reports	(510) 437-3781
Vessel Traffic Service	(415) 556-2760 (24 hrs)
U.S. CUSTOMS SERVICE	
District Customs House	(415) 782-9200
East Bay Station	(510) 273-4336
U.S. DEPARTMENT OF AGRICULTURE (USDA)	(510) 337-5000
USDA Meat Inspection Facility	(510) 893-3085
U.S. FOOD & DRUG ADMINISTRATION (FDA)	(510) 337-6700
U.S. Weather Service Forecasts	(510) 562-8573 (24 hrs)

December 2007

Tideland Trust Properties

Beginning in 1852, the State of California conveyed tideland to the City of Oakland, as trustee for the people of the State of California, to accommodate and promote harbor commerce and navigation. These tideland grants and trust assets may be subject to amendment or revocation by the state legislature, as grantor of the trust and as representative of the beneficiaries (the people of the state). Most of the property on which the seaport facilities are located is subject to a trust imposed by more than a dozen tideland grants. Certain requirements and restrictions are imposed by the grants. Generally, the use of lands subject to the trust is limited under the terms of the grants to harbor and airport uses and other uses of statewide interest, such as fishing, public recreation, and enjoyment of the waterfront. The Port may not sell any of the granted lands, nor lease for periods of more than 66 years. There are also certain limitations on the use of funds generated from the lands and trust assets. Trust-generated funds may be used only for trust purposes as opposed to general municipal purposes. All revenues earned by the Port in effect constitute funds to the state trust.

Seaport Revenue

The Port and all other California public ports control and determine their own rate structures for the use of their facilities. The primary source of seaport revenue is the assessment of charges to customers of the seaport for use of its facilities. Charges are assessed in two ways: the Port tariff and negotiated agreements. The tariff sets forth the seaport's rules and regulations and standard charges for the use of seaport facilities. In addition, most seaport customers operate under one of several types of agreements, such as Preferential Assignments, Lease Agreements, Fixed Revenue Agreements, and Short Term Agreements. With the exception of Short Term Agreements, these agreements are usually negotiated for time periods of no less than 10 years, and most have multi-year options to extend. The Port only enters into agreements with enterprises that conduct business on Port-owned land (e.g., marine terminal operators). Therefore, for example, the seaport does not have such agreements with shipping lines. All revenues earned by the Port in effect constitute funds to the state trust and can only be used for trust purposes. Because of the long-term nature of most of its leases and the conditions imposed by the Tidelands Trust, the Port has limited ability to increase its revenues or to use those funds for purposes not specified in the state land grants.

3.3 Future Seaport Growth

During the planning horizon of the MAQIP, the Port or its tenants may construct infrastructure projects, such as expansion of rail or other facilities at the former Oakland Army Base, roadway realignments and marine terminal modernization, to improve cargo movement, terminal efficiencies and traffic circulation. All such projects are subject to review under the California Environmental Quality Act (CEQA) prior to the Board of Port Commissioners' approval of construction agreements, building permits or other authorizations. The MAQIP does not pre-empt or replace project review under CEQA, and does not replace project-specific air quality mitigation plans, if required by the CEQA analysis.

Technical and Regulatory Background

MAQIP

4

Section 4: Technical and Regulatory Background

The types and effects of harmful air pollutants are described in this section, along with the technical and regulatory context of air quality measurement, planning, and control. Air quality planning is driven by regional compliance with ambient air quality standards, which set maximum concentrations of various pollutants in the air. Air quality improvement policies and standards are generally established to reduce the risk to human health, while regulations often target the equipment emissions that produce the pollutants.

While reduction of all air pollutants from Oakland's seaport operations is a goal, the focus of the MAQIP Task Force and of the Port is on diesel particulate matter (DPM) due to the health risk it poses for nearby residents.

4.1 Pollutants and Their Impacts

United States and California air pollution laws establish two types of air pollutants: "criteria" pollutants and "hazardous" or "toxic" pollutants (U.S.) or contaminants (California).[1] The two types of pollutants are regulated differently.

The EPA and CARB have each established ambient air quality standards for criteria pollutants. The ambient standards prescribe a maximum concentration of each pollutant allowed in the air based on public health criteria. In general, pollutant concentrations lower than the standards are considered safe to breathe. State and federal laws require air pollution control agencies to develop regional air quality plans to demonstrate how they will attain ambient air quality standards over time.

There are no comparable ambient standards or planning requirements for toxic air contaminants. Most toxic air contaminants are known or suspected carcinogens, although some are also regulated because exposure can cause other acute or chronic health effects. For carcinogens, regulatory policy assumes that any level of exposure can increase the risk of developing cancer, so no level of exposure is considered safe. Instead of ambient standards or plans, state and federal law require the control of toxic air contaminants at their source with the goal of minimizing public exposure.

The EPA and CARB both set ambient air quality standards for criteria pollutants. The most common criteria air pollutants are:

- Ozone (O_3)
- Carbon monoxide (CO)
- Sulfur dioxide (SO_2)

[1] A toxic pollutant is defined as "an air pollutant which may cause or contribute to an increase in mortality or an increase in serious illness, or which may pose a present or potential hazard to human health" (California Health and Safety Code, section 39655).

- Nitrogen dioxide[2] (NO_2)
- Particulate Matter, consisting of PM_{10} (coarse particles 10 μm or less in diameter) and $PM_{2.5}$ (fine particles 2.5 μm or less in diameter)

Diesel engines produce nearly all of the air pollution emitted by goods movement activities associated with the Port of Oakland. Diesel engines emit all major criteria pollutants but some are of more concern than others. Because of their fundamental design, uncontrolled diesel engines are, compared to gasoline engines, "naturally" high emitters of nitrogen oxides (NOx) and particulate matter and relatively low emitters of carbon monoxide (CO) and reactive organic gases (ROG). In addition, diesel engines burning fuel with a high sulfur content such as is typically used, for example, by large ocean-going vessels, are also high emitters of sulfur dioxide (SO_2). High fuel sulfur content also increases particulate emissions. The particulate matter emitted by diesel engines contributes to $PM_{2.5}$ and PM_{10} concentrations in the air.

Diesel particulate matter (DPM), which contributes to $PM_{2.5}$ and PM_{10}, is also identified by the State of California as a toxic air contaminant, and is therefore of particular concern to the Port. DPM is the particulate portion of diesel engine exhaust. Diesel exhaust is a complex "stew" of pollutants of various chemical species that occur in both solid and gaseous forms. The composition will vary depending on engine design, operating conditions, fuel composition, lubricating oil, and whether an emission control system is present. DPM contains carbon particles, which are often coated with various other substances, a soluble organic fraction, and a sulfate fraction. DPM consists of very small particles (over 90% are $PM_{2.5}$ or smaller) that are inhaled and can be absorbed deep into the lungs when breathed. The level of exposure to DPM depends on proximity to sources of DPM emissions, the magnitude of the emissions from those sources, and the duration of the exposure.

Nitrogen oxides and ROG emitted by diesel engines and other sources react in the atmosphere with other pollutants to form several important secondary pollutants, especially ozone and various species of secondary particulate matter. Sulfur dioxide also reacts in the atmosphere to form several species of secondary particulate matter. The chemical reactions that transform these gases into other secondary pollutants are complex and take time to occur as winds disperse pollutants and transport them downwind from where they are emitted. As a result, the contributions to ozone and secondary particulate matter formation of the Port's NOx, ROG and SO_2 emissions are more regional in nature and typically occur well downwind of the Port as the Port's emissions mix with those from numerous other sources.

4.2 Overview of Ambient Air Quality

Monitoring of ambient air quality, and comparing the results to state and federal standards, is the most scientifically accepted way to measure air quality. While the Bay Area Air Quality Management District (BAAQMD) manages the regional air monitoring system, the Port established its own monitors in West Oakland during construction of the Vision 2000 projects (Berths 55-59 and a railyard) due to concerns about the impacts of construction on local air quality.

[2] Nitrogen oxides (NOx) include nitric oxide and nitrogen dioxide.

4.2.1 Regional Setting

The San Francisco Bay Area Air Basin consists of all or parts of nine counties.[3] BAAQMD has jurisdiction over the air basin, although it shares regional air quality planning responsibilities with two other regional planning agencies, the Metropolitan Transportation Commission and the Association of Bay Area Governments. A network of air monitoring stations operates throughout the air basin to measure concentrations of criteria pollutants. Data collected from this network show that ambient standards for ozone and particulate matter are exceeded at some locations in the region. As a result, CARB has designated the San Francisco Bay Area Air Basin as "Nonattainment" for ozone and particulate matter and the EPA has designated the Air Basin as "Nonattainment" for ozone.[4] The San Francisco Bay Area is designated "Attainment" for other pollutants.

Ozone concentrations in the Bay Area are highest in the summer and fall, particularly during periods of high temperatures and light winds. Peak ozone concentrations tend to occur in warmer, more inland areas like the Livermore Valley and the South Bay. Ozone levels are lower in coastal cities like San Francisco and Oakland.

Bay Area particulate levels are higher in the winter than the summer. Peak concentrations occur throughout the Bay Area during cool, stagnant periods when pollutants from cars, trucks, fireplaces and other sources are trapped near the surface and are poorly dispersed. Because these conditions typically occur on a regional scale, when elevated particulate levels occur in Oakland, they also occur in other areas.

Toxic air contaminant concentrations are also monitored at several locations in the Bay Area. Though some commonly emitted or ubiquitous toxic air contaminants are measured at these stations, others are not. For example, there is as yet no monitoring method for specifically measuring DPM as distinct from other types of particulate matter in the ambient air, so DPM concentrations can only be estimated by indirect means.

4.2.2 Local Setting

Air pollution potential in northwestern Alameda County is lowest close to the Bay, due largely to two factors: good ventilation from winds and relatively low flux of pollutants from upwind areas.[5] However, numerous sources of pollutants are located close to the Bay shore, and ship traffic on the Bay releases emissions that are subsequently blown towards shore. This concentration of sources contributes to community exposure to directly emitted pollutants in locations near the sources.

Recent air monitoring data collected in Alameda County show that air quality in the county occasionally exceeds state and national ambient air quality standards for ozone and the state particulate matter standards, but all other ambient air quality standards are attained.[6]

The MAQIP focuses primarily on particulate pollution, more specifically on DPM in the immediate vicinity of the Port of Oakland due to the health risk potential of DPM. As previously noted, current monitoring technology is not capable of measuring DPM concentrations directly in the ambient air. However, DPM contributes to ambient

[3] Alameda, Contra Costa, San Mateo, Santa Clara, Napa, San Francisco, Marin, and parts of Solano and Sonoma Counties.

[4] The official designations are: "Marginal-Nonattainment" for the National 8-hour ozone standard, and "Nonattainment" for the State ozone, PM_{10} and $PM_{2.5}$ standards.

[5] BAAQMD, 1999. For more information, consult the Bay Area Air Quality Management District website. http://www.baaqmd.gov. "CEQA Guidelines: Assessing the Air Quality Impacts of Projects and Plans," December 1999.

[6] CARB, 2008a. ADAM data base http://www.arb.ca.gov/adam/cgi-bin/db2www/adamtop4b.d2w/start. The site was accessed March 25, 2008.

concentrations of fine fraction particulate matter ($PM_{2.5}$), which is a subset of PM_{10}. Both $PM_{2.5}$ and PM_{10} can be directly measured, although the DPM fractions of $PM_{2.5}$ and PM_{10} can only be roughly estimated.

Neither CARB nor BAAQMD have traditionally operated a monitoring station to measure PM_{10} or $PM_{2.5}$ in Oakland by the Federal Reference Method (FRM) needed to determine compliance with the National Ambient Air Quality Standards (NAAQS); the closest monitoring site with both is in Fremont. The Filbert Street station in West Oakland, which has been in operation since 2001, measures $PM_{2.5}$ with a beta attenuation monitor (BAM) technology, which is not strictly comparable to the NAAQS[7]. In November 2007 the BAAQMD opened an air monitoring station on International Boulevard in Oakland to measure ozone, nitrogen dioxide, carbon monoxide and $PM_{2.5}$. No exceedances of any air quality standards were measured during the two months of operation of this station in 2007.[8] In addition, the BAAQMD plans to open a monitoring station near West Grand Avenue.

From 1997 to 2005, the Port operated particulate monitoring stations to characterize existing particulate air quality conditions and to provide baseline data on particulate air pollution prior to and during construction and operation of the Port's Vision 2000 marine terminal and rail yard projects. One station was located on Port property ("Port site") and the other in West Oakland ("residential site"). While these monitoring stations used approved monitoring equipment and analytical methods, the data collected are not part of the San Francisco Bay Area's official monitoring record because the stations were not operated by CARB or BAAQMD. Nevertheless, the data shown in Table 4-1 indicate the average particulate levels at the locations monitored over the approximate eight years of program operation. Neither West Oakland station recorded any particulate levels exceeding federal $PM_{2.5}$ or PM_{10} standards during this period, although some measurements did exceed the State 24-hour PM_{10} standard.

Table 4-1 Cumulative Average Values of $PM_{2.5}$ and PM_{10}, West Oakland and Bay Area[a]

Location	$PM_{2.5}$ Cumulative Average ($\mu g/m^3$)	PM_{10} Cumulative Average ($\mu g/m^3$)
West Oakland – Port site	11.7	25.9
West Oakland – Residential site	10.6	23.5
Bay Area region	11.25	22.0

[a] Source: GAIA Consulting, Inc., "Cumulative Final Report (1997-2005), West Oakland Particulate Air Quality Monitoring Program," June 2006. The dates used for this analysis were: 1999-2005 for $PM_{2.5}$ and 4/1997-4/2005 for PM_{10}

4.3 Human Health Exposure, Risk and Other Impacts

This section provides a brief discussion of the health impacts of the more important air pollution problems to which maritime sources at the Port contribute. The purpose here is to provide an overview of the public health context in which the MAQIP was developed as well as some perspective on the Port's contribution.

[7] BAAQMD, 2008b. Personal communications with Eric Stevenson, BAAQMD, October 2 and 20, 2008.

[8] BAAQMD, 2008a. "2007 Air Monitoring Network Plan," July 2008, p. 34: http://www.baaqmd.gov/tec/aammet/ambient_network_plan.pdf

4.3.1 Non-Cancer Effects of Ozone and Particulate Matter

The potential public health consequences of exposure to ozone and particulate matter are significant. According to CARB:

> *Exposure to levels of ozone above the current ambient air quality standard can lead to human health effects such as lung inflammation and tissue damage and impaired lung functioning. Ozone exposure is also associated with symptoms such as coughing, chest tightness, shortness of breath, and the worsening of asthma symptoms. The greatest risk for harmful health effects belongs to outdoor workers, athletes, children and others who spend greater amounts of time outdoors during smoggy periods.*[9]

Ozone forms on a regional scale from various precursor pollutants that are emitted over a large area. The primary precursors are reactive ROG and NOx. The Port contributed <1% of regional (Bay Area) ROG emissions and about 2% of NOx emissions in 2005.[10]

CARB has described the impacts of exposure to particulate matter as follows:

> *Extensive research indicates that exposure to outdoor PM_{10} and $PM_{2.5}$ levels exceeding current air quality standards is associated with increased risk of hospitalization for lung and heart-related respiratory illness, including emergency room visits for asthma. PM exposure is also associated with increased risk of premature deaths, especially in the elderly and people with pre-existing cardiopulmonary disease. In children, studies have shown associations between PM exposure and reduced lung function and increased respiratory symptoms and illnesses.*[11]

CARB recently published a report that updated some of the prior estimates of the public health consequences of exposure to particulate matter, with a focus on increased mortality.[12] The report discusses a number of health studies that show an association between long term particulate exposure and increased rates of premature death, even at levels well below current federal and state ambient $PM_{2.5}$ standards. There is still considerable uncertainty as to the number of premature deaths that occur annually, but CARB estimated the number as somewhere between 14,000 and 24,000 statewide in 2005. An estimated 1,800 to 3,700 premature deaths, about 15% of the statewide total, occurs in the San Francisco Bay Area, as defined by the boundaries of the BAAQMD.[13]

These mortality estimates, which are higher than previous estimates, occur from exposure to all types of directly emitted and secondary particulate matter. CARB also updated its estimate of the portion of total particulate exposure and premature deaths that can be attributed to the goods movement industry in California. CARB estimated that 3,700 deaths occurred statewide because of goods movement sources in California in 2005.[14] A little over half of the estimated health impact was due to DPM, while nearly all of the rest was due to exposure to nitrate particulate matter which forms via conversion of NOx emissions from goods movement sources to secondary particulate matter. Goods movement emissions are clearly a major contributor to estimated premature deaths in California.

[9] CARB, 2008e. http://www.arb.ca.gov/research/aaqs/caaqs/ozone/ozone.htm accessed March 26, 2008.

[10] CARB, 2006c. Regional Bay Area emissions from "California Almanac of Emissions and Air Quality-2006 Edition," http://www.arb.ca.gov/aqd/almanac/almanac06/almanac06iu.htm Table A-25.

[11] CARB, 2008f. http://www.arb.ca.gov/research/aaqs/caaqs/pm/pm.htm accessed March 26, 2008.

[12] CARB, 2008d. "Methodology for Estimating Premature Deaths Associated with Long-term Exposures to Fine Airborne Particulate Matter in California," Draft Staff Report, May 2008. The report was presented to the CARB at a public meeting on May 22, 2008.

[13] CARB, 2008d. Tables 4a and 4b, p. 34.

[14] CARB, 2008d. Table 6, p. 38.

CARB has not yet updated its estimate of the non-cancer adverse health effects caused by all goods movement sources in the Bay Area or by the maritime source emissions associated with the Port of Oakland. A very rough estimate of the Port's contribution to regional-scale health impacts can be made by comparing Port DPM and NOx emissions with regional emissions totals. The Port's estimated 2005 DPM emissions were <1% of Bay Area DPM while, as reported above, Port-related NOx emissions are about 2% of the region's total.[15]

Top pick loading freight train at BNSF Intermodal Yard, 2002.

4.3.2 Cancer Risk from Diesel Particulate Matter

While DPM contributes to non-cancer impacts, it is also a toxic air contaminant and therefore a source of cancer risk. The potential cancer risk from known carcinogens is expressed as the incremental number of potential cancers that could develop per million people, assuming the population is exposed to the carcinogen at a defined concentration continuously over a presumed 70-year lifetime. The potential number of excess cancers per million people can also be interpreted as the incremental likelihood of an individual exposed to the carcinogen developing cancer from continuous exposure over a lifetime.

CARB used monitoring data for some toxic air contaminants, along with modeled estimates of DPM concentrations, to estimate the background cancer risk in the Bay Area from the combination of toxic air contaminants to which the public is routinely exposed. CARB estimated that risk to be 660 in a million in 2000, with about 70% of that total attributable to DPM exposure.[16] Since risk levels vary from place to place due to a variety of factors, this estimate should be considered a rough estimate of average excess risk from toxic air contaminants in the San Francisco Bay Area.

[15] CARB, 2006c. Tables A-25 and 5-42.

[16] CARB, 2006c. Table 5-43.

The health risk assessment conducted by CARB, in cooperation with the BAAQMD, the Port, and Union Pacific Railroad, estimated cancer risk in West Oakland from all major sources of DPM in the area. The health risk assessment is a complex process that is based on current knowledge and a number of assumptions. The study estimated average excess cancer risk levels from DPM exposure in West Oakland at 1,186 in one million in 2005, of which about 16% (or 192 chances in one million) was caused by DPM associated with maritime operations at the Port.[17] This risk estimate should not be interpreted as a literal prediction of disease incidence in the affected communities but more as a tool for comparison of the relative risk between one facility or location and another. For more information on the 2008 West Oakland health risk assessment, see Section 5.2.

4.4 Regulatory and Policy Setting

CARB listed DPM as a toxic air contaminant in 1998 based on its potential to cause cancer, premature death, and other health problems. In September 2000, CARB followed up the identification of DPM as a toxic air contaminant by adopting a statewide risk reduction strategy: "Risk Reduction Plan to Reduce Particulate Matter Emissions from Diesel-Fueled Engines and Vehicles." The goals were to reduce statewide DPM emissions and average risk from DPM exposure by 75% by 2010, and 85% by 2020, compared to 2000 levels. The plan targeted virtually every category of diesel engines in the state.

In 2005, California initiated a broad planning initiative to develop and adopt a "Goods Movement Action Plan" (GMAP) for the state. The GMAP and the various initiatives that stemmed from it are important to the MAQIP for two primary reasons. First, it led to CARB's setting statewide goals for reducing the air quality impacts of goods movement sources. Those goals, particularly the goal of reducing statewide cancer risk from DPM exposure, became an important marker for the Port and the Task Force in setting MAQIP goals. Second, the GMAP led CARB to adopt a major regulatory initiative to reduce DPM emissions. Compliance with the regulations adopted by CARB and other agencies by the maritime and related industries is essential to meeting the MAQIP emissions and health risk reduction goals.

[17] CARB, 2008b.

4.4.1 California Goods Movement Action Plan

The overall policy goal of the GMAP[18] is "to improve and expand California's goods movement industry and infrastructure, in a manner that will:

- Generate jobs
- Increase mobility and relieve traffic congestion
- Improve air quality and protect public health
- Enhance public and port safety
- Improve California's quality of life."

An important offshoot of the focus on improving the goods movement system was the approval by California voters of the "Highway Safety, Traffic Reduction, Air Quality and Port Security Bond Act of 2006." The impact of the "infrastructure bond," or I-Bond as it came to be called, as a funding source for efficiency improvements and air quality projects at the Port of Oakland is significant.

4.4.2 CARB Emission Reduction Plan for Ports and Goods Movement in California

CARB named its master plan for reducing emissions from goods movement activities throughout the state, the "Emission Reduction Plan for Ports and Goods Movement in California" (GMERP). The plan, which was adopted in 2006, assessed the public health impacts and costs of the contribution made by goods movement sources to public exposure to diesel particulate matter (DPM), ozone and other pollutants. It estimated current and future emissions and proposed a series of regulatory actions for diesel sources under state jurisdiction. The plan focused heavily on DPM and NOx and contained a number of specific statewide goals, including reducing DPM emissions back to 2001 levels by 2010 and reducing statewide DPM health risk 85% by 2020, compared to 2001 levels. The plan also called for a major reduction in NOx emissions by 2020, with specific goals for the Los Angeles area.

Although container ports like Oakland's are an important focus, CARB's plan has a broader objective. The plan is aimed at reducing emissions from all goods movement activities, both international and domestic, and included sources such as bulk cargo, car carriers and refinery vessels, and rail and cargo truck movements on land. The planned percentage reduction in DPM emissions and risk is a statewide goal and benefits will not occur uniformly across the state. In particular, the benefits will vary from port to port.

The CARB resolution adopting the GMERP risk and emissions reduction goals called for the CARB staff to bring a series of regulations to the governing board for consideration in 2007 and 2008. Specifically, the regulations were to address port trucks, privately-owned truck fleets, low-sulfur marine propulsion fuel, shore power for ships and harborcraft, harborcraft fleets, new harborcraft engine standards, and upgrading switcher and yard locomotives.[19]

[18] California EPA, 2007. "Goods Movement Action Plan," Business, Transportation and Housing Agency and California Environmental Protection Agency, January 2007.

[19] CARB, 2006a. CARB Resolution 06-14, April 20, 2006.

4.4.3 Air Quality Regulations Affecting Seaport Operations

Table 4-2 briefly summarizes regulatory activities affecting emissions sources at the Port's seaport. While most actions are the responsibility of CARB because of their legal jurisdiction over California's port-related sources, the EPA holds responsibility for federal standards covering engine emissions. In addition, the BAAQMD is a regulatory partner with CARB and plans to support the overall emissions reduction effort with inspections, enforcement and other compliance-related measures. In the longer term, the International Maritime Organization (IMO) intends to continue adopting international treaty-based voluntary standards that will reduce emissions through amendments to Annex VI ("Prevention of Air Pollution from Ships") of the International Convention for the Prevention of Pollution from Ships (MARPOL). More details on each of the listed regulations are provided in Appendix E in the summary prepared by members of the MAQIP Interagency Group.

Most of the regulations listed in Table 4-2 are "future-effective"; that is, they will produce most or all of their emissions reductions in future years as they are phased in. The emissions forecasts used in the MAQIP include the estimated benefits of most, but not all, of those regulations (see Table 6-2).

Because future-effective regulations can be delayed, amended or even invalidated by court decisions, their estimated future benefits must be re-evaluated periodically. In the event of such delays, the Port intends to work actively with regulatory agencies, industry groups, other ports, community members and others to pursue appropriate revisions to regulations that may need modifications to achieve the targeted emissions reductions. Regulatory delays would also be discussed with members of a maritime stakeholders group.

Berths 55-56 (Hanjin Terminal) from Middle Harbor Shoreline Park, 2008.

Table 4-2 Summary of Adopted and Anticipated Maritime Air Quality Regulations and Standards by Source

Agency	Rule or Control Measure Description	Pollutants Most Affected	Status
Ocean-Going Vessels (Ships)			
CARB	Use low-sulfur fuel in auxiliary and main engines and in boilers	DPM, SO_2, NOx	Adopted in July 2008
CARB	Auxiliary engines use dockside electrical power while hotelling	DPM, NOx	Adopted 2007, phase-in beginning in 2010/2014
EPA	U.S. large marine engine emissions standards	DPM, NOx	Proposed for adoption in 2009
IMO	International large marine engine emissions standards	DPM, NOx	Amendments to MARPOL Annex VI adopted in October 2008 for implementation starting in 2010
IMO	International small marine engine standards	NOx	In effect, not ratified by U.S.
CARB	Vessel speed reduction during cruise mode	NOx	Under development for possible 2009 adoption
IMO	Use lower sulfur fuel in Western U.S. waters (SECA)	DPM, SO_2	Application under development, due in 2009
Cargo Handling Equipment			
CARB	Retrofit or replace existing equipment with new clean engines	DPM, NOx	Adopted and being phased-in beginning 2007
CARB/EPA	Emissions standards for new off-road engines	DPM, NOx	Adopted and in effect
CARB	Require use of ultra-low-sulfur diesel fuel	DPM, SO_2, NOx	Adopted and in effect
Harborcraft (Tugs)			
EPA	Emissions standards for new and rebuilt marine engines	DPM, NOx	Adopted, effective starting in 2009
CARB	Require use of ultra-low-sulfur diesel fuel	DPM, SO_2	Adopted and in effect
CARB	Retrofit or replace existing equipment with new clean engines	DPM, NOx	Adopted in 2007, phase-in starting late 2009
On-Road Trucks and Port Trucks			
CARB	Retrofit or replace existing port trucks with new clean engines	DPM, NOx	Adopted in 2007, phase-in starting in 2010
CARB	Retrofit or replace trucks in all private non-drayage fleets with clean new engines	DPM, NOx	Adopted in December 2008, phase-in starting in 2011
CARB	Emissions standards on new truck engines	DPM, NOx	Adopted, with phase-in starting in 2007
CARB	Require use of ultra-low-sulfur diesel fuel	DPM, SO_2	Adopted and in effect
Locomotives			
EPA	Emissions standards on new and remanufactured locomotive engines	DPM, NOx	Adopted, phase-in of most recent rule starting in 2010
CARB	Require use of ultra-low-sulfur diesel fuel on “intrastate” locomotives	DPM, SO_2	Adopted and in effect
CARB and the railroads also have a MOU to reduce locomotive idling in rail yards			
All Port Sources			
BAAQMD	San Francisco Bay Area Green Ports Initiative includes BAAQMD enforcement of CARB regulations affecting Port operations; grants for earlier or greater emission reductions; outreach; and monitoring progress.	All	Approved in November 2008

Port of Oakland Baseline Emissions and Health Risk

MAQIP

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Section 5: Port of Oakland Baseline Emissions and Health Risk

The Port prepared a 2005 seaport air emissions inventory, which was used by CARB to conduct a West Oakland human health risk assessment (HRA) study. This section summarizes the results of these two efforts. Together, the 2005 inventory and the HRA constitute a baseline to assess progress in improving air quality from implementation of the MAQIP.

5.1 Baseline Emissions

The Port's "2005 Seaport Air Emissions Inventory"[1] identifies and quantifies air emissions from maritime activities during the 2005 baseline year. The inventory is organized by five major source categories:

- Deep-draft ocean-going marine vessels (OGV)
- Commercial harborcraft (dredging and assist tugs)
- Cargo handling equipment (CHE)
- Trucking (container movements)
- Locomotives

The Port's baseline inventory provides estimates for emissions of five "criteria" air pollutants:

- Reactive organic gases (ROG)
- Carbon monoxide (CO)
- Nitrogen oxides (NOx), which consist primarily of NO with some NO_2
- Particulate matter including diesel particulate matter (PM)[2]
- Sulfur oxides (SOx), which consist almost entirely of SO_2

The Port voluntarily chose to prepare an air emissions inventory of its seaport in advance of any regulatory directive. The emissions inventory highlighted the Port's commitment to improve understanding of the nature, location and magnitude of emissions from its maritime-related operations. The Port decided to develop this

[1] Port of Oakland, 2007b. "2005 Seaport Air Emissions Inventory" (2007, revised 2008), available at: www.portofoakland.com/environm/airEmissions.asp

[2] Nearly 95% of the particulate matter emissions included in the inventory is diesel particulate matter (DPM). Some non-DPM emissions come from boilers on ships and LPG-powered engines on some cargo handling equipment.

inventory to better understand the emissions from typical Port activities so that the Port and stakeholders can better address its impacts on air quality. The inventory provides a technical basis for setting priorities and evaluating the cost-effectiveness and potential benefits of air pollutant control measures outlined in the MAQIP.

The Port and its consultants, ENVIRON and Sierra Nevada Air Quality Group, provided CARB with detailed spatial information on emissions so the inventory could be used as input to the West Oakland health risk assessment study performed by CARB. In January 2007 the Port released to the public a draft working document presenting the Port-proposed methodology for estimating emissions for each source category, along with CARB's comments on the proposed methodology. Public comment on the methodology was accepted through a Port-sponsored meeting on January 31, 2007; no comments directly related to the methodology were received. Preparation of the inventory commenced and a review copy of the completed emissions inventory was released in August 2007 for public comment. Comments were summarized in the "Response to Comments" document completed in November 2007. One of the comments received pointed to the need to include construction equipment emissions in the inventory. In response to this, Port staff commissioned a "2005 Seaport Construction Air Emissions Inventory," which was posted on the Port's website in March 2008, along with the finalized emissions inventory for all other sources. Full documentation of the data and assumptions used to develop the Port's inventory are available on the emissions inventory website.[3]

The seaport emissions inventory includes air emissions generated by maritime activities conducted by the Port of Oakland's tenants. On the water side, the spatial domain of the inventory includes Port-related marine vessel transit from dockside out through the Golden Gate Bridge, to the first outer buoys beyond the Pilot Buoy, approximately 30 miles away from the Port. On the land side, the spatial scope of the inventory includes nine marine terminals, one rail yard which is situated on Port-owned property (the Oakland Intermodal Gateway) and the road traffic between those facilities and the nearest freeway interchanges. The Port area was defined approximately by the boundaries of I-80, I-880 and Howard Terminal (Berths 67 and 68) adjacent to Jack London Square. Within this defined geographic area, three significant areas were specifically excluded as they were not controlled or operated by the Port of Oakland in 2005: the Schnitzer Steel terminal, the Union Pacific rail yard, and the former Oakland Army Base located between Maritime Street and I-880.

A summary of the Port emissions inventory is provided in Table 5-1. Port sources are estimated to have released a total of 274 tons of PM in 2005, nearly all of which (262 tons) is DPM. To put the Port's emissions in perspective, DPM emissions from all sources in the San Francisco Bay Air Basin were estimated to total 4,550 tons in 2005 (CARB, 2006b). Thus the DPM emissions from sources at the Port represent less than 6% of the total estimated Bay Area DPM emissions.

Trucks, harborcraft, and cargo handling equipment each produced 5-10% of the estimated Port-related PM emissions. Locomotives operating at the Oakland Intermodal Gateway produced a small fraction of the total emissions. Ocean-going vessels constitute the largest source category for all pollutants, producing 80-85% of estimated PM emissions and the major portion of other pollutants included in this emissions inventory.

Some MAQIP Task Force members expressed a concern that the "emission inventory significantly underestimates the emissions from Port trucks and thus the Port's contribution to regional air pollution."[4] The Port's emissions

[3] Port of Oakland, 2007b. http://www.portofoakland.com/environm/airEmissions.asp

[4] Letter from Diane Bailey et al., Natural Resources Defense Council, July 14, 2008.

Table 5-1 Port of Oakland Emissions Summary by Emission Source Category, 2005 (tons)					
Emission Source Category	**ROG**	**CO**	**NOx**	**PM**	**SO_2**
Ocean-going vessels (OGV)	117	235	2,484	220[a]	1,413
OGV – Off-shore[b]	97	169	1,717	158	950
OGV – Berth[c]	21	65	767	61	464
Harborcraft	22	83	345	13	3
CHE	53	408	766	22[a]	7
Truck[d]	52	154	339	17	2
Locomotive	7	11	76	2	2
Construction	3	12	34	1	0.25
Total	254	903	4,044	274	1,428

[a] A small portion of the total PM emissions from OGVs and CHE are not classified as diesel particulate matter (DPM) as defined by CARB. This includes PM from OGV diesel-fired boilers and CHE liquefied petroleum gas (LPG) engine emissions. DPM emissions from OGVs are 208.5 tons, DPM emissions from CHE are 21.2 tons; PM emissions from all other source categories are 100% DPM. Thus, the Port total DPM emissions equal 262 tons, 12 tons less than the total PM emissions.

[b] Includes emissions from ships while transiting outside the Golden Gate, while operating in the Reduced Speed Zone between the Golden Gate and the Bay Bridge, and while maneuvering between the Bay Bridge and the dock.

[c] Includes only emissions from auxiliary engines and boilers while ship is berthed (hotelling emissions).

[d] Based on EMFAC2007 as used in emission projection analysis; EMFAC2006 was used in the original inventory.

inventory characterized the emissions from drayage trucks using the best available information at the time for a defined geographic area; DPM was calculated at 17 tons in 2005. The CARB health risk assessment of West Oakland sources (Section 5.2) allocated a portion of freeway trucks outside the Port boundaries to the Port, resulting in an additional 3 tons of DPM in 2005 from Port trucks. Given the complex nature of port drayage, emissions from Port trucks are possibly the most difficult source category to quantify in an emissions inventory. As additional drayage truck information is collected that may better characterize the emissions in both the West Oakland community and the region, the information will be included in subsequent Port inventory updates.

It is important to keep in mind that the location where emissions are released is often as significant as—or even more significant than—the total quantity released. Emissions occurring close to a community will have a greater effect on human health risk on a per ton basis than more remote sources. Impacts of the various sources on West Oakland air quality will not necessarily be directly proportional to the magnitude of their emissions since some sources are located much closer to West Oakland than others. For example, particulate matter emissions from ocean-going vessels transiting outside the Golden Gate will have less impact to sensitive receptors in West Oakland than emissions that occur closer to shore. The HRA (Section 5.2) provides more information on the relationship between location and health risk.

5.2 CARB West Oakland Human Health Risk Assessment

In March 2008, CARB, working in cooperation with the Port, Union Pacific (UP) Railroad, and the BAAQMD, completed a study designed to help understand the potential health impacts from DPM emissions on residents of the West Oakland community. The purpose of CARB's study was to:

- Investigate potential health risks to residents of West Oakland and the Bay Area from DPM emissions from Port seaport operations, from UP railyard operations and from freeway, industrial, construction and other non-Port/non-UP diesel sources in and around West Oakland; and
- Provide information to help evaluate the effectiveness of possible mitigation measures.

CARB examined the impacts of diesel emissions from all major sources in and around West Oakland in 2005. These sources were divided into three groups:

- Part I (Maritime Port of Oakland): ocean-going vessels, commercial harborcraft, cargo handling equipment, on-port locomotives (Oakland Intermodal Gateway) and port drayage trucks operating on Port property, in West Oakland, and on local freeways
- Part II (Union Pacific Railyard): locomotives, cargo handling equipment, drayage trucks, and truck refrigeration units and reefer cars
- Part III (Non-port and non-Union Pacific Railyard areas in and adjacent to the West Oakland community): on-road trucks, ocean-going vessels, commercial harborcraft, ferries, fishing fleets, cargo handling equipment, locomotives, Amtrak Maintenance facility, major construction projects, stationary point sources, truck-based businesses and distribution centers

CARB estimated the impacts of these parts individually and cumulatively on West Oakland (population 22,200) in 2005. CARB also estimated impacts in 2015 and 2020 based on projected future emission levels. CARB also estimated the impact of just the Part I sources over a much larger area of about 3,800 square miles with a total population of 5 million stretching from Petaluma and Fairfield in the north, to San Jose in the south, and from the Pacific coastal waters in the west, to Livermore and Antioch in the east.

Key findings from CARB's study were:

- DPM ambient concentrations in West Oakland are estimated to be nearly three times the background DPM concentrations averaged over the entire Bay Area.
- The estimated lifetime potential cancer risk for residents of West Oakland from exposure to all DPM emissions included in the study is estimated to be about 1,200 excess cancers per million. This estimate assumes residents are exposed to the estimated 2005 outdoor DPM levels continuously for 70 years. By way of comparison, the corresponding background risk from DPM emissions over the entire Bay Area is estimated to be 480 excess cancers per million, the corresponding background risk from emissions of all air toxics species in the Bay Area is 660 per million and the expected cancer rate from all causes, including smoking, is about 200,000 to 250,000 per million, according to the CARB study.

- Of the total West Oakland DPM exposure risk noted above (1,186 per million from all sources), emissions from Port seaport operations (Part I) contribute 16% (192 per million), Union Pacific railyard (Part II) sources contribute 4% (43 per million) and other (Part III) sources in and around West Oakland contribute the remaining 80% (951 per million).

- As shown in **Figure 5-1**, the largest contributors to the potential excess cancer risk levels in West Oakland are emissions from non-Port on-road heavy-duty trucks, followed by ocean-going vessel (OGV) emissions (representing transiting, maneuvering, anchoring, and hotelling emissions), harborcraft, locomotives, and cargo handling equipment.

CARB's projections of future DPM emissions indicate that emissions and associated health risks will be reduced in West Oakland by about 80% by 2015, reflecting reductions achieved by State and Federal regulations. The Port undertook a more detailed examination of emissions reductions expected in the future from Port sources; this analysis is presented in Section 6.

Berth 30 (Trapac Terminal), 2003.

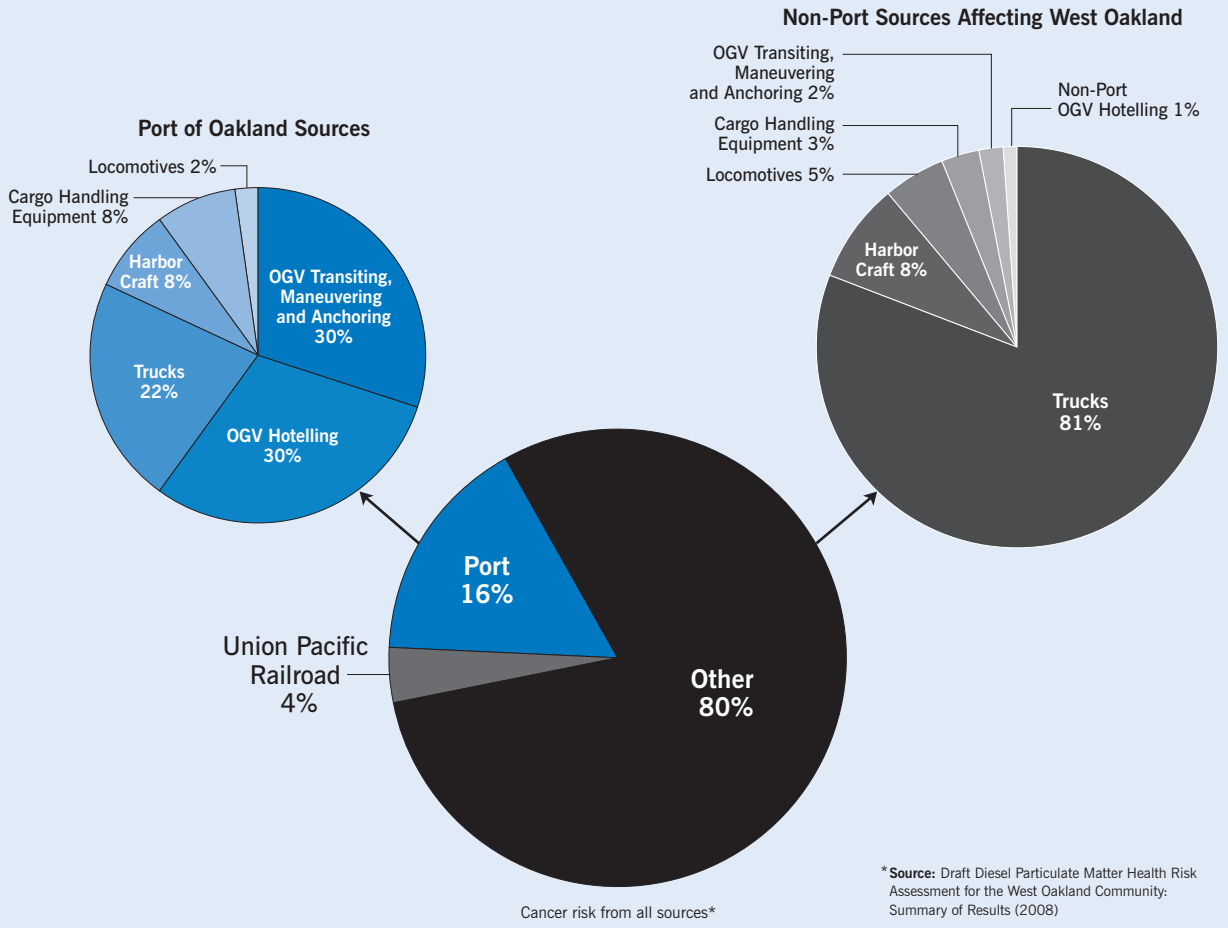
The results of the health risk assessment study reinforce the link between land uses and community health. With advice from members of the CARB Environmental Justice Stakeholders Group, CARB prepared "Air Quality and Land Use Handbook: A Community Health Perspective" (April 2005), which recommends considering limitations on the siting of new sensitive land uses, such as new residences, schools, day care centers, playgrounds, and medical facilities, in areas immediately downwind of ports. The handbook recommends:

> *Where possible, we recommend a minimum separation between new sensitive land uses and existing sources. However, this is not always possible, particularly where there is an elevated health risk over large geographical areas. Areas downwind of ports and rail yards are prime examples. In such cases, we recommend doing everything possible to avoid locating sensitive receptors within the highest risk zones.*[5]

The Port will continue to work with the City of Oakland and local developers to ensure that only appropriate land uses are located adjacent to the seaport area.

[5] CARB, 2005 "Air Quality and Land Use Handbook: A Community Health Perspective," April 2005.

Figure 5-1 Source Contributions to Diesel Particulate Matter Cancer Risk in West Oakland, 2005



Port of Oakland Future Emissions and Health Risk

MAQIP

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Section 6: Port of Oakland Future Emissions and Health Risk

While the Port's maritime business will likely grow through 2020 and beyond, some air emissions and health risk to West Oakland residents and workers from seaport activity are projected to decline dramatically due to existing and pending air quality regulations.

Because the expected benefits of regulations were central to the choice of MAQIP goals and to the plan's three-pronged approach (emissions reductions through regulations and through additional initiatives, and support for enforcement of regulations), it is important to see how those regulations can make a difference in future emissions associated with cargo activity. The Port analyzed its projections of future cargo for emissions, taking into account the benefits of existing and likely future regulations. The emissions data were in turn used to estimate future levels of health risk to the community resulting from seaport operations. By better understanding the potential reductions, the Port, its tenants and its business partners can more clearly manage the air quality impacts of operations at the seaport over the coming years and target additional measures, as necessary, to help reach the MAQIP goals.

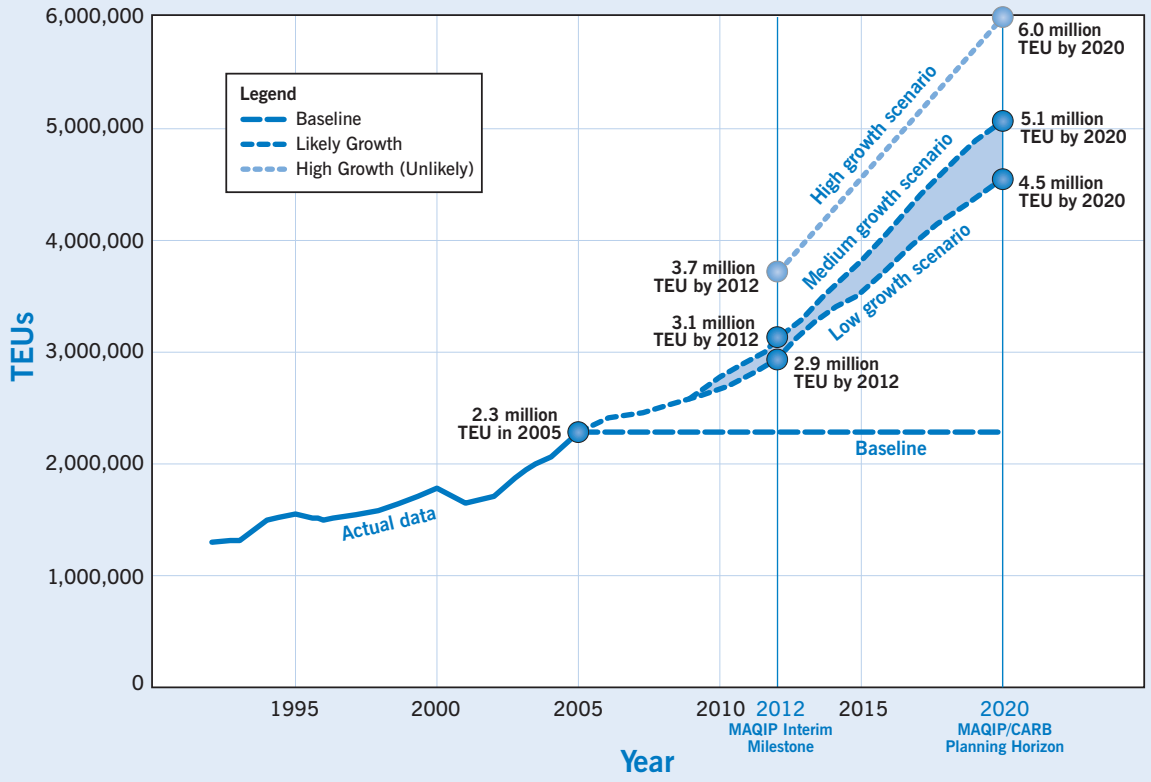
6.1 Future Cargo Activity Levels

Overall maritime activity at the Port is governed by market demand for international and domestic cargo movement into and out of Northern California and the availability of labor and critical physical assets such as terminal space and rail lines needed to meet the demand. To estimate future emissions, projections of the total annual cargo throughput at the Port resulting from the interplay of these governing factors are needed. The Port chose 2012 and 2020 as the forecast years for seaport activity to:

- Provide an estimate of interim (2012) emissions and emissions reductions
- Maintain consistency with CARB statewide emission projections, which are based on the year 2020

Due to uncertainties about future market conditions and development opportunities, four activity forecasts (high, medium, low and no growth) were considered, corresponding to different assumptions about future growth in seaport operations between the emissions baseline year of 2005 and 2020 (see **Figure 6-1**). These scenarios were developed expressly for the purpose of air quality master planning at the seaport, using a range of planning and feasibility assumptions about existing and potential future facilities. Given this planning context, the scenarios were developed using aggressive growth assumptions to limit the risk of underestimating future activity levels (and therefore emissions). The growth scenarios range from most aggressive (high growth) to least aggressive (low growth), and also include a no-growth alternative for comparison. None of the scenarios were reviewed or

Figure 6-1 Future Cargo Growth Scenarios, in Annual TEUs



approved by the Board of Port Commissioners for purposes of facility development, expenditure of funds or CEQA determinations. Furthermore, the scenarios do not replace or eliminate the need for project-specific forecast analyses or subsequent revisions to forecasts as more information becomes available between now and 2020.

Given the aggressive planning assumptions used for this forecasting effort, even the low growth scenario may somewhat overestimate the likely container cargo (as 20-foot equivalent unit, or TEU) throughput in both 2012 and 2020 in the absence of significant new terminal or rail facility construction. Similarly, the medium growth scenario may overestimate future throughput, even if new cargo facilities are constructed. The high growth scenario of 6 million TEUs is considered an upper bound that is very unlikely to be achieved by 2020, and approximates the maximum possible throughput at the Port based on logistical and capacity constraints, assuming construction of all necessary terminal and rail facilities. These forecast scenarios were developed prior to the national and international economic downturn in 2008, and may be overly optimistic representations of future cargo growth.

Given the need to balance business and public health considerations, the Port chose the medium growth scenario for the MAQIP projections since it is unlikely to underestimate future activity levels and resulting air emissions. Therefore, all forecasted emissions and reductions throughout the MAQIP are based on the medium growth scenario.

Forecasts of activity past 2020 are subject to even higher levels of speculation and uncertainty, thus making emission estimates past that year unsuitable for air quality planning. Activity and emission forecasts can be updated when more accurate information on post-2020 growth projections becomes available.

The growth in cargo throughput will result in increased activity by the various sources of air pollution at the Port. Some categories will grow faster than others. The relative growth of activity by trucks, rail and the other emissions source categories under the medium growth scenario is shown graphically in **Figure 6-2**. Although rail activity shows the highest relative growth in the years 2012 through 2020, rail shipments accounted for a relatively small fraction of total TEUs in the 2005 base year. Trucks will continue to move most containers to and from markets outside the Port area well into the future, although rail transport of cargo containers between the Port and more distant markets is expected to take an increasing share over the years. The projected market shares for off-port truck and rail movements based on the medium growth scenario are provided in **Figure 6-3**.

Figure 6-2 Forecasted Rate of Growth of Seaport Activity by Source Category, 2005-2020 (Medium Growth Scenario)

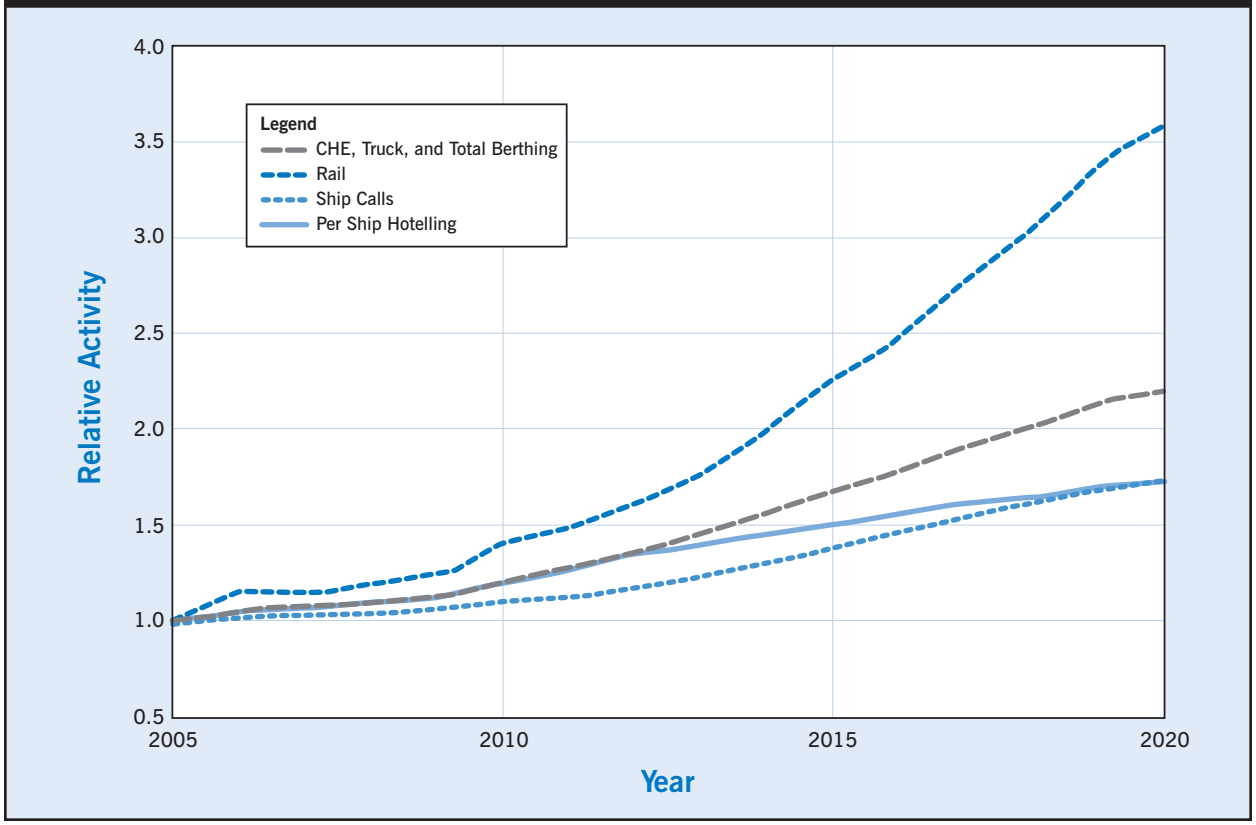
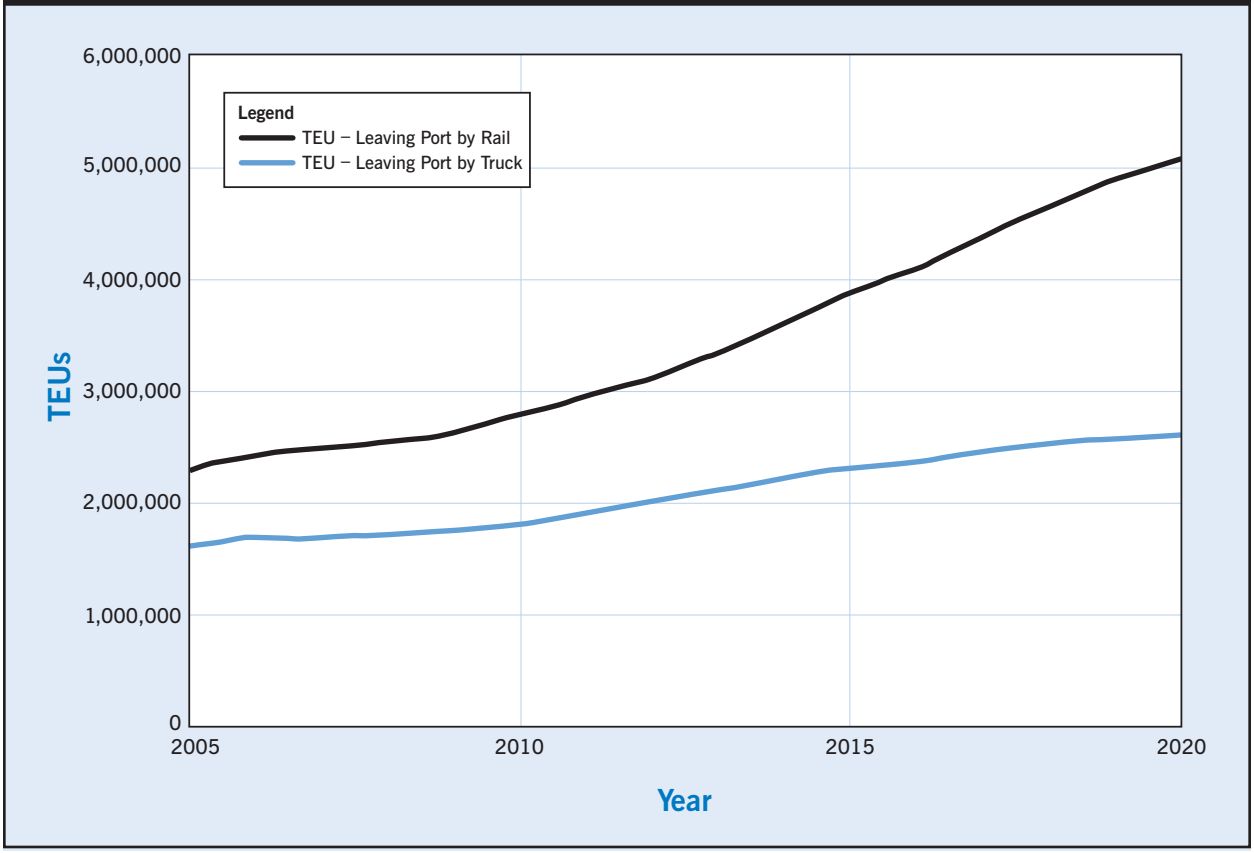


Figure 6-3 Truck and Rail Forecast, in Annual TEUs (Medium Growth Scenario)



6.2 Future Emissions

Using the activity projections in Section 6.1, the Port developed forecasts of emissions for 2012 and 2020 for each major category of equipment used in seaport related activities (OGVs, harborcraft, cargo handling equipment, trucks and rail), incorporating expected changes due to existing and likely future air quality regulations. The forecasts show that current regulatory efforts are expected to yield substantial PM and SOx emission reductions in 2012 and 2020 relative to 2005 despite the considerable growth in cargo throughput projected under the medium growth scenario for this period.

A summary of estimated future year (2012 and 2020) emissions of NOx, PM, and SOx from the source categories located at the Port is presented in Table 6-1. Graphical summaries of projected PM, NOx, and SOx emissions are presented in Figure 6-4. Since emissions from sources located off-shore pose less of a risk to West Oakland and other communities near the Port than do similar levels of emissions from sources located on land or at the shoreline, all emissions in Table 6-1 are also presented in terms of off-shore and on-shore sources. Off-shore sources include OGV main and auxiliary engine and boiler emissions while transiting between the open ocean and the Bay Bridge, while maneuvering between their berths and the Bay Bridge and while anchoring off-shore of the Port, along with all harborcraft emissions.[1] On-shore sources include OGV auxiliary engine and boiler emissions while hotelling at berth and all cargo handling equipment, truck, and rail sector emissions.

[1] All harborcraft at the Port of Oakland are assumed to shut off their engines while at berth.

Table 6-1 Port of Oakland Baseline and Projected Emissions for All Source Categories, Based on Regulations, in Tons per Year (Medium Growth Scenario)[a]									
	2005			2012 Forecast[c]			2020 Forecast[c]		
Emission Source[b]	NOx	PM	SOx	NOx	PM	SOx	NOx	PM	SOx
Total Off-Shore % Change from 2005	2,062	172	953	2,301 (+12%)	175 (+2%)	926 (-3%)	3,018 (+46%)	56 (-67%)	73 (-92%)
OGV – Off-Shore	1,717	158	950	2,013	163	924	2,821	48	73
Harborcraft	345	13	3	287	13	2	198	8	0
Total On-Shore % Change from 2005	1,948	102	475	1,964 (+1%)	36 (-65%)	32 (-93%)	1,375 (-29%)	20 (-81%)	19 (-96%)
OGV – Berth	767	61	464	1,008	19	30	529	11	17
CHE	766	22	7	427	11	1	226	4	2
Truck	339	17	2	422	4	0.3	405	2	0.4
Locomotive	76	2	2	107	2	0	215	3	0
Grand Total % Change from 2005	4,010	273	1,428	4,265 (+6%)	211 (-23%)	958 (-33%)	4,394 (+10%)	76 (-72%)	92 (-94%)

Note: This table was revised subsequent to the June 2008 Draft MAQIP document due to: a change in CARB's main engine low-sulfur fuel rule to include requirements for using low-sulfur fuel in ship boilers; an error in double-counting the benefit of the auxiliary engine low-sulfur fuel rule while transiting and maneuvering; and minor transcription errors. Totals may differ slightly due to rounding.

[a] Results for the medium growth scenario are presented here; results for the no growth, low growth and high growth scenarios, and for ROG and CO for all scenarios, can be found in Appendix G.

[b] Construction emissions are not included in this table because future construction estimates are not available. For 2005 construction estimates, see Table 5-1.

[c] All existing and likely regulations from Table 6-2 are included in the forecasts.

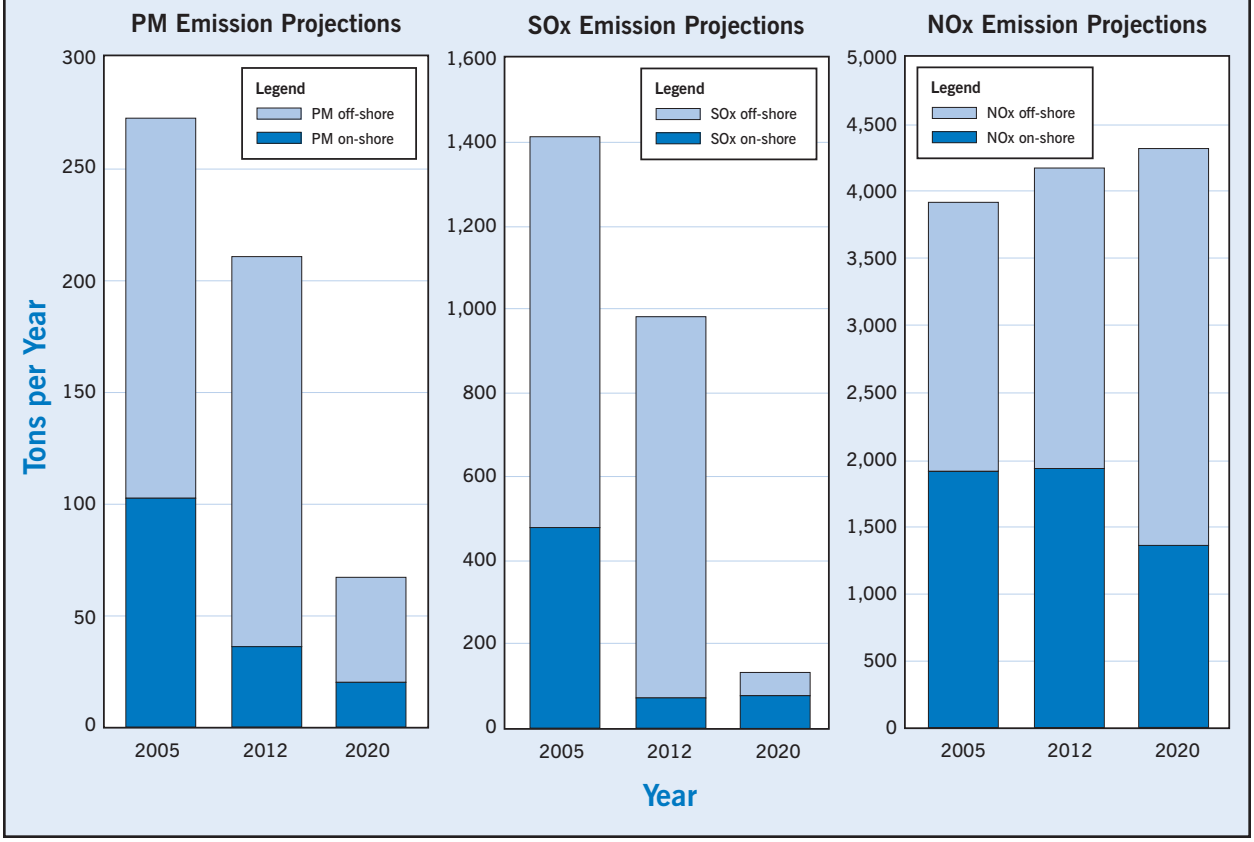
Projections of all pollutants, including ROG and CO, for each of the activity forecasts of baseline, low, medium and high cargo growth are provided in Appendix G.

These emission projections were developed by:

- Taking emission-generating activities included in the 2005 baseline inventory described in Section 5
- Increasing them in accordance with estimates of future growth in cargo throughput, using the medium growth scenario described in Section 6.1
- Applying estimates of emission reduction benefits expected from both continued implementation of current regulations (for example, regulations requiring that new replacement trucks use cleaner engines) and implementation of certain future Federal and State rules (such as CARB's proposed ocean-going vessel main engine low-sulfur fuel rule) that are likely to be implemented by 2020.

The forecast of future emissions shown in Table 6-1 and Figure 6-4 do not estimate emissions reductions from actions above and beyond regulatory requirements; see Sections 7 and 9 for a discussion of air quality goals and potential initiatives that address reductions beyond those provided by regulations. In addition, the forecasts do not include construction equipment emissions. Construction activity varies from year to year, so there is no reliable means of predicting construction emissions for specific future years. Based on the Port's "2005 Seaport Construction Air Emissions Inventory," those emissions are not expected to be significant.

Figure 6-4 Projected Emissions for On-shore and Off-shore Sources (Medium Growth Scenario)



Major regulations impacting these emission forecasts are listed in Table 6-2. The selection of which upcoming regulations are "likely," and therefore included in the forecasts, is somewhat subjective. With few exceptions, the regulations listed in the table were adopted into law, though most of their reduction requirements will not be fully effective for several years.

As shown in Table 6-1, the forecasted emissions reductions due to regulations for on and near-shore sources are larger than the reductions for off-shore sources, reflecting:

- The difficulty and uncertainty around the control (including regulation) of some off-shore sources, particularly OGVs
- The regulatory and public health focus on reducing emissions that occur closest to people and that can be expected to contribute more to health risk than off-shore emissions.

On-shore NOx emissions are forecast to decline by 2020, while off-shore NOx emissions increase due to gains in OGV activity and a lack of OGV NOx control requirements, resulting in an overall increase in total NOx emissions.

Table 6-2 Major Regulations Included in Future Year Emission Forecasts			
Source Category	**Existing and Likely Regulations**	**Included in 2012 Forecast**	**Included in 2020 Forecast**
Ocean-Going Vessels (OGV)	California low-sulfur limits for fuel in OGV auxiliary engines[a]	•	•
	California low-sulfur limits for fuel in OGV main engines		•
	State shoreside power requirements for OGV		•
Harborcraft	Federal Tier 3 and 4 emission standards for marine engines		•
	State harborcraft engine rule	•	•
Cargo Handling Equipment (CHE)	State and Federal standards for new off-road engines and fuel	•	•
	State rulemaking for cargo handling equipment	•	•
Port Container Trucks	Federal and State new engine emission standards	•	•
	State port trucks rule	•	•
	State Heavy-Duty (In Use) Commercial Trucks rule		•
Locomotives	Statewide/Railroad agreement to limit locomotive idling (railyard MOU)	•	•
	Federal retrofit and new Tier 3 and 4 locomotives engine standards	•	•

[a] As of May 7, 2008, enforcement of this rule was suspended pursuant to a federal district court order. A new rule covering low-sulfur limits for fuel in both main and auxiliary OGV engines was adopted in July 2008. Some carriers have been voluntarily continuing to comply with the auxiliary engine rule requirements.

The emission projections presented in this section are subject to some uncertainties, including:

- Only existing regulations and those anticipated ("likely") future regulations about which sufficient information is available for analysis, could be incorporated into the projections. It was not possible to estimate benefits from other potential future regulations, including additional proposed regulations described in CARB's Goods Movement Emission Reduction Plan.
- Some regulations included in this analysis were or may be subject to legal challenges.
- Interpretation of how "likely" implementation is of the various regulations governing seaport sources of emissions is somewhat subjective. For example, the OGV main engine low-sulfur fuel rule was still under development at the time of this analysis and the regulatory language was subject to change.
- The air quality improvements of some regulations rely on full-scale implementation of new procedures and technologies that have not yet been applied under "real world" conditions.
- Historically, economic forces result in gradual improvements to the efficiency of container movement through the Port (faster crane movements and increased use of 40-foot containers). Over time, similar gains in efficiency could lead to emission reductions, due, for example, to shorter berthing times and fewer lifts per TEU. Efficiency gains were not taken into account in the above analysis because the magnitude and timing of the gains, and therefore the emissions reduction, are too difficult to predict.

6.3 Relationship between Emissions and Health Risk

As discussed in Section 5.2, CARB released the "Draft Diesel Particulate Matter Health Risk Assessment for the West Oakland Community: Preliminary Summary of Results" in March 2008 and finalized it in December 2008. A key part of this health risk assessment (HRA) study deals with the estimation of cancer risk associated with emissions from the maritime operations on and around Port property.

Cancer health risk is usually expressed as the estimated number of potential excess cases of cancer per million people exposed. The risk can also be formulated in terms of the incremental cancer risk per ton of DPM emitted from each source category. For example, the HRA results indicate that the 61 tons per year of DPM emitted from ocean-going vessel auxiliary engines while vessels are docked at their berths (berthing or hotelling emissions) at the Port result in a population-weighted average excess lifetime cancer risk in West Oakland of 57 per million. Thus, the excess cancer risk per ton of emissions can be expressed as a ratio, 57 cancers divided by 61 tons, which equals 0.9. These incremental risk factors were calculated by CARB for each emissions source category and are shown in Table 6-3.

Oakland Estuary, circa 1970.

Table 6-3 PM Emissions and Associated Cancer Risk in 2005 and 2020 (Projected, Based on Regulations only)

Source Category[a]	Incremental Risk Factor[b] (Excess cancer cases in 1 million/ton of PM)	PM Emissions (tons)		Cancer Risk (Excess cancer cases in 1 million)		Reduction in Cancer Risk
		2005	2020[c]	2005	2020	2005 to 2020
Total Off-Shore		172	56	78	28	-64%
OGV-Transit and Maneuvering	0.4	156	48	62	19	
OGV-Anchor	0.4	2	0.7	0.8	0.3	
Harborcraft	1.1	13	8	15	8	
Total On-Shore		102	20	109	22	-80%
OGV-Berthing	0.9	61	11	55	10	
Cargo Handling	0.7	22	4	15	3	
Truck	2.1	17	2	35	4	
Rail	2.0	2	3	4	6	
Total		273	76	187	50	-73%
Port-Wide Health Risk Reduction Goal, 2005 to 2020						-85%

Note: This table was revised subsequent to the June 2008 Draft MAQIP document. See note for Table 6-1. Totals may differ slightly due to rounding.

[a] Construction activity is not included in this calculation since it varies from year to year and no estimates are available for 2020 construction emissions; for 2005 construction estimates, see Table 5-1. CARB's study did not estimate health risks from on-Port construction activities.

[b] Population-weighted average excess cancer risk due to DPM exposure per ton of DPM emitted as calculated by CARB (see Section 5.2).

[c] Emissions for 2020 are based on the medium growth scenario for the projection with all current and likely future regulations implemented. PM is substituted for DPM, since the emissions are essentially equivalent (see footnote on Table 5-1). These risk projections are based on the current spatial distribution of emissions, which may change over time.

Incremental risk factors are higher for some categories than for others, reflecting the fact that sources like on-road trucks that typically operate within highly populated urban areas result in greater exposure (and therefore risk) per ton of DPM released than sources like OGVs and harborcraft that are typically located further away from residents. The incremental risk factors from the CARB report provide a basis for comparing the impact of various source categories at the Port both in 2005 and in the future.[2] For example, in 2005 each ton of DPM from on-road trucks serving the Port is estimated to correspond to an increment of about 2-in-a-million in the potential cancer risk in the West Oakland community. This incremental risk factor is more than twice the risk per ton of OGV berthing emissions. Of all Port sources, on-road trucks generate the greatest potential cancer risk per ton of diesel PM emissions, followed by locomotives, harborcraft, OGV berthing, cargo handling equipment, and off-shore OGV activity.

[2] Incremental risk factors from different source categories are most appropriately interpreted in terms of their relative size rather than as a measure of the absolute amount of community cancer risk associated with a given level of emissions.

The excess cancer risk resulting from Port operations in 2012 and 2020 can be estimated by applying the incremental risk factors to projected DPM emissions for those years. Results of this calculation are shown in Table 6-3. The table shows that cancer risk to West Oakland community members from maritime DPM emissions is expected to be reduced dramatically from 2005 levels as a result of the projected reductions in seaport emissions due to current and proposed state and federal air quality regulations identified in Table 6-2.

Overall cancer risk is estimated to be 73% lower in 2020, while cancer risk from on-shore sources is reduced by 80%, in part due to the greater availability of cleaner engine technology for trucks, locomotives and terminal yard equipment. As stated in the "Port of Oakland Maritime Air Quality Policy Statement," the Port's goal is to reduce overall cancer risk by 85% in 2020. The Port will continue to target emissions reductions above and beyond those required by law to reach that goal by 2020.

Port of Oakland aerial, 2002.

Air Quality Improvement Goals

MAQIP

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Section 7: Air Quality Improvement Goals

Two types of goals are included in this air quality master plan: broadly stated planning goals to reduce the Port's impact on public health and ambient air quality, and explicit numerical targets for reductions of specific pollutants for future years.

7.1 Health Risk and Air Quality Goals

The centerpiece planning goals of the MAQIP that will guide the selection of specific air quality improvement projects and that will ultimately measure its success as an air quality master plan are:

Goal 1: Reduce the adverse public health impacts of the Port's seaport-related air emissions on workers in the maritime area and on residents in the neighboring communities that are most affected by goods movement at the seaport (in particular West Oakland), as expeditiously as feasible.

Goal 2: Reduce the adverse impacts of the Port's seaport-related air emissions on ambient air quality in West Oakland and more generally in the San Francisco Bay Area Air Basin, as expeditiously as feasible.

To support these goals, the Board of Port Commissioners on March 18, 2008, adopted the Air Quality Policy Statement and "early actions" to Reduce Air Pollutant Emissions and Related Human Health Risk (see Appendix H). This action commits the Port to a goal of reducing the community's excess cancer risk attributable to DPM emissions from seaport sources by 85% between 2005 and 2020 by taking all feasible measures to reach the goal, with an emphasis on early actions.[1] While the longer-term goal to achieve an 85% reduction in health risk is key, the early action focus is equally important, with the opportunity to reduce health risk even earlier than the regulatory schedule by reducing the duration of exposure of neighborhood residents to harmful emissions.

During development of this plan, CARB's West Oakland Health Risk Assessment was still under development, so the precise relationship between emissions and risk was not known. Therefore, the Port and Task Force assumed a one-to-one correspondence between emissions and risk, consistent with CARB's own state-wide planning assumptions. Under this assumption, an 85% reduction in emissions yielded an 85% risk reduction. Therefore, the Port's goal is consistent with CARB's statewide goal of an 85% reduction in health risk from DPM from goods movement activities between 2001 and 2020.

[1] The baseline data that will be used to measure the Port's progress toward this goal are the "Port of Oakland 2005 Seaport Air Emissions Inventory" (2007, revised 2008) and the California Air Resources Board's "Diesel Particulate Matter Health Risk Assessment for the West Oakland Community: Preliminary Summary of Results" (March 2008 and subsequent revisions).

7.2 Emission Reduction Goals

In support of the health risk and ambient air quality goals, the Port and the MAQIP Stakeholder Task Force established interim (2012) and longer term (2020) emission reduction targets for specific air pollutants (PM, SOx, and NOx) by emissions sources, as summarized in Table 7-1. These goals are based on a "medium" growth scenario for Port cargo (Figure 6-1).[2] In setting these emission reduction goals, a distinction was made between off-shore emission sources (ships underway and harborcraft activity) and on- and near-shore sources (other maritime sources, including ships at berth). By setting separate goals for off-shore sources, it was possible to take into account the challenges associated with reducing emissions from these sources (see Section 7.3). In addition, while off-shore sources represent a large fraction of Port emissions, they are potentially of less concern from a community health risk perspective than on- and near-shore sources since they are located further away from populated areas. Emissions from equipment sources within the on- and off-shore categories may not be reduced uniformly, and some may even increase. Therefore, the goals are based on emissions reductions within each category.

The 2012 interim goals are equal to the forecasted emissions reductions from the Port's medium growth scenario (Table 6-1), recognizing that in the short term (2008 to 2012), reductions beyond those resulting from regulations will be difficult to achieve. Therefore, for the short term, the Port's primary focus is on early compliance with regulations ("early actions") where feasible so that emissions and risk can be reduced more quickly than mandated, and on supporting compliance with regulations as they take effect.

The 2020 goals assume that CARB's port emissions reduction regulations and federal engine standards (Table 6-2) are successfully implemented. These goals go beyond the benefits of those regulatory measures, however, and set higher reduction targets. The additional reductions needed to meet these goals will come from feasible emissions reductions measures employed by the Port, its tenants and business partners. The 2020 goals are clearly ambitious and seek to achieve reductions beyond those forecasted under medium growth. The Port's forecasted emissions reductions for 2020 from Table 6-1, based on a medium growth business scenario with implementation of regulations, are included in Table 7-1 to allow a comparison between the goals and the forecast. The table includes a column identifying the additional PM, SOx and NOx reductions needed by 2020 to meet the Port's goals for on- and off-shore port-related sources.

These quantitative emissions reduction goals can be used to guide the design and selection of future initiatives, and can later serve as a measure of progress in implementing the air quality plan.

[2] Several commentors recommended changing the 2012 and 2020 emissions reduction goals to be more protective of human health or to be consistent with the amendments to MARPOL Annex VI. Further discussion with stakeholders would be required prior to revising the goals. The goal-setting rationale is explained in this section.

Table 7-1 Port of Oakland Emissions Reduction Goals and Forecasted Reductions				
	Percentage Change from 2005[a]			
Pollutant by Port Source	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's Air Quality Policy Statement goal is derived from these DPM goals.

7.2.1 DPM Reduction Goals

Given the emphasis by the Port's air quality policy, by regulators and by the community on reducing risk due to DPM exposure, the emission reduction goals are oriented towards achieving the greatest possible reductions in DPM emissions. The combined on- and off-shore DPM emissions reductions currently forecasted for 2020 is 73%.

DPM Goal 1: By 2012, reduce on- and near-shore DPM from Port activities by 65% from the baseline 2005 emissions level.

DPM Goal 2: By 2020, reduce on- and near-shore DPM from Port activities by 85% from the baseline 2005 emissions level.

DPM Goal 3: By 2012, minimize the increase in off-shore DPM from Port activities to 2% over the baseline 2005 emissions level.

DPM Goal 4: By 2020, reduce off-shore DPM from Port activities by 85% from the baseline 2005 emissions level.

Berth 30 (Trapac Terminal), 2002.

7.2.2 SOx Reduction Goals

Methods used to reduce DPM have the added benefit of also reducing oxides of sulfur (SOx) emissions, thus reducing exposure to both SO_2 and sulfate aerosols.

SOx Goal 1: By 2012, reduce on- and near-shore SOx from Port activities by 85% from the baseline 2005 emissions level.

SOx Goal 2: By 2020, reduce on- and near-shore SOx from Port activities by 85% from the baseline 2005 emissions level.

SOx Goal 3: By 2012, reduce off-shore SOx from Port activities by 3% from the baseline 2005 emissions level.

SOx Goal 4: By 2020, reduce off-shore SOx from Port activities by 94% from the baseline 2005 emissions level.

7.2.3 NOx Reduction Goals

DPM reduction technologies provide a relatively small concurrent benefit with respect to NOx reductions. As a result, the NOx emission goals allow for a small increase in NOx by 2012 to accommodate the growth forecast under the medium Port growth scenario as shown in Figure 6-1. By 2020 the goal is to reach a nearly 35% reduction from on- and near-shore sources. This reduction will be achieved largely by the introduction of shore power for OGVs when at berth and by the introduction of new, cleaner engines for cargo handling equipment, trucks, and locomotives. A specific goal for reduction of NOx emissions from off-shore sources by 2020 has not yet been defined due to uncertainties about the ability of regulators or the Port to reduce NOx emissions from OGVs. Note that simply making improvements to the composition of fuel used in OGV engines, while producing significant PM and SOx reductions, has little impact on NOx emissions.

NOx Goal 1: By 2012, minimize the increase in on- and near-shore NOx from Port activities to 1% over the baseline 2005 emissions level.

NOx Goal 2: By 2020, reduce on- and near-shore NOx from Port activities by 34% from the baseline 2005 emissions level.

NOx Goal 3: By 2012, minimize the increase in off-shore NOx from Port activities to 12% over the baseline 2005 emissions level.

NOx Goal 4: By 2020, reduce off-shore NOx from Port activities by an amount still to be determined, compared to the baseline 2005 emissions level.

7.3 Challenges

The Port's air quality improvement goals outlined in this plan face a number of challenges, including:

- New emissions reduction regulations adopted and proposed by CARB, in particular, are extremely aggressive in their implementation schedules and technological requirements. Some types of equipment may not become available when expected, may not be affordable or may not be as cost-effective as anticipated. Technological, economic or legal factors may result in suspension or postponement of certain requirements or deadlines.
- Due to their reliance on best available control technology and on early turnover of equipment, the new regulations do not leave much room for voluntary actions that produce additional emissions reductions, at least in the near term. Furthermore, achieving full compliance with each regulation may be difficult, so enforcement will be key to achieving the targeted reductions. Therefore, one of the Port's primary air quality strategies is to support enforcement agencies by working with tenants and customers to promote compliance.
- Some CARB regulations, such as the Ocean-Going Vessel Auxiliary Diesel Engine regulation that became effective on January 1, 2007, have already been successfully challenged through the legal system, and other regulations may be contested as well. There is a possibility that the Port may also be challenged in trying to achieve reductions beyond those required by law.

- Since the development of the MAQIP and the Board's action, the preliminary results of the West Oakland HRA have been published and detail a more specific relationship between emissions and risk (**Table 6-3**). The HRA indicates that even more ambitious emissions reductions may be needed to reach the MAQIP risk reduction goals than anticipated during plan development and since adoption of the Port's maritime air quality policy.

- Emission reductions from ocean-going vessels are particularly challenging from a implementation standpoint as well as a legal perspective since ocean-going vessels calling at the Port are nearly all international flagged and are not readily subject to local, state or even federal regulations. Achievement of substantial ship emissions reductions may require designating an Emission Control Area (ECA) that includes California, or even the entire North American continent. This effort would take the combined resources of the EPA and CARB, with the support of the Port and other West Coast ports.[3]

Berths 55-56 (Hanjin Terminal) from Middle Harbor Shoreline Park, 2008.

[3] Recommended by John McLaurin, Pacific Merchant Shipping Association, July 14, 2008.


Emissions Reduction Strategies
MAQIP
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Section 8: Emissions Reduction Strategies

To achieve the MAQIP health risk reduction goals, emissions reductions from seaport operations must occur through both regulatory compliance and additional actions by Port tenants and customers. Therefore, the Port is committed to a three-fold emissions reduction strategy:

- Target emissions reductions earlier than required by regulations ("early actions")
- Support enforcement of regulations
- Target emissions reductions above and beyond those required by law.

Emissions reductions—whether early action, "above and beyond" or regulation-driven—can be achieved through three general approaches:

Source Control: These can be voluntary actions or regulatory requirements. CARB's regulations generally target reductions through technological means, or source controls. Early actions on the part of the regulated community can promote accelerated emissions reductions.

Operational Changes: A non-regulatory approach to even greater levels of emissions reduction works through operational changes in the port industry that increase efficiency or otherwise reduce fuel usage.

Regulatory Compliance: Promoting a high level of compliance with enacted regulations ensures that all possible reductions can be achieved.

The Port is committed to pursuing specific emissions control measures and strategies using the approaches described above, within the context of its overall emissions reduction strategy. The specific measures are described in Section 8.4.

8.1 Source Controls

A limited number of control technology approaches are available to reduce emissions from Port-related source categories, including ships, harborcraft, cargo handling equipment, trucks and trains. The basic choices are:

- Switching to cleaner fuels or other means of powering equipment
- Retrofitting existing equipment with emissions-control devices
- Replacing existing equipment with newer, cleaner equipment

While all of the control technologies lead to air quality benefits, they vary in terms of the level of emissions reduction, ease of implementation, and total cost. For example, while ultra-low-sulfur diesel, which was introduced throughout California and the United States in 2006, was usable in nearly all on-road engines, the cleanest fuels (such as electricity and LNG) generally cannot be used in existing engines, and require new engines or equipment, along with a dedicated fueling infrastructure.

Table 8-1 Summary of Diesel Emissions Control Technologies

Source Category	Owner or Operator	Fuels	Retrofit	Replacement
OGV (Ships) – Main Engines	Carriers	Low-sulfur fuels, emulsified fuels (fuel-water mix)	Install pollution control systems (e.g. selective catalytic reduction), engine modifications	New engine standards, accelerate old engine retirement
OGV (Ships) – Auxiliary Engines	Carriers	Low-sulfur fuels, emulsified fuels, use grid power or portable clean generators while berthed	Pollution control systems (e.g. selective catalytic reduction), engine modifications, exhaust after-treatment (hood)	New engine standards, accelerate old engine retirement
Harborcraft (Tugs)	Tug companies	Low-sulfur fuels, emulsified fuels, biodiesel, use grid power or portable clean generators while berthed	Pollution control systems (e.g. selective catalytic reduction), engine modifications	New engine standards, accelerate old engine retirement
Cargo Handling Equipment	Terminal operators and railroads	Low-sulfur fuels, emulsified fuels, biodiesel electric hybrids, fuel cell technologies, LPG/LNG	Pollution control systems (diesel oxidation catalysts, diesel particulate filters)	New engine standards, accelerate old engine retirement
Trucks	Trucking companies and independent operators	Low-sulfur fuels, emulsified fuels, biodiesel LPG/LNG	Pollution control systems (diesel oxidation catalysts, diesel particulate filters)	New engine standards, accelerate old engine retirement, LPG/LNG powered equipment
Railyards (Primarily Switching Locomotives)	Railroads	Low-sulfur fuels, emulsified fuels, biodiesel	Engine modifications, idle limiting devices	New engine standards, accelerate old engine retirement, diesel-electric hybrids, generator set (genset) switching engines
Construction Equipment	Construction firms	Low-sulfur fuels, emulsified fuels, biodiesel	Pollution control systems (diesel oxidation catalysts, diesel particulate filters), engine modifications	New engine standards, accelerate old engine retirement

Table 8-1 summarizes examples of emission control technologies that can potentially be applied to Port-related sources of diesel emissions. Most of the control technologies are already required or will be required in the near future by state and federal regulations, although some are still in development. It is anticipated that new technologies, especially those controlling ship emissions, will be developed over the next decade as new ships are built and as more stringent regulations compel technological solutions.

Regulations generally require the owners and operators of Port-related sources to apply one or more control technologies to reduce emissions of DPM, NOx and other pollutants. These regulations are rigorous and do not leave much room for additional emissions reductions. Achieving the intended emissions reductions benefits will require enforcement by regulatory agencies including CARB and BAAQMD, with cooperation from the Port.

8.2 Operational and Design Efficiencies

In addition to equipment control technologies, operational changes can potentially improve the efficiency of Port operations and simultaneously reduce emissions. Emissions reductions are achieved by reducing the amount of activity required to move containers through the Port and within or near local neighborhoods. Some reductions can be achieved with regulations, such as restrictions on truck and locomotive idling time, but most activity reduction stems from maritime-related businesses investing in more efficient equipment or operations. For example, the Port's Joint Intermodal Terminal, which provides near-dock rail access, was estimated to take 20,000 truck moves off I-80 when it began operating in 2002. Other examples of operational and design efficiencies that could be considered by the Port terminal operators, carriers and other tenants and maritime businesses include:

- The "virtual container yard" describes various information technologies that track the whereabouts and status of containers inside and outside the Port area. This system could allow more efficient use of container trucks by reducing the number of one-way trips made while empty.
- "Crane double cycling" describes a more efficient use of large electric cranes and other yard container equipment. Cranes typically unload and load vessels in separate operations. To the extent a crane can unload and load simultaneously, it can save time and vehicle emissions.
- Improvements in container yard layout and technology within a terminal can lead to faster cargo processing, thereby reducing the number of in-yard container movements. That means less waiting time for trucks, less truck idling and reduced emissions.
- Radio frequency identification (RFID) or other technologies on Port trucks can also result in less waiting time and idling by allowing terminal operators to track arriving trucks and prepare for the container pick-up or drop-off.
- "Chassis pooling," a form of equipment sharing, is another means of increasing efficiency. Participating shipping lines provide their own chassis for use by the pool, which can be managed and maintained by a subsidiary of the participating terminals or a third party. This approach allows drayage trucks to use pooled chassis to serve multiple carriers and reduces gate turn-times. Pooled chassis can also facilitate the implementation of virtual container yards.

8.3 Regulatory Compliance and Enforcement[1]

Since education and enforcement are key to the success of air quality regulations, the Port intends to collaborate with CARB and the BAAQMD in their enforcement efforts. The Port will:

- Coordinate with the agencies as they develop enforcement protocols for adopted port regulations
- Provide or participate in forums to educate maritime tenants on the regulations
- Remind tenants of regulatory compliance and reporting deadlines
- Coordinate with agency partners in designing and implementing incentive programs for tenants and maritime-related businesses to promote early actions to meet regulatory goals in advance of deadlines

An overview of the Port's legal authority regarding enforcement can be found in Section 10.1.

Berths 57-59 (Oakland International Container Terminal), 2004.

[1] This is a new section in the Final MAQIP, prepared in response to many of the commentors on the Draft MAQIP, who asked for more detail on specific strategies and implementation plans.

8.4 Port of Oakland Control Measures and Strategies

An extensive analysis of strategies to reduce emissions from port sources was provided in CARB's "Emissions Reduction Plan for Ports and Goods Movement in California" (2006),[2] with updates in CARB staff's regular reports to the Board members. Most of the CARB strategies rely on implementation of state or federal regulations over the next decade to achieve the state's air quality health risk reduction goal. Summaries of those regulations are provided in Table 4-2 and in Appendix E.

The Port reviewed the strategies in the MAQIP air quality improvement initiatives (Section 9) and in CARB's Emissions Reduction Plan, along with emissions reduction strategies adopted by other ports, in light of the characteristics of the Port's maritime business, the Port's emissions and health risk profiles (Sections 5 and 6) and the Port's ongoing and planned emissions reduction programs and projects (Section 9). The Port developed the set of current control measures in Table 8-2 based on all of these factors.

Table 8-2 Port of Oakland Emissions Control Measures and Strategies

Control Measures and Strategies	Implementation
Early action retrofit and/or replacement of port drayage trucks	Outreach, grant or other funding as available, or other implementation strategy, in cooperation with CARB and BAAQMD
Compliance with CARB's "shore power"[a] regulation	• "Shore Power" Program • Pursue early actions through incentives, grant or other funding, lease or other implementation strategy, CEQA
Design and operational efficiencies	Voluntary, incentives, lease or other implementation strategy, CEQA
Participate in pilot and verification projects for NOx and DPM reduction strategies	Voluntary, incentives, in cooperation with CARB and BAAQMD
Early action construction emissions reduction	Incentives, project specifications
Support enforcement of regulations by CARB and BAAQMD through coordination with tenants	Workshops, notices of deadlines, coordination on enforcement protocols
Accountability, monitoring and reporting	Stakeholder group, status reports, emissions inventories, MAQIP Interagency Group, reconsideration of strategies (5 year intervals)

[a] "Shore power" refers to CARB's "Regulations to Reduce Emissions from Diesel Auxiliary Engines on Ocean-Going Vessels While at Berth at a California Port," even though the regulation allows for emissions reduction measures other than a shore power system. The term "shore power" used here does not assume any particular technology.

[2] CARB's "Emissions Reduction Plan for Ports and Goods Movement in California" (2006) and staff updates are available at: http://www.arb.ca.gov/planning/gmerp/gmerp.htm

8.4.1 Details of Control Measures and Strategies

More detailed descriptions and target dates[3] of the Port's control measures and other strategies in the MAQIP's Table 8-2 are provided in this section. As specific air quality programs and projects are developed for these control measures, more details regarding timelines, implementation, emissions reduction benefits, resources, etc. will become available. Updates of this project-specific information will be provided to the Board and public periodically through status reports. Proposed amendments (i.e., material changes) to the MAQIP plan itself, including control measures and policy direction, will be in the form of Supplements, subject to Board consideration and approval.

Through MAQIP Supplement No.1 (Appendix L), an expanded measure was added to reiterate the Port's support of CARB's drayage truck regulation, in response to a recommendation by the MAQIP Interagency Group. Other actions proposed by the Interagency Group were added to some existing control measures, and additional detail on the current implementation schedule and approach was provided where available.

Early Action Retrofit and/or Replacement of Port Drayage Trucks

The Port will cooperate with BAAQMD and CARB in a program to retrofit port drayage trucks according to the following schedule:

By December 31, 2009: Retrofit model year 1994 through 2003 trucks with available BAAQMD and CARB grant funds and with Port funds. The BAAQMD may use some of the funds to target truck replacements (meeting 2007 engine standards). The Port will apply for grant funds, where feasible, in cooperation with the BAAQMD.

2009 – 2013: Promote early implementation of 2007/2010 truck engine standards.

Support of CARB's Drayage Truck Regulation

The Port is committed to an achievable plan for diesel truck clean-up that ensures that trucks serving the Port are in compliance with CARB regulations[4].

To implement the plan, the Port will: (i) pursue funding mechanisms and other programs (e.g., federal and state grants and loan assistance) to assist drayage truck owners, (ii) implement a truck registry, (iii) conduct outreach, and (iv) complete the CTMP as follows:

March 2009 – December 2013: Pursue funding programs to assist drayage trucker owners in retrofitting, repowering or replacing trucks to meet the drayage truck regulation deadlines for 2010 and 2014. A potential funding source that the Board may consider is a user fee.

May/June 2009: Present the final Comprehensive Truck Management Program (CTMP) report to the Maritime Committee of the Board and to the full Board for approval.

[3] Dates may be subject to change.

[4] See Appendix E for a description of the regulation.

March 2009 – December 2009: In coordination with City of Oakland staff, investigate the potential to negotiate quantity purchase prices for new trucks (similar to efforts at the Ports of Los Angeles and Long Beach).

September 2009 – December 2009: Implement a truck registration process[5].

December 2009 – July 2010: Install truck tracking technology.

By December 31, 2009: Notify truck owners of upcoming regulatory requirements and the initial compliance deadline through an education campaign.

January 1, 2010: CARB drayage truck regulation (Phase 1) takes effect. The Port will support enforcement of the regulation.

January 1, 2014: CARB drayage truck regulation (Phase 2) takes effect.

Berths 57-59 (Oakland International Container Terminal), 2006.

[5] Truck registry and tracking are subject to availability of funding on the order of $4 million.

Compliance with CARB's "Shore Power" Regulation

The Port will support and promote identification and development of future projects to assist regulated Port customers to comply with CARB's shore power regulation according to the following schedule of deadlines:

Ongoing: Meet with terminal operators and/or carriers to request their approaches to compliance with the shore power regulation.

By June 30, 2009: "Shore Power" Program to:

- Meet with terminal operators and/or carriers to share information about potential investments in infrastructure and/or equipment and otherwise prepare for compliance with the shore power regulation.
- Pursue early implementation of the regulation, subject to feasibility.
- Work with marine terminal operators, carriers, Pacific Gas and Electric and others, as necessary, to assign responsibilities and design plans for installation of shore power at marine terminals and modification of ships to accept that power.
- Port staff will report to the public and the Board on proposed funding sources for shore-side infrastructure, including State funds (directly or through the BAAQMD), a user fee, lease requirements, or other means.

By July 1, 2009: Terminal operators must submit terminal compliance plans to CARB, pursuant to the shore power regulation. Vessel owners also submit plans by this date, if not selecting the "Reduced On-Board Power Generation" compliance option (i.e. grid power).

January 1, 2010: CARB regulation in effect for Equivalent Emissions Reduction compliance option (non-grid power).

By December 2010: Design infrastructure[6].

2011 – 2013: Construct infrastructure for grid power option.

January 1, 2014: CARB regulation in effect for Reduced On-Board Power Generation compliance option (grid power).

Design and Operational Efficiencies

The Port and its tenants will design terminal layouts, security systems and other goods movement infrastructure so greater efficiencies can be achieved. Improvements in technology, yard layout, traffic patterns and gate configuration can result in faster cargo processing, with shorter waits for trucks in line or inside the terminal. Less waiting means less truck idling and reduced emissions. The Port will continue to negotiate with current and prospective tenants on incorporating improvements into projects.

Mid-2010: Report to the public and the Board on potential government and industry strategies to increase efficiency at sea, on Port property, and along transportation corridors. Collaborate with terminal operators, carriers and other ports on preparation of the report.

[6] The schedule and scope of shore power design and construction are subject to planning and feasibility analysis (underway). Preliminary estimate to construct grid power infrastructure for entire Port marine terminal area is $200 million.

Participate in Pilot and Verification Projects for NOx and DPM Reduction Strategies

In partnership with its tenants and customers and with regulatory agencies, the Port will seek to participate in pilot and CARB verification projects to test equipment used in the maritime industry. The priority will be for projects targeted to NOx reduction, with a secondary emphasis on DPM reduction, since strategies to control NOx are not as well developed as those targeting DPM. The expected schedule is:

By July 1, 2009: Contact tenant and customer groups to inform them of the Port's interest in coordinating participation in pilot and equipment verification projects.

By July 1, 2009: Contact CARB, industry groups and other ports to solicit opportunities to participate in pilot and equipment verification projects.

Early Action Construction Emissions Reduction

The Port plans to continue its Early Action pilot program to reduce construction equipment emissions through available mechanisms, including financial incentives, if available, and by including the program in project specifications.

2008: Initiated Early Action construction emissions incentive program.

Trucks at Port of Oakland container terminal, 2002.

Support Enforcement of Regulations by CARB and BAAQMD through Coordination with Tenants

Through either informal or formal agreements, the Port will cooperate with CARB and BAAQMD in their enforcement of seaport-related emissions reduction regulations. Support will include coordination on protocols, tenant and customer group workshops, courtesy reminders to tenants and customers of reporting and other deadlines, and similar measures.

By April 1, 2009: Schedule a meeting with CARB and BAAQMD to discuss the nature of the assistance that is needed from the Port.

Accountability, Monitoring and Reporting

To ensure the Port's accountability on progress towards the MAQIP health risk and emissions reduction goals, to provide opportunities for community participation, and to communicate regularly with the Port's stakeholders, the Port will:

- Convene a maritime stakeholder group, which will serve as a forum for sharing the status of projects during development and execution and discussing issues associated with projects.
- Prepare a written status report to stakeholders on MAQIP projects at least annually.
- Present periodic air quality status reports to the Board of Port Commissioners or one of its committees; the reports will be made available to the community on the Port's website.
- Present MAQIP Supplements to the Board for consideration and approval, as needed, to incorporate amendments (i.e., material changes such as control measures and policy direction) to the MAQIP plan itself.
- Prepare periodic emissions inventories with health risk updates based on CARB's 2008 report.
- Continue to meet regularly with tenants and customers to educate them on air quality regulations and community concerns; request updates from tenants on their programs and projects to include in status reports.
- Continue to participate in agency-only discussions on air quality and health risk via an Interagency Group.
- Reconvene the MAQIP Task Force in five and ten years to review progress toward the plan's goals and reconsider strategies if they need modification.

Air Quality Improvement Initiatives

MAQIP

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Section 9: Air Quality Improvement Initiatives

Over the next decade, state and federal regulations are expected to produce substantial reductions in air emissions from equipment used in Port operations. Many of those regulations, however, depend on equipment turnover to realize their full emissions reduction benefits. Therefore, the MAQIP Task Force developed a process to select, screen and categorize air quality initiatives to achieve:

- Emissions reductions above and beyond those required by law to meet the MAQIP goals
- Emissions reductions earlier than required by regulations ("early actions")

Current Port emissions reduction strategies are aligned with many of the MAQIP initiatives, and future Port projects will be selected from those or from additional initiatives recommended by the Port's maritime stakeholder group. The Port will ensure that its tenants and other business stakeholders are informed of the MAQIP air quality goals and will recommend that they follow the initiative development techniques outlined in this plan for selection of their emissions reduction programs and projects.

9.1 Initiative Development

To select air quality initiatives with a potential to achieve emissions and risk reductions beyond regulatory requirements, the MAQIP Task Force developed an initiative screening process depicted in the flowchart in **Figure 9-1**. Only initiatives with a direct relationship to emission and risk reductions were eventually selected.

9.1.1 Original List of Potential Initiatives

The Source Document Work Team of the MAQIP Task Force reviewed a wide range of existing documents (**Table 9-1**) to compile an initial list of air quality initiatives for the full Task Force to consider. The list was supplemented with initiatives provided by Task Force members and members of the public at the September 27, 2007 MAQIP meeting, resulting in a final list of 355 potential initiatives.

9.1.2 Screening Process and Criteria

An 11-member Work Team of the Task Force, with support from Port staff and technical consultants, stakeholder technical consultants, and BAAQMD staff, reviewed the 355 initiatives from the original list to identify those that directly reduce air emissions and health risk.

The 225 initiatives that did not meet that first round of screening were grouped into categories and included in Appendix I.

To evaluate the remaining 128 initiatives for further consideration, "screening criteria" were adopted by the Task Force on September 27, 2007 (Table 9-2; the full report is provided in Appendix C.) The screening criteria were developed to assist in selecting initiatives with potential benefits and were not intended to establish a framework for funding, implementing, monitoring, or tracking the initiatives. The air quality initiatives selected and prioritized through this process were intended to achieve emission reductions above and beyond those required by law.

Figure 9-1 MAQIP Initiative Screening Process Flowchart

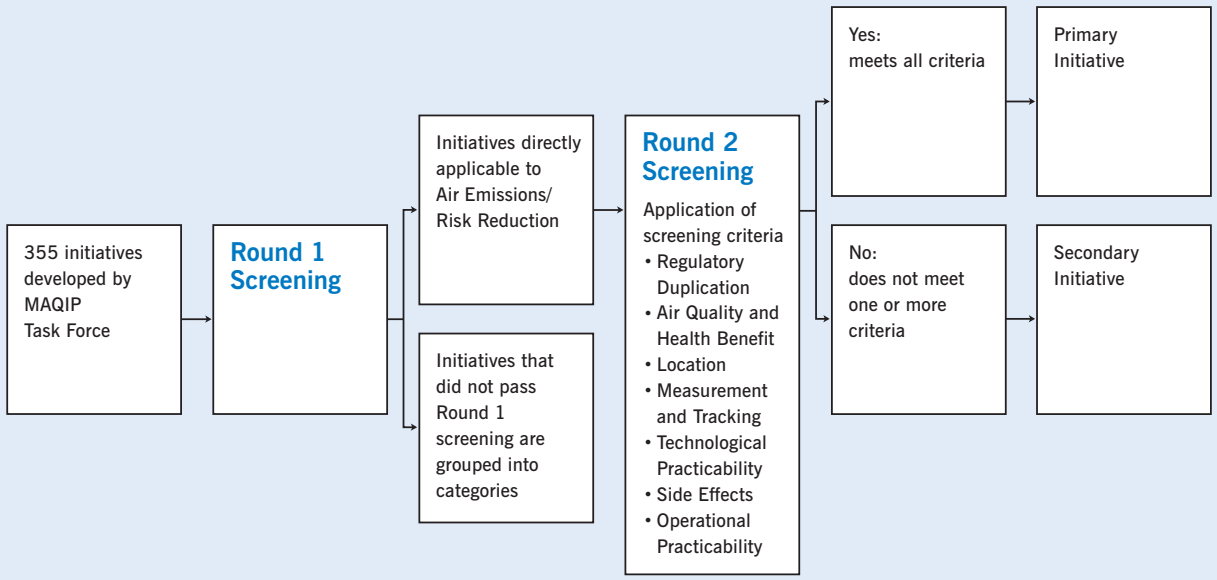


Table 9-1 Source Documents Used for Developing Initial List of MAQIP Initiatives

1	ARB/Railroad Statewide Agreement (MOU), 2005
2	ARB Resolution 6-14 (April 20, 2006)
3	BAAQMD CARE Phase 1 Findings and Recommendations (September 2006)
4	Boalt Hall School of Law Economic Justice Class Presentation to City of Oakland Port Task Force (April 18, 2007)
5	City of Oakland Community Task Force on Ports Recommendations
6	Ditching Dirty Diesel Collaborative and Pacific Institute, "Paying with our Health" (November 2006)
7	EPA Presentation on Hydraulic Hybrids
8	Northwest Ports Clean Air Strategy (Draft May 16, 2007)
9	Pacific Institute "Clearing the Air" (November 2003)
10	San Pedro Bay Ports Clean Air Action Plan – Overview
11	San Pedro Bay Ports Clean Air Action Plan – Proposed Clean Trucks Program Fact Sheet
12	San Pedro Bay Ports Clean Air Action Plan – Proposed Clean Trucks Program Q&A
13	State of California, California Goods Movement Action Plan (January 2007)
14	Summary of studies, West Oakland Diesel Truck Emissions Reduction Initiative (May 1, 2003)
15	West Oakland Toxics Reduction Collaborative Recommendations (March 26, 2007)

Table 9-2 Screening Criteria Adopted by the MAQIP Task Force		
	Criterion	**Description**
1	Regulatory Duplication	Does the proposed initiative achieve "surplus" emission reductions, defined as emission reductions in advance of or beyond an existing regulation or other commitment (for example, an existing MOU)?
2	Air Quality and Health Benefit	Does the proposed initiative contribute to non-negligible local emission and health risk reduction and/or regional ambient air quality improvement?
3	Location	Does the benefit of the proposed initiative occur primarily in the designated "primary impact geographic area" of the MAQIP (West Oakland)?
4	Measurement and Tracking	Can the emission reductions from implementation of the proposed initiative be estimated quantitatively and therefore tracked over time?
5	Technological Practicability	Can the proposed initiative be implemented with existing or foreseeable technology?
6	Side Effects	Does the proposed initiative avoid or at least minimize foreseeable negative environmental, economic, or social side effects?
7	Operational Practicability	Can the proposed initiative be implemented without significant disruption to the movement of freight or compromising safety?

9.1.3 Primary and Secondary Initiatives

An 11-member MAQIP Work Team applied the seven screening criteria presented in **Table 9-2** to the remaining initiatives. This second round of screening categorized initiatives into two groups for achieving reductions above and beyond regulatory requirements:

- **Primary Interest Initiatives:** The initiative received a "yes" response to each of the criterion from at least 8 of the 11 Work Team members. This list represents those initiatives that, according to the Work Team's review, are of primary interest for reducing emissions and health risks associated with Port seaport activities. This list is not exhaustive and presents an overview of the types of actions that may be taken by the Port and its maritime partners. The Work Team anticipated that, over time, other initiatives meeting all seven criteria could be suggested or pursued by the Port, its business partners, its agency partners, or other stakeholders.

- **Secondary Interest Initiatives:** The initiative received a "no" response to one or more of the criteria from at least 8 of the 11 Work Team members. These initiatives were identified as worthy of further evaluation although they did not meet all seven criteria. As with the Primary List, the Secondary List is intended to provide suggestions or guidance for actions that may be taken by the Port, its business partners, its agency partners, or other stakeholders.

Forty-nine primary and 35 secondary interest initiatives, as determined by the Work Team, were presented to the Task Force for confirmation (see **Table 9-3**). An additional 35 initiatives that duplicate existing regulatory or MOU requirements were also identified. These initiatives, organized by emission source category, represent potential opportunities for early implementation or exceedance of regulatory requirements. All initiatives will be evaluated for financial, legal, and technological feasibility prior to implementation.

9.2 MAQIP Task Force Initiatives

The rigorous screening that was applied to the proposed initiatives resulted in a document that described in detail the selection process and presented the final MAQIP Task Force initiatives as of January 30, 2008 (see Appendix D for the full document). Many hours of work and discussion went into choosing the initiatives, which are listed in **Table 9-3**. The Work Team's introduction indicates some of the limitations of their effort:[1]

> *The MAQIP Supplemental Work Team performed its review and categorization of the 355 initiatives to the best of its ability, given its combined knowledge and expertise. Additional development of the initiatives, some of which are currently drafted as general concepts, will be needed prior to any feasibility analysis and the implementation of any initiative on either the Primary or Secondary Lists of Initiatives is subject to economic, legal and technological feasibility. All the measures on this list are intended to represent actions that offer a potential to go beyond existing state and federal regulations and/or MOUs. Initiatives in the regulatory duplication section represent potential opportunities for early implementation (e.g. accelerate) or opportunities to build upon (e.g. 'exceed') regulatory requirements. Acceleration and/or exceedance are similarly subject to economic, legal and technological feasibility. The numbering of the initiatives within each category (e.g. Trucks) and sub-category (e.g. Primary List) does not indicate ranking or priority of any sort.*

MAQIP Task Force meeting, 2008.

[1] "Proposed Lists of Primary Interest and Secondary Interest Air Quality Initiatives for Potential Implementation," revised by the MAQIP Task Force on January 30, 2008. See Appendix D for full document.

Table 9-3 Primary and Secondary Air Quality Initiatives for Potential Implementation and Initiatives Duplicating Existing Requirements[a]

	Initiative	Description
	I. Emission Source Category: Truck	
	A. Primary List of Potential Initiatives Subject to Economic, Legal and Technological Feasibility:	
1	Safety and Neighborhood Education	Institute a collaborative effort among the West Oakland community, the Oakland Police Department, trucking companies/truckers and the Port for increasing public, trucker, and terminal operator education on safety and neighborhood issues.
2	Replace or Retrofit Trucks	State a goal of replacing or retrofitting 1,500-2,500 trucks over 5 years to meet a "clean truck" standard. Ban older trucks from Port terminals in a phased 5-year schedule. The owner of the old truck will be paid for the truck.
3	Truck Buy-Back Program	Create a buy-back program for old trucks based on established criteria (buy worst trucks first) similar to or consistent with the Truck Incentives Working Group of the West Oakland Toxics Reduction Collaborative (WOTRC).
4	Web-Based Reservations	Implement standardized mandatory web-based reservation systems.
5	Gate and Roadway Efficiency	Continue to design and build terminal gate and roadway efficiencies for congestion relief, with input from all users.
6	Fuel Saving Devices	Identify and retrofit in collaboration with various users fuel saving devices that would also reduce greenhouse gas emissions.
7	Electrified Parking Spaces	Provide electrified parking spaces for trucks and/or for reefer units to reduce unnecessary idling.
8	Enforce Truck Routes	Institute a collaborative effort among the West Oakland community, the Oakland Police Department, trucking companies/truckers and the Port to increase enforcement and penalties on prohibited truck routes in West Oakland and evaluate/establish alternate truck route to reduce emissions and exposure.
9	Meet PM Standards and be Cleanest for NOx	By 2011, require all trucks calling at the port frequently or semi-frequently to meet or exceed the EPA 2007 on-road particulate matter (PM) emissions standards (0.01 G/BHP-HR for PM), and be the cleanest available oxides of nitrogen (NOx) at the time of replacement or retrofit.
10	Incentives for Early Implementation	Provide incentives for early implementation for cleaner trucks. An example incentive could be a decreased or increased concession fee.
11	Modernize Private Trucks	Adopt and implement ARB rule to modernize (replace and/or retrofit) private truck fleet.
12	Idle Reduction	Implement idle reduction education, technology, and policy program with provisions to assure terminal adherence to anti-idling policies and procedures (ref: AB 2650).
13	Traffic Barriers	Install traffic barriers on streets where trucks are prohibited (City of Oakland)
14	Prohibit Overnight Truck Parking	Pass an ordinance prohibiting overnight truck parking in residential areas (City of Oakland).
15	LNG and CNG Trucks	Support acquisition and use of more LNG and CNG trucks.
16	Provide Services at Port	Provide truck services (fueling, truck repair, food and beverages) at the Port of Oakland.

[a] "Proposed Lists of Primary Interest and Secondary Interest Air Quality Initiatives for Potential Implementation," revised by the MAQIP Task Force on January 30, 2008. See Appendix D for full document.

Table 9-3 Air Quality Initiatives for Potential Implementation (continued)

	Initiative	Description
	B. Secondary List of Potential Initiatives Subject to Economic, Legal and Technological Feasibility:	
1	Virtual Container Yard	Develop a virtual container yard (off Port property) with compliance by all terminal operators to create more efficient movement of goods. This requires a 3rd coordinating party and central database to design and implement or a better relationship between data developers and the Port.
2	Paperless Gate	Require terminal operators to implement "paperless gate;" such as RFID in combination with web-based booking systems to prevent gate congestion and idling and use OCR for gate efficiency.
3	Pier Pass	Implement Pier Pass drayage truck fleet emission reduction program as implemented in LA/LB with extended gates and daytime congestion fee.
4	Labor Work Rule Flexibility	Improve labor work rule flexibility to enable increased daily truck turns.
5	Inland Container Pools	Establish inland container pools where trucks can drop-off and pick-up empty containers, to minimize deadhead truck runs (chassis pool).
6	Efficient Queues	Create more efficient queues; Call trucks to the Port when needed to reduce idle time.
7	Electrified Truck Stop	Create an electrified truck stop (cold ironing the trucks) so that trucks do not idle in the queue.
8	Software Upgrade	Accelerate software upgrade for trucks (i.e. adjust the software in certain trucks that are "gamed" to allow for greater emissions at higher speeds)
9	Maintenance and Training Programs	If applicable, concessionaires will be required to establish maintenance and training programs to reduce emissions.
10	Design and Operational Measures	Use design/operational measures such as parking, synchronized traffic signals, and driver training.
11	Alternative Fuels	Encourage the use of biodiesel and other alternative fuels.
12	Move More Containers by Rail	Decrease truck traffic by increasing the percentage of containers moved by rail.
13	Trucker Mobility Program	Create a trucker mobility program so that they do not need to drive trucks out of the Port unnecessarily (i.e., use a shuttle, BART, or other public transportation).
	C. Duplication with Existing Regulatory or MOU Requirement:	
1	Anti-Idling Rules	Pass anti-idling rules and enforce anti-idling at terminal gates.
2	Limit Impact of Oakland Army Base Redevelopment	Take steps to limit the impact of Port construction operations related to the Oakland Army Base redevelopment.
3	Vehicle Inspection and Maintenance Program	Develop a Port-run vehicle inspection and maintenance program for port drayage trucks. This would be periodic and random inspection program, and could also be imposed on terminal operators. (State has heavy duty truck inspection rule program).
4	Retrofit Eligible Equipment	Identify and retrofit eligible equipment such as diesel particulate filters (DPF) or diesel oxidation catalysts (DOC).
5	California Low-Sulfur Diesel	Utilize California low-sulfur diesel for trucks.
6	Smoke Inspections	Conduct smoke inspections for trucks in communities.
7	5-Minute Idling Limits	Enforce 5-minute idling limit for trucks.
8	ARB Compliance for International Trucks	Adopt and implement ARB rule to require international trucks to meet U.S. emission standards.
9	Enforce California TRU Rule	Enforce California rule for transport refrigeration units on trucks, trains, and ships.
10	Restrict Entry Unless PM Control Equipped	Restrict entry of trucks new to port service unless equipped with diesel PM controls.

Table 9-3 Air Quality Initiatives for Potential Implementation (continued)

	Initiative	Description
	II. Emission Source Category: Ocean Going Vessels	
	A. Primary List of Potential Initiatives Subject to Economic, Legal and Technological Feasibility:	
1	Port Collaboration to Provide Incentives	Collaborate with other ports (LA/LB and/or Seattle) to coordinate the movement of clean ships through incentives rather than mandates.
2	Best Technology in New Purchases	Ensure the best technologies are incorporated into new equipment purchases.
3	Additional At-Dock and During Voyage Emission Control	Implement additional at-dock (e.g. stack after-treatment) and during voyage (e.g. electrification or scrubbing) emissions reduction options deemed viable.
4	Control Devices on New Vessels and Frequent Callers	Use of diesel particulate matter (DPM) and/or NOx control devices on auxiliary and main engines on new vessel builds and existing frequent callers.
5	Incentivize Cold Ironing	Create incentives for cold-ironing beyond regulations.
6	Incentivize Low-Sulfur Fuel	Create incentives for all ships to use low-sulfur fuel (0.1%) in both vessel main and auxiliary engines.
7	Support MARPOL Annex 6	Support ratification of MARPOL Annex 6 for international shipping.
8	SECA Designation	Obtain SOx Emission Control Area (SECA) designation or alternative for North America.
9	Retrofit Main Engines	Retrofit existing main engines on ships during major maintenance.
	B. Secondary List of Potential Initiatives Subject to Economic, Legal and Technological Feasibility:	
1	Improve Operational Efficiency	Implement operational efficiency improvements during Port development to reduce time at anchor and at dock.
2	Increase Destination Loading	Increase “destination loading” on ships from the Far East.
3	Cleanest Vessels for California	Dedicate cleanest vessels to California service.
	C. Duplication with Existing Regulatory or MOU Requirement:	
1	Implement ARB Low-Sulfur Auxiliary Engine Rule	Implement ARB ship auxiliary engine rule to use lower sulfur fuel (0.1% by 2010) (OAL review) (note: rule currently under litigation)
2	Cleaner Fuels for Auxiliary Engines at Anchor and Berth	100% use of cleaner fuels, such as 0.1% sulfur content, in the auxiliary engines at anchor and at dock for vessels with adequate tank capacity. Assess the feasibility for vessels other than frequent callers, including vessels at anchor and vessels with smaller tank capacity. This is a partial duplication of CARB’s auxiliary engine fuel regulation currently under legal challenge but being temporarily enforced.
3	Cleaner Fuels for Auxiliary Engines During Transit	Use <0.2% Sulfur Marine Gas Oil (MGO) Fuel in vessel auxiliary engines at berth and during transit out to a specified distance from the Port. This is a partial duplication of CARB’s auxiliary engine fuel regulation currently under legal challenge but being temporarily enforced.
4	Use MGO During Transit and Maneuvering	Standardize the use of marine gas oil (MGO) [less than 1.5% Sulfur (S)] fuels in the main engines during transit and maneuvering out to a specified distance from the Port, moving towards a 0.1% S standard as appropriate fuels become available.
5	Cold Ironing	Use “Cold-Ironing” technology to shut down auxiliary engines on ocean-going ships while in port by connecting to electrical power supplied at the dock, or equivalent alternative.

Table 9-3 Air Quality Initiatives for Potential Implementation (continued)

	Initiative	Description
III. Emission Source Category: Harbor Vessels		
	A. Primary List of Potential Initiatives Subject to Economic, Legal and Technological Feasibility:	
1	ULSD and Biofuel	Use ultra low-sulfur diesel and/or biofuel blends for cleaner emissions (this is a partial duplication with CARB's ultra low-sulfur fuel rule).
2	Tighter EPA or ARB Standards	Adopt tighter USEPA or ARB emission standards for harborcraft.
3	Implement Incentives	Implement incentives to accelerate introduction of new harborcraft engines.
	B. Secondary List of Potential Initiatives Subject to Economic, Legal and Technological Feasibility:	
1	Subsidize Tugs Using Soy Diesel	Offer a subsidy for tugs that use cleaner-burning, but more expensive, soy diesel. Provide the subsidy if the equipment uses the fuel and stays in Oakland. This model could also be expanded to other businesses.
2	ULSD and Biofuel	Use ultra low-sulfur diesel and/or biofuel blends for cleaner emissions (this is a partial duplication with CARB's ultra low-sulfur fuel rule).
	C. Duplication with Existing Regulatory or MOU Requirement:	
1	Meet EPA Tier II Standards	Require all home-based harborcraft to meet most EPA Tier II standards for harborcraft of equivalent reductions.
2	Retrofit and Repower Engines	By a specified time, require all previously re-powered home based harborcraft to be retrofitted with the most effective CARB verified NOx and/or PM emissions reduction technologies. When Tier III engines become available, all home based harborcraft will be re-powered with new engines.
3	California Low-Sulfur Diesel	Utilize California low-sulfur diesel for harborcraft.
4	Replace, Retrofit, Use Alternative Fuels	Clean up harborcraft through replacement, retrofit, or alternative fuels.
IV. Emission Source Category: Cargo Handling Equipment		
	A. Primary List of Potential Initiatives Subject to Economic, Legal and Technological Feasibility:	
1	Accelerate Compliance with CARB's CHE Rule	Seek ways to accelerate compliance with CARB's Container Handling Equipment rule.
2	Encourage Use of Clean Fuels	Encourage the use of ultra low-sulfur diesel and/or biofuel and promote the use of other cleaner fuels and lubricants where appropriate.
3	Hybridization and Electrification	Increase fuel efficiency by using CHE with hybridization or full-electrification technologies, as feasible.
4	Replace with Cleaner Equipment	Replace equipment with lighter, more efficient straddle carriers, rubber tired gantries (RTG), or fully-electric rail mounted gantry (RMG) cranes, and use Tier 4 engines for yard tractor fleet.
5	Regenerative Energy Technologies	Identify opportunities for and maximize the use of regenerative energy technologies for CHE.
6	Improve Efficiency and Design as Modifications Occur	Maximize operational efficiency and terminal design as port development occurs and negotiate cleaner alternatives at the time of major modifications and lease negotiations.
7	Lease Measures and Project Reviews	Use lease measures and project reviews to drive continuous improvements and emissions reductions.
8	Increase Electrification	Use electrification in much more Port/terminal operations equipment.

Table 9-3 Air Quality Initiatives for Potential Implementation (continued)

	Initiative	Description
	B. Secondary List of Potential Initiatives Subject to Economic, Legal and Technological Feasibility:	
1	Exhaust Treatment	Complete retrofits of suitable CHE with exhaust treatment equipment.
2	Crankcase Emissions Reductions Systems	Use crankcase emission reduction systems equipment.
3	Increase Zero Emission Equipment	Increase penetration of zero emission or near zero emission cargo handling equipment.
	C. Duplication with Existing Regulatory or MOU Requirement:	
1	ARB Inter-modal Cargo Equipment Rule	Finalize ARB inter-modal cargo equipment rule (OAL)
2	Best Available Technology Fleet Upgrade	Complete full-scale fleet upgrade to the best available technology.
3	Yard Tractors Meet Tier IV Standard	Require all yard tractors to meet a minimum EPA 2007 On-road or Tier IV engine standard by the end of 2010.
4	CHE Meet Tier IV Standard, Equip CHE with VDECS	Require all CHE with engines with >750 hp to meet, at a minimum, the EPA Tier IV of road standards by the end of 2014. Starting 2007, require all CHE with engines <750 hp be equipped with cleanest available VDEC verified by CARB.
5	Replace, Retrofit, Use Alternative Fuels	Implement ARB rule for cleaner cargo handling equipment through replacement, retrofit, or alternative fuels.
6	ARB Forklift Rule	Adopt and implement ARB forklift rule for gas-fired equipment.
7	Green Construction and Maintenance	Require green equipment for goods movement related construction and maintenance.
8	Tier IV Standards	Implement U.S. Tier 4 equipment emission standards.
9	85%+ DPM Control on CHE	Upgrade cargo-handling equipment to 85% diesel PM control or better.
	V. Emission Source Category: Rail	
	A. Primary List of Potential Initiatives Subject to Economic, Legal and Technological Feasibility:	
1	Replace or Retrofit Switching Locomotives	Identify all existing switching locomotives in service at the Port of Oakland that may be potential candidates for replacement or retrofit.
2	Implement Tier III Standards	Specify a date by which any new switch engine acquired must meet EPA Tier III standards.
3	Implement Efficiency Improvements	Implement efficiency improvements to switchyards such as electrification of lift equipment and RFID system implementation when consistent with existing rail yard configuration and operations.
4	Cleanest Available Technology for New or Redesigned Yards	Require any new rail yards developed or significantly redesigned to operate the cleanest available rail yard technology.
5	Lower Emitting Switch Engines	Use lower emitting switch engines within rail yards, where traditionally the oldest locomotives are used.
6	Update Switcher Engines by 2010	Upgrade engines in switcher locomotives by 2010.
7	Retrofit Engines with DPM Controls	Retrofit existing locomotive engines with diesel PM controls when certified by EPA and CARB.

Table 9-3 Air Quality Initiatives for Potential Implementation (continued)		
	Initiative	**Description**
	B. Secondary List of Potential Initiatives Subject to Economic, Legal and Technological Feasibility:	
1	Freight Car Productivity Improvements	Implement freight car productivity improvements, incorporating technologies that reduce train resistance (drag).
2	Increase Yard Efficiency and Identify Feasibility of On-Dock Rail	Increase port-wide rail and switching yard efficiencies and identify the feasibility of on-dock rail as alternative to near dock rail.
3	Infrastructure for Rail Traveling North and East	Create infrastructure for another level of rail traveling North and East.
4	More Rails for Long Haul	Utilize more rails for long haul.
5	Tier III Locomotives in California	Concentrate Tier 3 locomotives in California.
6	Class I Long Haul Locomotives Transition to Tier III Fleet Average	Over a voluntary transition period, require the fleet average for Class I Long Haul Locomotives calling at port properties to be Tier III equivalent PM and NOx and to use 15 minute idle restrictors.
7	Tier III/IV Line Haul Locomotives for New Engines and Rebuilds	Implement Tier 3/Tier 4 U.S. standards for line haul locomotives at time of purchase (new engine and rebuild standards).
8	Biofuel or Other Clean Fuels	Encourage the use of biofuel or other cleaner fuels in switchyard and line haul locomotive engines.
	C. Duplication with Existing Regulatory or MOU Requirement:	
1	California Low-Sulfur Diesel	Utilize California low-sulfur diesel for captive instate locomotives.
2	Automatic Idling-Reduction Devices	Eliminate non-essential locomotive idling both inside and outside of rail yards by installing automatic idling-reduction devices on 99% of unequipped intrastate locomotives by June 30, 2008.
3	Low-Sulfur Diesel in 80% of California Locomotives	Dispense lower-sulfur diesel in 80% of locomotives operating in California by January 1, 2007.
4	Visible Emission Reduction and Repair Program	Ensure that the incidence of locomotives with excessive visible emissions is very low through the Visible Emission Reduction and Repair Program.
5	Early Review of Emissions Impacts	Conduct early review of air emissions impacts from designated yards — with ensuing feasible mitigations.
6	ULSD in Locomotive Engines	Use ultra low-sulfur diesel in switchyard and line haul locomotive engines.
7	2005 Statewide MOU	Implement 2005 Statewide MOU for Rail Yard Risk Reduction.
8	Idling Restriction Training	Conduct training on locomotive idling restrictions.

Table 9-3 Air Quality Initiatives for Potential Implementation (continued)		
	Initiative	**Description**
	VI. Emission Source Category: Other	
	A. Primary List of Potential Initiatives Subject to Economic, Legal and Technological Feasibility:	
1	Biodiesel Consortium	Develop a biodiesel consortium (City of Oakland, Port of Oakland, City of Berkeley, West Oakland community).
2	Sustainable Commuting Employee Programs	Establish employee programs to facilitate sustainable commuting.
	B. Secondary List of Potential Initiatives Subject to Economic, Legal and Technological Feasibility:	
1	Position for Public Health Officer at the Port	Create a position for a public health officer at the Port to take the lead on health impact assessment, and inform staff on community and worker health.
2	Sponsor a Healthy Homes Project	Sponsor a Healthy Homes Project utilizing technology and design practices to reduce the amount of dangerous pollution residents breathe inside their homes. (Alameda County Public Health Department and the California Department of Health Services).
3	Pollution Mitigation and Prevention	Conduct mitigation and pollution prevention.
4	Enforce Traffic and Vehicle Safety Laws	Increase enforcement of traffic and vehicle safety laws and regulations.
5	Establish Construction Staging Areas	Establish construction staging areas in locations to minimize impact on local circulation with appointment system.
6	Retrofit Freight Vehicles with Probes and Smart Sensors	Retrofit freight vehicles with probes and smart sensors to measure speed, weather, pollution, lane departure, cargo location, customs data, container RFID information, and vehicle/frame condition inspection dates.
	C. Duplication with Existing Regulatory or MOU Requirement	
1	Regulate Emissions from Stationary and Indirect Sources	Regulate criteria pollutant and toxic emissions from stationary sources and indirect sources based on Phase I findings.
2	Enforce Adopted Commercial Vehicle Laws	Expand enforcement of commercial vehicle laws already adopted.
3	Use Green Construction Equipment	Use green equipment for construction of infrastructure projects (as available).

9.3 Selected Initiatives

Since 1999, the Port has funded and supported innovative ways to reduce emissions from maritime operations. While the MAQIP Task Force was preparing the air quality master plan, the Port continued its commitment to clean air through a variety of emissions reduction projects that were already in the planning and implementation stages. Most of those projects are aligned with the MAQIP initiatives and were selected in consultation with community stakeholders through a public process. The Port intends to select its future emissions reduction programs and projects from the MAQIP initiatives, and to consider adding new initiatives according to the MAQIP screening process, in consultation with stakeholders.

As described in Section 1.3, the Port normally follows a planning continuum (**Figure 1-1**) that starts with a conceptual strategic or master plan (e.g., the MAQIP) that provides a framework for how to achieve the goals delineated in the plan. The next step is to develop the comprehensive programs that manage how the goals will be reached. Finally, the specific Port projects that reach the goal are implemented, guided by project-specific work plans.

The programs and projects detailed in **Table 9-4** provide a comprehensive look at the major emissions reduction efforts that the Port and its tenants and business partners are now working on or are considering. Nearly all of these efforts are intended to reduce emissions in advance of (early actions) or beyond regulatory emissions reduction requirements. Therefore, new equipment, fuel and infrastructure needed for direct compliance with regulations on the required schedule are not included in this table because of the obligatory nature of those projects.

Table 9-4 includes projects that were recently completed, those currently underway or set for implementation in the next year or two, potential future projects, and projects planned or undertaken by entities other than the Port, as well as terminal design and operational efficiencies:

- **Completed:** Some projects were implemented recently by the Port or by its business partners and tenants, and are continuing to reduce emissions in advance of or beyond regulatory requirements. Most of the Port projects in this category were selected in consultation with community stakeholders through a public process.
- **Underway:** Advanced planning for some programs and projects was already underway prior to the development of the MAQIP Task Force initiative screening process and final list. All of those strategies meet the MAQIP air quality goals, and support the primary and secondary initiatives. The projects are designed to reduce emissions in advance of or beyond regulatory requirements. Most of the Port programs and projects in this category were selected in consultation with community stakeholders through a public process. Implementation of all Port and other projects depends on the availability of funding.
- **Future:** Some potential programs and projects are described, but are not scoped out in detail. The Port is committed to working with a maritime stakeholder group through a public process to design emissions reduction projects and programs based on the MAQIP initiatives, and guided by the Port's emissions control measures (see Section 8.4). At that time, responsibilities, funding and schedules can be established. While some of these are early action measures, others encompass Port infrastructure improvements needed to indirectly support regulatory compliance.

- **Non-Port Projects and Programs:** Some tenants and business partners, such as ocean carriers, are voluntarily engaged in emissions reduction efforts in advance of or beyond regulatory requirements.
- **Operational Efficiencies:** Current and past projects that promote reduced use of fuel or equipment at the seaport, thereby resulting in lowered emissions, are included along with long-term opportunities for similar efficiencies.

Both programs and projects are presented in Table 9-4 to show their relationship to individual initiatives identified by the MAQIP Task Force. Table 9-5 breaks out programs and projects by source category. Table 9-6 presents the PM and NOx lifetime emissions reductions from early action projects that the Port, tenants or customers have already completed or scheduled.

Berths 55-56 (Hanjin Terminal), 2007.

Table 9-4 Selected Emissions Reduction Programs and Projects Based on MAQIP Initiatives

Programs and Projects by Source Category	Link to Primary and Secondary MAQIP Initiatives (Table 9-3)
Trucks	
Port of Oakland Comprehensive Truck Management Program (CTMP)	
The Comprehensive Truck Management Program (CTMP) is a broad program initiated by the Port of Oakland, with substantial multi-stakeholder collaboration. The objectives of the CTMP range from enhancing Port security and safety to improving air quality. Many of the MAQIP truck initiatives are potential features of the CTMP; some of its elements are described below. See the Port's website for more information.	
CTMP: Provision of Truck Parking In Port Area	
Fifteen acres of additional truck parking in the Port's maritime area are planned, in addition to the 15 acres of parking that will be provided by the City of Oakland. The Port is providing interim parking on former Oakland Army Base sites until the new lot is completed. Opportunities for truck driver education on idling and truck routes and for additional truck services at the site may exist and could be investigated by the private truck parking operator. This is in addition to truck parking that is already provided in the Port maritime area. In 2005, Port funding enabled the opening of a new Oakland Maritime Support Services facility, which provides overnight parking for about 20 trucking companies, custom-designed dispatching services, and other trucking services. Schedule: Interim parking is currently being provided Cost: TBD Funding: TBD Partners: Port (Maritime), with City of Oakland and private operator (OMSS)	Trucks (Primary): **1** Collaborate/Educate **8** Truck Route **12** Idling Education **16** Truck Services
CTMP: Enforcement of Truck Parking and Operations Restrictions on Neighborhood Streets	
While the Port already funds two City of Oakland police officers to enforce truck parking and operations restrictions in West Oakland, that agreement is under review to determine how enforcement could be more effective. Schedule: Underway Cost: $300,000 annually Funding: Port funds Partners: Port (Community Relations), with City of Oakland Police Department	Trucks (Primary): **1** Collaborate/Educate **8** Truck Route
CTMP: Truck Registration	
A key potential feature of the CTMP, this measure is in the design phase via an RFP. Schedule: TBD Cost: TBD Funding: TBD Partners: Port (Maritime), with CTMP Technical Advisory Committee, truck owners	Trucks (Primary): **4** Terminal Reservations **8** Truck Route Trucks (Secondary): **1** Virtual Container Yard **2** RFID Gate **6** Efficient Queues Rail (Primary): **3** Yard Efficiencies

Table 9-4 Selected Emissions Reduction Programs and Projects (continued)

Programs and Projects by Source Category	Link to Primary and Secondary MAQIP Initiatives (Table 9-3)
CTMP: Truck Idling Outreach and Education	
The BAAQMD enforces port truck idling regulations at the Port of Oakland. A more coordinated program to educate truck drivers on the regulations and on local truck routes and parking restrictions is planned. To assist in this effort, the Port is providing the West Oakland Environmental Indicators Program (WOEIP) with a trailer in the maritime area to use for trucker outreach and education. Schedule: TBD Cost: TBD Funding: TBD Partners: BAAQMD, truckers, dispatchers, Oakland Police and Traffic, CHP, Port, tenants, WOEIP, community groups	Trucks (Primary): **1** Collaborate/Educate **8** Truck Route Other (Secondary): **4** Enforce Traffic and Safety
Retrofit and/or Replacement of Drayage Trucks	
The BAAQMD, in partnership with CARB, plans to jointly fund retrofits (diesel particulate filters that are verified by CARB to reduce DPM by at least 85%) and/or replacements (2007 engine or better) for trucks that serve the Port's maritime activities. The project shall comply with California's GMERP Final Guidelines. Schedule: June 30, 2009 – Install DPFs on up to 1,000 trucks if technically feasible (Year 1), or assist with purchase of new trucks (replacement schedule TBD) Cost: $15,500,000 Funding: Up to $10.5 million – CARB (Prop 1B, Year 1) $5 million – BAAQMD (TFCA) Partners will jointly fund the cost of DPFs and/or contribute to truck replacements according to the current plan. Partners: BAAQMD and CARB, with DPF providers, truck owners, truck dealers	Trucks (Primary): **1** Collaborate/Educate **2** Retrofit/Replace (part) **8** Truck Route **12** Idling Education
Port Vision 2000 Drayage Truck Replacement	
The Port launched a Truck Replacement Program in late 2005 to provide subsidies to truckers to scrap older heavy-duty diesel trucks and replace with newer, cleaner-burning vehicles. The Port offered truckers whose trips were mostly within the Port maritime area up to $40,000 per truck (model year 1993 or older) to replace them with 2000 or newer model year trucks with significantly lower emissions. Approximately 80 trucks were replaced, and close to $3 million in incentive funding was awarded. The older trucks are permanently taken off the road and scrapped. It is estimated that more than 72 tons of DPM, ROG, and NOx emissions are being reduced during the five years of the project life. Many replacement trucks will operate beyond five years, making future emissions reductions even greater. Schedule: 2005 through 2008 Cost: $3,000,000 Funding: Port (Vision 2000 Air Quality Mitigation Program funds) Partners: Port (Environmental), with truck dealers, truck owners, scrap yards, West Oakland Neighbors, Vision 2000 Technical Review Panel and Truck Technical Advisory Committee	Trucks (Primary): **1** Collaborate/Educate **2** Retrofit/Replace (part) **8** Truck Route **12** Idling Education

Table 9-4 Selected Emissions Reduction Programs and Projects (continued)

Programs and Projects by Source Category	Link to Primary and Secondary MAQIP Initiatives (Table 9-3)
LNG Equipment and Infrastructure	
Replace diesel trucks with up to 9 LNG-fueled heavy-duty trucks and 2 mobile fueling stations. This equipment will operate in the Port area. Schedule: Project implementation underway, operational in 2009 Cost: $3 million (maximum) Funding: $1.75 million – Caltrans CMAQ grant, through MTC; $0.4 million – Port (Vision 2000 Air Quality Mitigation Program) $0.9 million – private operator (CleanAir Logix) Partners: Port (Environmental) and CleanAir Logix, with Caltrans, MTC	Trucks (Primary): **15** LNG/CNG trucks
Truck Work Groups	
Continue participation in established forums that share information on truck air quality and related issues, technologies, policies, programs and funding, such as: • MAQIP Interagency Group • West Coast Collaborative • West Oakland Toxic Reduction Collaborative (WOTRC), Truck Incentives Working Group • Port Accessibility Task Force (Bay Area World Trade Center) • Other Schedule: Ongoing Cost: Port staff time Funding: Port Partners: Port (Environmental, Maritime, Social Responsibility, Government Affairs), with EPA, BAAQMD, WOEIP, Alameda County Public Health Department, truckers, City of Oakland, BAWTC, other agencies	Trucks (Primary): **1** Collaborate/Educate **8** Truck Route
Harborcraft	
Tugboat Engine Replacement	
In July 2000, the Port approved funding to replace two tugboat engines with new low-emission diesel engines. This replacement eliminates 0.9 tons of PM and 26 tons of NOx annually, or 15.5 tons of PM and 431 tons of NOx over the sixteen year life of the project. Schedule: Completed Cost: $443,966 Funding: Port (Vision 2000 Air Quality Mitigation Program funds) Partners: Port (Environmental), tug owner (Oscar Niemeth Towing), West Oakland Neighbors, Vision 2000 Technical Review Panel	Early Action Project: Supports MAQIP's Emissions and Health Risk Reduction Goals

Table 9-4 Selected Emissions Reduction Programs and Projects (continued)

Programs and Projects by Source Category	Link to Primary and Secondary MAQIP Initiatives (Table 9-3)
Cargo Handling Equipment	
Electric-Powered Rail-Mounted Gantry Cranes	
Electric yard cranes are increasingly under consideration for marine terminal operations and railyards. Some tenants are studying the feasibility of incorporating electrified rail mounted gantry cranes in their future operations. Schedule: TBD Cost: TBD Funding: Tenant Partners: Tenants, with Port (Maritime and Engineering), consultants	Cargo Handling (Primary): **1** Early Compliance **3,8** Electrification **4** Electric RMG (part) Rail (Primary): **3** Yard Efficiencies
Container Terminal Equipment Retrofit and Replacement Program	
Beginning in 2000, the Port worked with APL, Maersk Inc., Marine Terminals Corporation, SSAT, TransBay Container Terminal, Inc., and Trans Pacific Container Service Corporation, to repower 83 pieces of diesel equipment and retrofit 178 pieces, mostly yard trucks. Schedule: 2000 to 2006 (first installations in 2002) Cost: $1,211,400 Funding: Port (Vision 2000 Air Quality Mitigation Program funds) Partners: Port (Environmental), marine terminal operators, West Oakland Neighbors, Vision 2000 Technical Review Panel	Cargo Handling (Primary): **1** Early Compliance
Electrification Projects	
All of the 37 container cranes on the Port's marine terminals are electric, and electric connections have been provided for refrigerated shipping containers on all of the Port terminals. In addition, the Port installed shoreside connections to power electric dredges engaged in the Port's channel and berth deepening projects. Schedule: Cranes and reefer plugs – completed; dredging – ongoing Cost: NA Funding: Port, U.S. Army Corps of Engineers (share of electric dredges for channel) Partners: Port, marine terminal operators, U.S. Army Corps of Engineers	Supports MAQIP's Emissions and Health Risk Reduction Goals
Ships (Ocean-Going Vessels)	
APL/Eagle Marine Services Shore Power	
APL/Eagle Marine Services is planning to implement grid-based shore-side power at Berths 60-63. The project will provide the terminal infrastructure to enable ships to turn off their auxiliary engines and connect to shore-side power while at berth, and includes procurement and installation of a substation, underground cabling, connection to the electrical grid, and shore-side plugs for two berths. APL plans to plug in 25% of ship visits by 2011, 60% by 2014, and 90% by 2020. Each of these milestones represents acceleration from regulatory requirements by 3 years and additional emissions reductions of 10% in each key year. Schedule: Operational by December 2009 Cost: $4 million Funding: $2.9 million CARB I-bond funding $1.1 million private funds Partners: APL/Eagle Marine Services, with BAAQMD, CARB, Port	Ships (Primary): **6** Early Action Shore Power (part)

Table 9-4 Selected Emissions Reduction Programs and Projects (continued)

Programs and Projects by Source Category	Link to Primary and Secondary MAQIP Initiatives (Table 9-3)
Alternative Fuel Shore Power	
In 2007, the Port, BAAQMD, APL/Eagle Marine Services, PG&E and CleanAir Logix tested an LNG-fueled mobile shore-side power technology designed to reduce emissions from ships while at berth. Future use of this technology (Wittmar DFMV™ Cold Ironing) will depend on operational functionality, cost and other aspects of feasibility. Schedule: Test completed; future applications TBD by tenants Cost: $275,000 from Port for test of technology Funding: Port funds Partners: Port (Environmental) and CleanAir Logix, with BAAQMD, APL/Eagle Marine Services, PG&E	Ships (Primary): **6** Early Action Shore Power (part)
Infrastructure Requirements for Shore Power	
Port staff is currently meeting with tenants to hear about their plans for compliance with CARB's regulation to reduce emissions from diesel auxiliary engines on ocean-going vessels while at berth at a California port ("shore power" rule), and to determine if there are any opportunities for early compliance with the regulation. Port staff is examining the electric infrastructure requirements for shore power, and likely capital investment costs. Schedule: TBD Cost: TBD Funding: TBD Partners: Tenants, with Port (Maritime)	Ships (Primary): **6** Early Action Shore Power (part)
Voluntary Compliance with Fuel Regulations	
Many shipping lines calling at the Port of Oakland have offered to voluntarily use low-sulfur fuel in their auxiliary engines, prior to implementation of the main engine and auxiliary engine low-sulfur regulation. The Pacific Merchant Shipping Association (PMSA) has recommended that member companies use low-sulfur fuel in their auxiliary engines as an early action emissions reduction measure. Schedule: TBD Cost: TBD Funding: Shipping lines Partners: Shipping lines, PMSA	Supports MAQIP's Emissions and Health Risk Reduction Goals
Voluntary Use of Low-Sulfur Fuel	
In December 2005, A. P. Moller-Maersk (APM) announced a voluntary pilot initiative to switch fuel in both the main and auxiliary engines on all of its vessels calling at California ports to use a marine gas-oil (MGO) with sulfur content below 0.2%. A 2007 study of the results of this program at the Ports of Oakland and Los Angeles showed encouraging results.[a] Ships were switched over from bunker fuel, with a 2.3% sulfur content, to MGO, with an average 0.13% sulfur content (even lower than expected), at 24 nautical miles (nm) from the California coast for auxiliary engines, and at 24 nm from the arrival port for the main engines. Emissions reductions in California waters for 2007 were: • SOx 95 % reduction • PM 86 % reduction • NOx 12 % reduction Schedule: 2006 - present Cost: NA Funding: APM Partners: APM	Supports MAQIP's Emissions and Health Risk Reduction Goals

[a] APM, 2008. "Maersk Pilot Fuel Switch Initiative," presentation by Jim Flanagan, APM, at Future Ports Program: Air Quality – Are We Making Progress?, May 16, 2008, http://www.futureports.org/events/airquality/aq-flanagan-ppt.pdf

Table 9-4 Selected Emissions Reduction Programs and Projects (continued)

Programs and Projects by Source Category	Link to Primary and Secondary MAQIP Initiatives (Table 9-3)
Rail	
Clean Switcher Locomotive Engines	
The Port is leveraging funding to assist BNSF (the Port's rail tenant) with the replacement of older yard locomotives with two new clean-burning genset switcher locomotives at the Oakland International Gateway (OIG). These engines are committed to Oakland service. Schedule: Project implementation underway, operational in 2009–2010 Cost: $3.0 million for 2 units Funding: $1.3 million – Port $1.7 million – BNSF Partners: Port (Environmental) and BNSF	Rail (Primary): **1** Switcher ID **6** Switcher Replacement
Other Equipment and Fuels	
Low-Emissions Construction Equipment	
In 2007, the Port launched an incentive pilot project to encourage contractors to use lower emissions construction equipment. Incentives were incorporated into the specifications for two projects to date with the intention of promoting the use of clean construction equipment ahead of the implementation schedule required by the CARB in-use, off-road diesel vehicle rule. Schedule: Pilot project is underway Cost: $175,000 in incentives for two projects (estimated) Funding: Port Partners: Port (Engineering), with construction contractors	Supports MAQIP's Diesel PM Reduction Goals
Port-Owned Vehicle Fleet	
The Port is gradually replacing its own fleet of 200 cars and trucks with hybrid, CNG-fueled, or electric vehicles. To date, the Port has replaced or eliminated 25% of its fleet and is on track to replace the rest within the next five years. The Port is also planning to test an ethanol biofuel (O2 diesel) in three Port vehicles. Schedule: Underway; 25% completed by 2007; 100% completed by 2013 Cost: TBD Funding: Port funds Partners: Port (Maritime)	Trucks (Primary): **15** LNG/CNG Trucks (Support) Trucks (Secondary): **11** Alternative Fuel

Table 9-4 Selected Emissions Reduction Programs and Projects (continued)

Programs and Projects by Source Category	Link to Primary and Secondary MAQIP Initiatives (Table 9-3)
CNG Station	
In 2007, the Port, the City of Oakland and other partners assisted Clean Energy Corporation in construction of a CNG station at 205 Brush Street, adjacent to the Port's maritime area. The station can be used for fueling both trucks and passenger vehicles, and is open to the public 7 days a week/24 hours a day. The Port donated land, and the City secured grants from BAAQMD and the California Energy Commission to assist in construction. Schedule: Complete and operational Cost: Unknown Funding: $166,100 – value of Port property (2005) $375,000 – grant from California Energy Commission and Alameda County Congestion Management Agency, through the City of Oakland Remaining costs – Clean Energy Corporation Partners: Clean Energy Corporation and Port (Maritime and Environmental), with City of Oakland, BAAQMD, California Energy Commission, Alameda County Congestion Management Agency	Trucks (Primary): **15** LNG/CNG Trucks (support) Trucks (Secondary): **11** Alternative Fuel
Repower and Retrofit West Oakland Buses	
In 1999, the Port gave money to AC Transit to help repower and retrofit 28 buses assigned to routes in West Oakland and neighboring communities. Schedule: Complete and operational in 2001 Cost: $659,000 Funding: Port (Vision 2000 Air Quality Mitigation Program funds) Partners: Port, AC Transit, West Oakland Neighbors	Supports MAQIP's Emissions and Health Risk Reduction Goals
Operational Efficiencies	
Marine Terminal Improvements	
The Port and its tenants routinely search for ways to improve terminal design, security systems and other goods movement infrastructure so greater efficiencies can be achieved. Improvements in technology, yard layout, traffic patterns and gate configuration can result in faster cargo processing, with shorter waits for trucks in line or inside the terminal. Less waiting means less truck idling and reduced emissions. The Port will continue to negotiate with current and prospective tenants on incorporating improvements into terminal projects as opportunities arise. Operational and design efficiencies are discussed in more detail in Section 8, "Emissions Reduction Strategies." The emissions reduction benefit of such projects can be substantial. For example,TraPac reported that a recent container yard project led to a 25% decrease in truck turn times, despite a 25-30% increase in cargo throughput. Continued improvements should lead to even better truck turn times in the future.	Trucks (Primary): **5** Terminal Efficiencies **7** Reefer Plugs (part) Trucks (Secondary): **6** Efficient Queues **12** More Rail Cargo Ships (Secondary): **1** Terminal Efficiencies Cargo Handling (Primary): **6** Terminal Efficiencies
Rail Yard Development and Reconstruction	
The Port is evaluating redevelopment options for the former Oakland Army Base property, including rail yard development. Opportunities for operational efficiencies may include electrified yard cranes and improved track and yard layouts. Schedule: TBD Cost: $220 million Funding: $110 million – grant from Caltrans TCIF (Prop 1B funds) $110 million – Port funds Partners: Port (Maritime, Engineering and Environmental), UP with Caltrans	Rail (Primary): **3** Yard Efficiencies Rail (Secondary): **2** Yard Efficiencies **4** More Rail Cargo Trucks (Primary): **5** Terminal Efficiencies

Table 9-4 Selected Emissions Reduction Programs and Projects (continued)

Programs and Projects by Source Category	Link to Primary and Secondary MAQIP Initiatives (Table 9-3)
Near-Dock Rail Yard (OIG)	
The Oakland International Gateway (OIG), a new near-dock rail terminal opened in 2002, effectively removing up to 20,000 trucks hauling containers off I-80 between the Port of Oakland and BNSF's rail yard 12 miles away in Richmond, reducing both congestion and air emissions. Schedule: Completed 2002 Cost: $38 million Funding: $22 million – federal grants through ISTEA and TEA-21 funding $16 million – Port funds Partners: Port, Alameda County Transportation Agency, Caltrans, BNSF	Rail (Secondary): **2** Yard Efficiencies **4** More Rail Cargo Trucks (Primary): **5** Terminal Efficiencies
Maritime Materials Management Program (MMP)	
The Port's maritime Materials Management Program (MMP) diverts concrete, asphalt, and soil generated by seaport construction and demolition projects from landfills and off-site stockpiles to an on-Port facility for processing into construction aggregates and fill material. The processed material is then recycled back into the Port's and tenants' construction and redevelopment projects. This program eliminates repeated truck trips to and from suitable landfills, recycling centers or quarries that are located 10 to 71 round-trip miles from the Port. In the first 16 months of operation, the program demonstrated emissions reductions of: • SOx 0.01 tons • PM_{10} 0.3 tons • NOx 12 tons The crushing contractor, Evans Brothers, will use only Tier III off-road equipment during all crushing activities, effective October 2008, resulting in an estimated 65% reduction in PM and 60% reduction in NOx from crushing operations. Schedule: Ongoing; began operations in March 2007 Cost: $0.2 million for start-up; Port staff time; net savings for construction projects Funding: Port; program will eventually generate net revenue Partners: Port; contractors	Other (Secondary): **5** Establish Construction Staging Areas
Air Quality Policy and Education	
Participate in Public Air Quality Policy and Funding Forums	
Continue participation in established forums that share information on maritime air quality issues, technologies, policies, programs and funding, such as: • MAQIP Interagency Group • West Coast Collaborative • West Oakland Toxic Reduction Collaborative (WOTRC) • CARB Goods Movement Local Entity Work Group Schedule: Ongoing Cost: Port staff time Funding: Port Partners: Port (Environmental, Government Affairs, Maritime, Social Responsibility), EPA, BAAQMD, WOEIP, Alameda County Public Health Department, CARB, City of Oakland, tenants, other ports and agencies	Ships (Primary): **1** West Coast Clean Ships **8** MARPOL 6 Support **9** SECA Designation

Table 9-4 Selected Emissions Reduction Programs and Projects (continued)

Programs and Projects by Source Category	Link to Primary and Secondary MAQIP Initiatives (Table 9-3)
Health Risk Assessment Responsibility at the Port	
A Port Environmental Supervisor has been designated the health risk assessment coordinator for the Port. The current assigned staff person holds graduate degrees in public health and, as a Certified Industrial Hygienist, is experienced in analyzing and communicating health risks. Schedule: Ongoing Cost: Port staff time Funding: Port Partners: Port (Environmental), with Alameda County Public Health Department	Other: **1** Staff For Health Risk Assessment (part)
Breathmobile Support	
The Port is providing financial support to the Breathmobile, an "asthma clinic on wheels" sponsored by the Prescott-Joseph Center in West Oakland, which visits Oakland schools to provide convenient and free asthma services. Schedule: 2008 Cost: $50,000 from Port Funding: Port contribution to Breathmobile Partners: Prescott-Joseph Center, with funding partners including BAAQMD and the Port (Social Responsibility)	
Research Opportunities	
Investigate Technologies and Grant Opportunities	
Investigate technologies and funding opportunities for additional potential emissions reductions strategies. Schedule: Ongoing Cost: Port staff time, potential use of consultants Funding: Port Partners: TBD	
Participate in Pilot Programs for NOx and DPM Reduction	
Participate in suitable equipment and control strategy pilot and verification projects, with an emphasis on NOx reduction. Schedule: TBD Cost: TBD Funding: TBD Partners: Port, tenants, maritime-related businesses, vendors, CARB, BAAQMD	
Track MAQIP Progress Through Emissions Inventories	
Update the Port's "2005 Seaport Air Emissions Inventory" to track the Port's progress toward meeting its emissions reduction goals. Schedule: Repeat every 2 to 3 years as feasible. Cost: TBD Funding: Port Partners: Port (Environmental), with CARB, BAAQMD, tenants, consultant	

Table 9-5 Summary of Programs and Projects by Source Category

Programs	
Trucks	Comprehensive Truck Management Program (CTMP) • Provision of truck parking in Port area • Enforcement of truck parking and operations restrictions on neighborhood streets • Truck registration Truck idling outreach and education Truck work groups
Ships	Infrastructure and equipment requirements for shore power Voluntary compliance with fuel regulations Voluntary use of low-sulfur fuel (APM)
Operational Efficiencies	Marine terminal improvements Rail yard development and reconstruction Near-dock rail yard (OIG) Maritime Materials Management Program
Policy and Education	Participate in air quality policy and funding forums Health risk assessment responsibility at the Port Breathmobile support
Research	Investigate technologies and grant opportunities Participate in pilot programs for NOx and DPM reduction Track MAQIP progress through emissions inventories
Projects	
Trucks	Retrofit and replacement of drayage trucks Port Vision 2000 drayage truck replacements LNG equipment and infrastructure
Rail	Clean switcher locomotive engines
Ships	APL/Eagle Marine Services shore power Alternative shore power
Harborcraft	Tugboat engine replacement Electrification projects (electric dredgers)
Cargo Handling Equipment	Electric-powered rail-mounted gantry cranes Container Terminal Equipment Retrofit and Replacement Program (CTERRP) Electrification projects (container cranes, plugs for refrigerated containers)
Other Equipment and Fuels	Low-emissions construction equipment Port-owned vehicle fleet CNG station Repowered and retrofitted West Oakland buses

Table 9-6 PM and NOx Emissions Reductions from Early Action Projects

Early Action Emissions Reduction Projects	Lifetime NOx Reductions (tons)	Lifetime PM Reductions (tons)	Project Life (years)
Trucks			
Retrofit or replacement of drayage trucks; a combination of retrofits and replacements may be selected. Emissions reductions are based on retrofit of 1000 trucks with DPF (BAAQMD).	0	91	4
Port Vision 2000 drayage truck replacement	96	12	5
LNG equipment and infrastructure (Port, Caltrans, CleanAir Logix)	62	3	15
Ships			
Voluntary compliance with fuel regulations (carriers)	Not calculated	Not calculated	NA
Voluntary use of low-sulfur fuel (APM)	Not calculated (12% reduction)	Not calculated (86% reduction)	NA
APL/Eagle Marine Services shore power (APL/Eagle Marine, BAAQMD, CARB)	TBD	TBD	
Rail			
Clean switcher locomotive engines (Port, BNSF)	190	10	15
Harborcraft			
Tugboat engine replacements	431	16	16
Electrification projects (electric dredges)	537	13	4
Cargo Handling Equipment			
Container Terminal Equipment Retrofit and Replacement Program (CTERRP)	129	25	Various
Electrification projects (container cranes, refrigerated container plugs)	Not calculated	Not calculated	NA
Other Equipment and Fuels			
Low-emissions construction equipment pilot program	Not calculated	Not calculated	NA
Port-owned vehicle fleet	Not calculated	Not calculated	NA
Repower and retrofit West Oakland buses	40	4	9
Total Emissions Reductions			
Total Lifetime Emissions Reductions from Selected Projects	**1,485 tons of NOx**	**174 tons of PM**	

Note: All are Port-sponsored projects unless otherwise noted. Some emissions reductions were not calculated because the reductions were minimal or the necessary data were not yet available.

Implementation

MAQIP

10

Section 10: Implementation

This section discusses implementation of emissions reduction measures by the Port of Oakland. Due to the array of CARB and EPA regulations and standards affecting the maritime industry, most emissions reduction projects over the next decade will be undertaken by Port tenants and maritime-related businesses, not by the Port. The Port will ensure that its tenants and other business stakeholders are informed of the MAQIP air quality goals and will recommend that they follow the initiative development techniques outlined in this plan for selection of their emissions reduction programs and projects.

The Port intends to implement selected emissions reduction programs and projects generally following the approaches described in this section, within its legal authority. Similar approaches apply to both programs and projects, but the term "project" is used throughout this section because most programs lead to implementation of specific projects.

10.1 Overview of Port's Legal Authority

When a state or federal agency (such as CARB) adopts regulations, it derives its power to adopt, implement and enforce such regulations from specific state or federal laws. In other words, it is an enforcement agency because it has enforcement powers derived by state and federal legislation. Such enforcement powers are not "passed on" to the Port. For example, in CARB's shore power regulations ("Operational Hour Limits and Other Requirements for Auxiliary Diesel Engines Operated on Ocean-Going Vessels At-Berth in a California Port"), the "Violations" section cites California Health and Safety Code Section 42400 that gives CARB the power to impose penalties, obtain injunctive relief and impose other remedies for violation of the Regulations. Moreover, the state legislature budgets and allocates money to CARB to carry out its enforcement functions. The Port has neither the legal authority nor the allocated resources to conduct investigations, hold hearings, determine violations or enforce such regulations.

The Port, in its capacity of landlord, may and does require its tenants to follow all applicable laws in their use of Port properties. For violation of lease conditions, the Port may impose penalties under its powers under the City Charter and, ultimately, may evict a tenant. However, the primary power and resources to investigate, to determine that a violation under a state or federal regulation has occurred, and to enforce lies with state or federal enforcement agencies with legal enforcement powers.

As a trustee of state property, the Port must use tidelands and assets for purposes that are beneficial to the state as a whole (for example, for harbor purposes). The "Tidelands Trust Doctrine" is rooted in the premise that the Port acts as a trustee of state-owned lands and assets when it manages the tidelands and all assets derived from such state lands. The Port is prohibited under the Doctrine to use the proceeds of the trust for "local purposes,"

"general municipal purposes," or "general municipal improvements."[1] In adopting and implementing its air quality policies, plans and goals, the Port is administering the tidelands for the benefit of the state as a whole.

The Port strictly enforces a policy of nondiscrimination[2] in carrying out all its projects, programs and activities, including the adoption and implementation of its air quality plans and goals.

10.2 Port Implementation Approaches

Most of the emissions-reduction projects needed to reach the MAQIP goals will be initiated by the Port's tenants and related businesses in response to regulations and standards enacted by CARB, BAAQMD, EPA, and the IMO. Government agencies develop their regulations through a feasibility analysis and detailed design for implementation, along with a legal justification. Furthermore, agencies have the legal authority to enforce compliance with adopted regulations according to the regulatory deadlines.

The Port requires compliance with all federal, state and local laws, regulations and permits in its tariff, lease and other agreements, and routinely works with its tenants and business partners to monitor compliance and to address any concerns that may arise. Initiatives that are not required by regulations, but that assist in meeting the MAQIP goals, may be implemented by the Port through other means, including: (1) voluntary actions, (2) incentive programs, (3) lease or tariff provisions, (4) CEQA mitigation measures, and (5) other mechanisms. As described in Table 10-1, each approach may be appropriate, depending on the circumstances.

BAAQMD and Port trucker outreach workshop, 2008.

[1] City of Long Beach v. Morse, 31 Cal.2d 254 (1947).

[2] Title VI under the Civil Rights Act of 1964 (42 USC 2000(d)-2000(d)(1)) declares it to be the policy of the United States that discrimination on the ground of race, color, or national origin shall not occur in connection with programs and activities receiving Federal financial assistance and authorizes and directs the appropriate Federal departments and agencies to take action to carry out this policy.

Table 10-1 MAQIP Implementation Approaches by the Port of Oakland		
1	Voluntary Actions	Meet with tenants and business partners to encourage them to take voluntary actions to improve air quality. This approach could be undertaken at any time.
2	Incentive Programs	Develop incentive programs for tenants and business partners. Incentives may or may not be financial, and could be enacted through an MOU, tariff, lease supplement, contract or other mechanism. All incentives would be subject to a feasibility analysis and to the availability of funding for program administration and implementation.
3	Lease or Tariff Provisions	Negotiate with tenants when leases are open for renewal to provide an opportunity for commitments by tenants to specific measures. A proposal could be submitted by a tenant or requested by the Port when a lease expires. Once a tenant and the Port agree on lease terms, both parties must abide by the agreement, and the Port can use its existing authority to enforce lease provisions. However, not all business partners of the Port are subject to leases. The Port's tariff applies more widely to users of the Port's terminals, so is a more appropriate means for instituting seaport-wide measures.
4	CEQA Mitigation Measures	Include initiatives as part of a project description or as mitigation measures in a CEQA document covering maritime area development. Mitigation measures must be feasible and minimize the significant adverse impacts of a project. The measures may incorporate phasing and performance standards that may be accomplished in more than one specified way. The development project proponent is normally responsible for implementing and managing mitigation measures. Tenants, business partners or others responsible for air quality mitigations will be urged to select projects based on the MAQIP initiatives.
5	Other Mechanisms	Undertake initiatives as Port-sponsored projects through grants and Port funding, such as a user fee, if available.

10.3 Port Organizational Capacity and Constraints

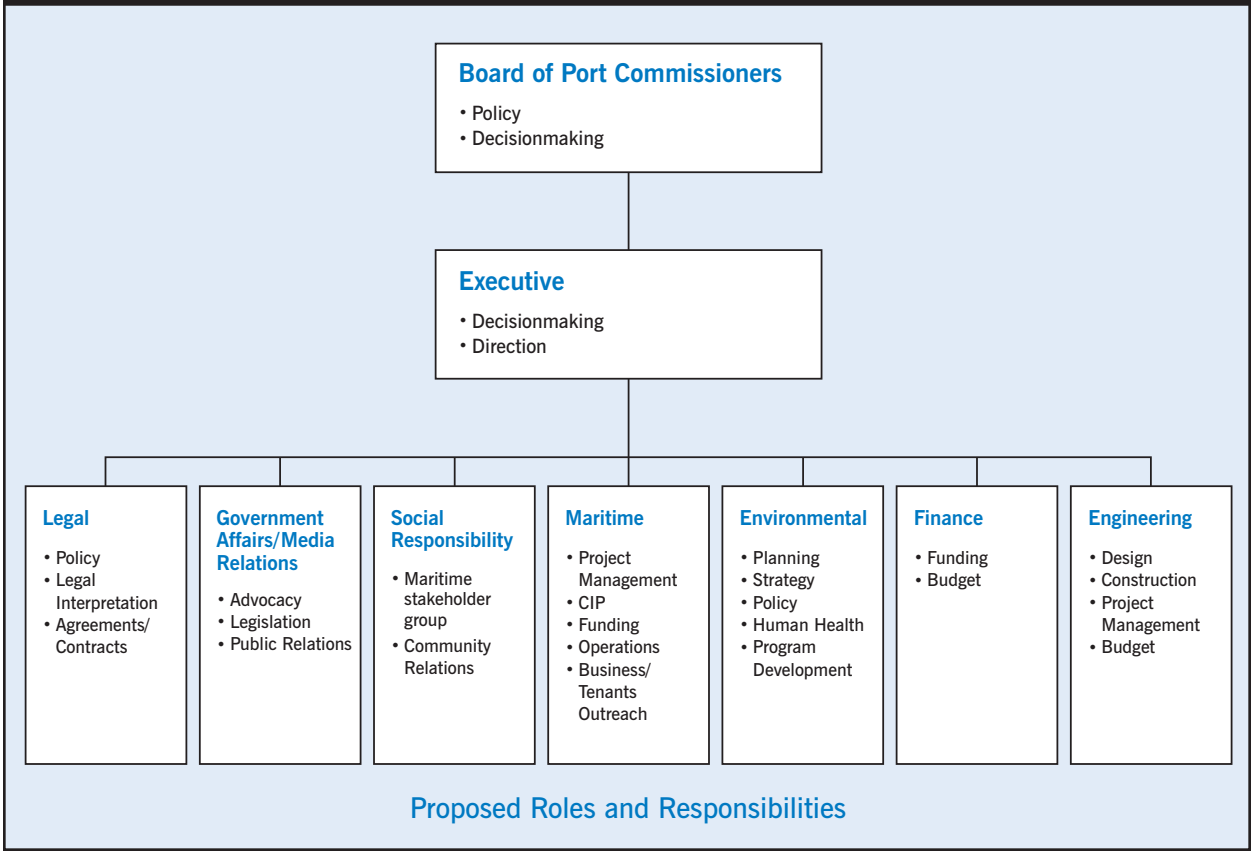
The Port and many of its business partners have demonstrated the ability to initiate, manage and complete emissions reductions projects. Clear coordination with all stakeholders is vital to ensure successful implementation and monitoring of projects and reporting on progress towards the MAQIP emissions and health risk reduction goals. As noted previously, this section addresses the Port's organizational capacity, and not that of its business partners.

The Port MAQIP organization chart in **Figure 10-1** identifies a preliminary schematic structure. As a first step, organization roles and responsibilities need to be assigned. The organization chart shows Port divisions with their primary roles and responsibilities as they pertain to implementation of the MAQIP goals, programs and projects. Each project requires participation to varying degrees from almost every division.

While the number of dedicated air quality staff at the Port does not approach that of the much larger Southern California ports, staff at all levels and across many divisions participate to varying degrees in air quality-related policy, programs, projects and related activities, demonstrating the value placed in the organizational culture on air quality:

- Executive
- Maritime
- Environmental Programs and Planning
- Social Responsibility

Figure 10-1 Port of Oakland MAQIP Organization Chart



- Engineering
- Government Affairs
- Aviation
- Port Attorney
- Corporate Administrative Services (Media Relations)

Participation from beyond Port internal resources is needed, as illustrated in **Figure 10-2**. That figure shows the roles and responsibilities of both the Port and its tenant, business, community, environmental, and agency partners by the functional areas to which they can best contribute to realizing the MAQIP goals.

Some of the internal and organizational challenges that could affect timely implementation of projects and meeting goals are:

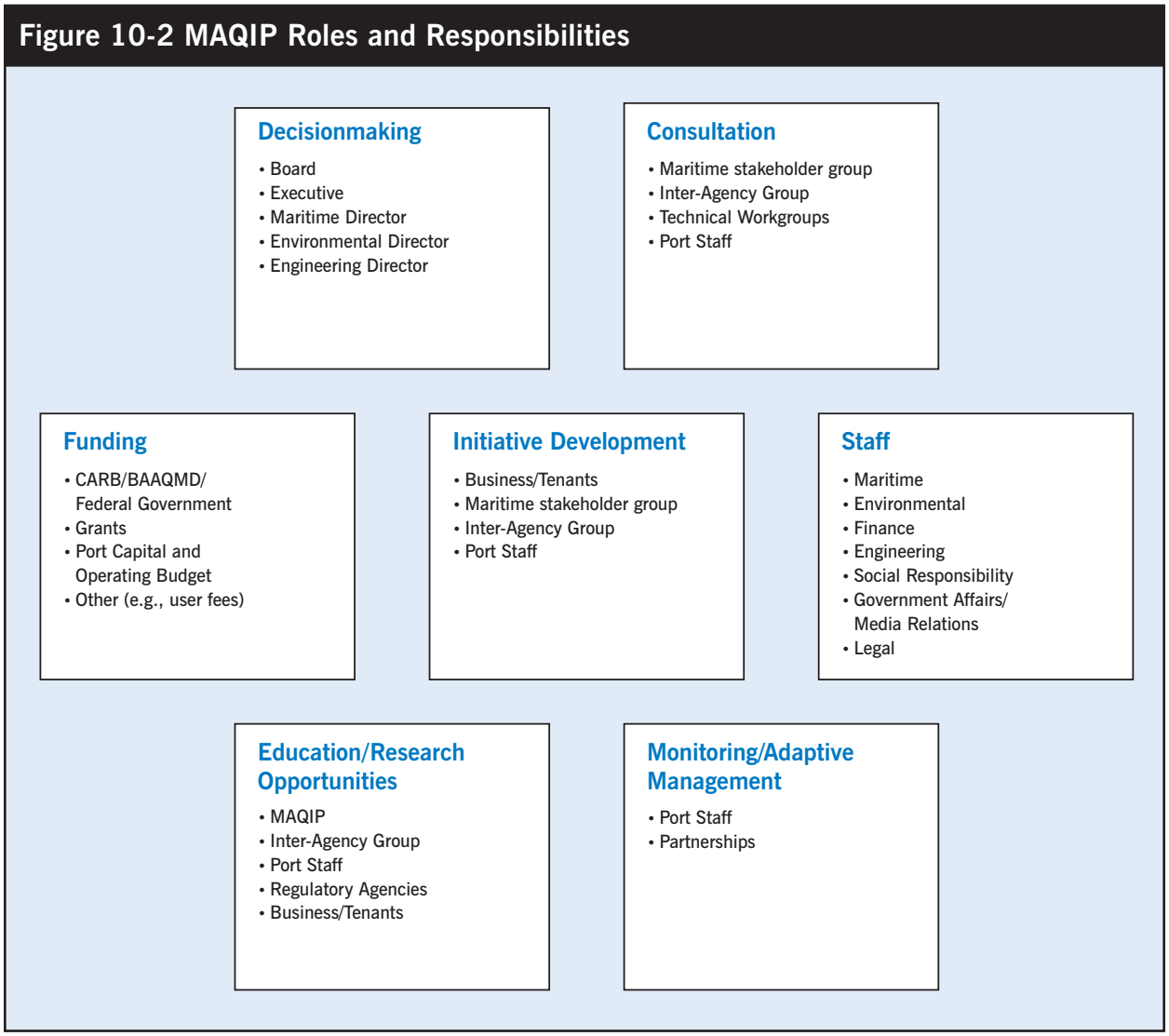
Budget: The challenge of identifying sufficient timely funding sources is possibly the most serious barrier to early and extensive implementation of emissions reduction projects.

Staffing: The coordination needed among Port divisions to implement projects can be impeded if staff are not available to assist when needed. For example, when grant opportunities are announced, there is usually a short period in which to investigate the guidelines, determine suitability, line up partners and prepare a grant application.

Technical Expertise: When staff do not possess the technical knowledge to conduct a project or program (for example, health risk assessment), it is necessary to hire consultants with that experience. Besides the cost implications, it takes several months to find and hire appropriate firms through the mandatory contracting procedures.

The Board of Port Commissioners and the Port's Executive Director understand these potential challenges and will work toward overcoming them in order to meet the Board's MAQIP-driven goal of reducing community health risk from seaport operations.

Figure 10-2 MAQIP Roles and Responsibilities



10.4 Port Project Selection

Initiation of an emissions reduction project (or program) at the Port requires:

- Identification of a project
- Screening and feasibility analysis of the project
- Recommendation and decision to undertake the project

The flowchart in **Figure 10-3** maps out the expected steps needed to move Port MAQIP initiatives from proposals to successful implementation. It conceptually illustrates the stages from project identification through monitoring and adaptive management and indicates the primary responsibilities for each stage.

Demonstration of new engine technologies at trucker outreach workshop, 2008.

10.4.1 Identification of Port Projects

Most of the emissions reduction projects in the seaport area will be undertaken by the Port's tenants, customers and other maritime-related businesses. Within its funding capability, the Port will initiate some emissions reduction projects. The initiatives identified through the MAQIP development process (**Table 9-3**) are expected to comprise the source of most of the Port's selected air quality improvement projects initially. Later, members of a maritime stakeholders group (Section 11.5), including tenant and community representatives and Port staff, may propose

new MAQIP initiatives. Ideas for initiatives could come from agency or private industry-sponsored research or pilot programs, from other ports or maritime-related businesses, and from environmental firms, among other sources. Projects emerging from the Ports of Los Angeles and Long Beach's Technology Advancement Program will be of particular interest.

10.4.2 Screening and Feasibility

Once a new initiative is proposed, it will go through a screening process and feasibility analysis. The screening criteria developed by the MAQIP Task Force (Table 9-2) will be used to assess the general potential for emissions and health risk reductions. Those criteria were used to screen and select the initiatives in Table 9-3. Tenants and maritime-related businesses will also be urged to use the screening criteria.

All projects under consideration for selection, including those emerging as new initiatives, will be evaluated for feasibility, including factors such as:

- Overall cost of a project including administration, availability of funding, return on investments, and similar financial considerations
- Cost-effectiveness of the expected emissions reductions, based on the cost of the measure compared to the emissions reductions
- Practicability of introducing new equipment, fuel or other measures
- Availability of new technologies and compatibility with existing operations
- Legal feasibility

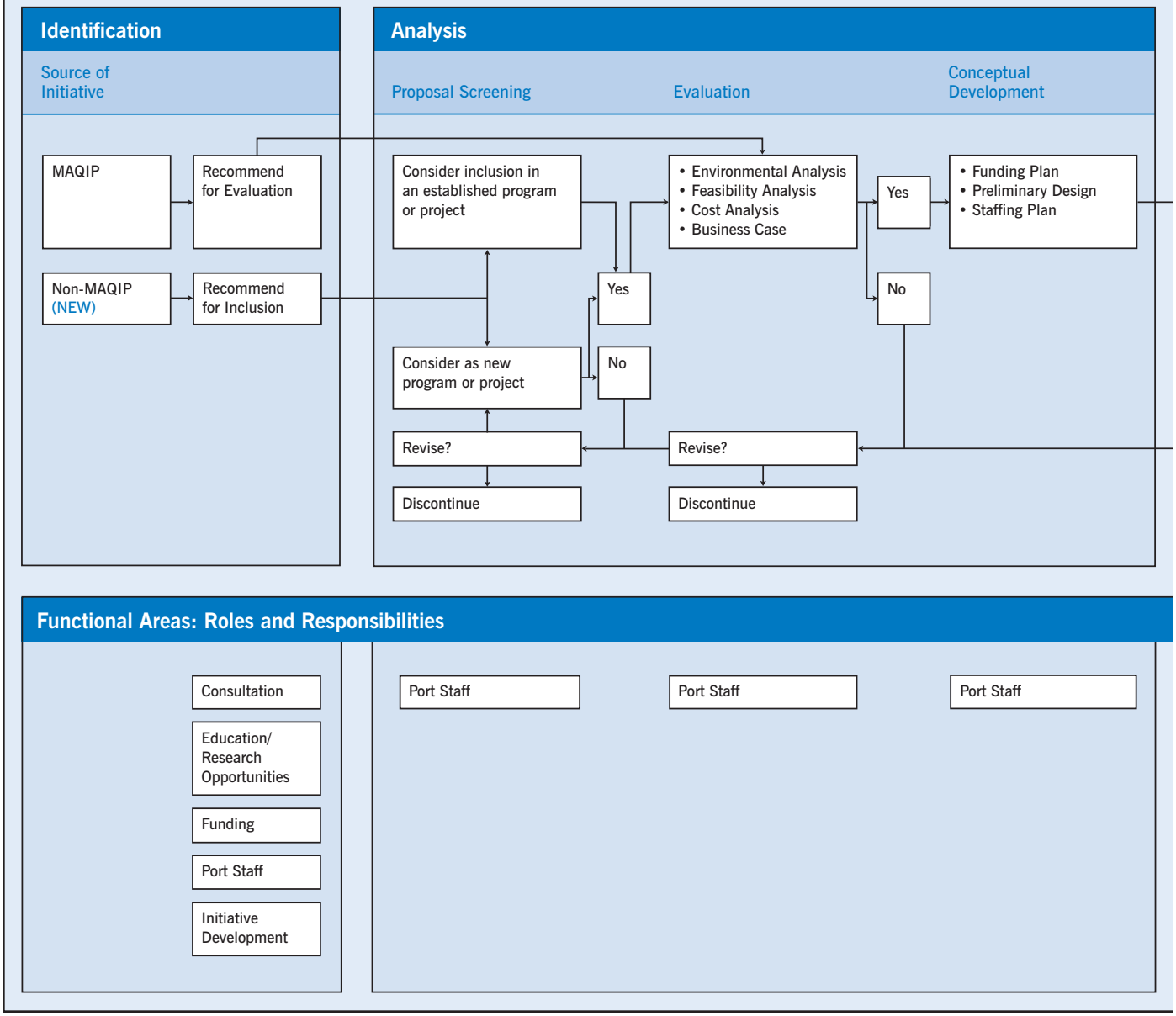
The information and planning needed to conduct a feasibility analysis will also contribute to the preparation of a more detailed project description that can be used as the basis for making a decision about whether to proceed with a project.

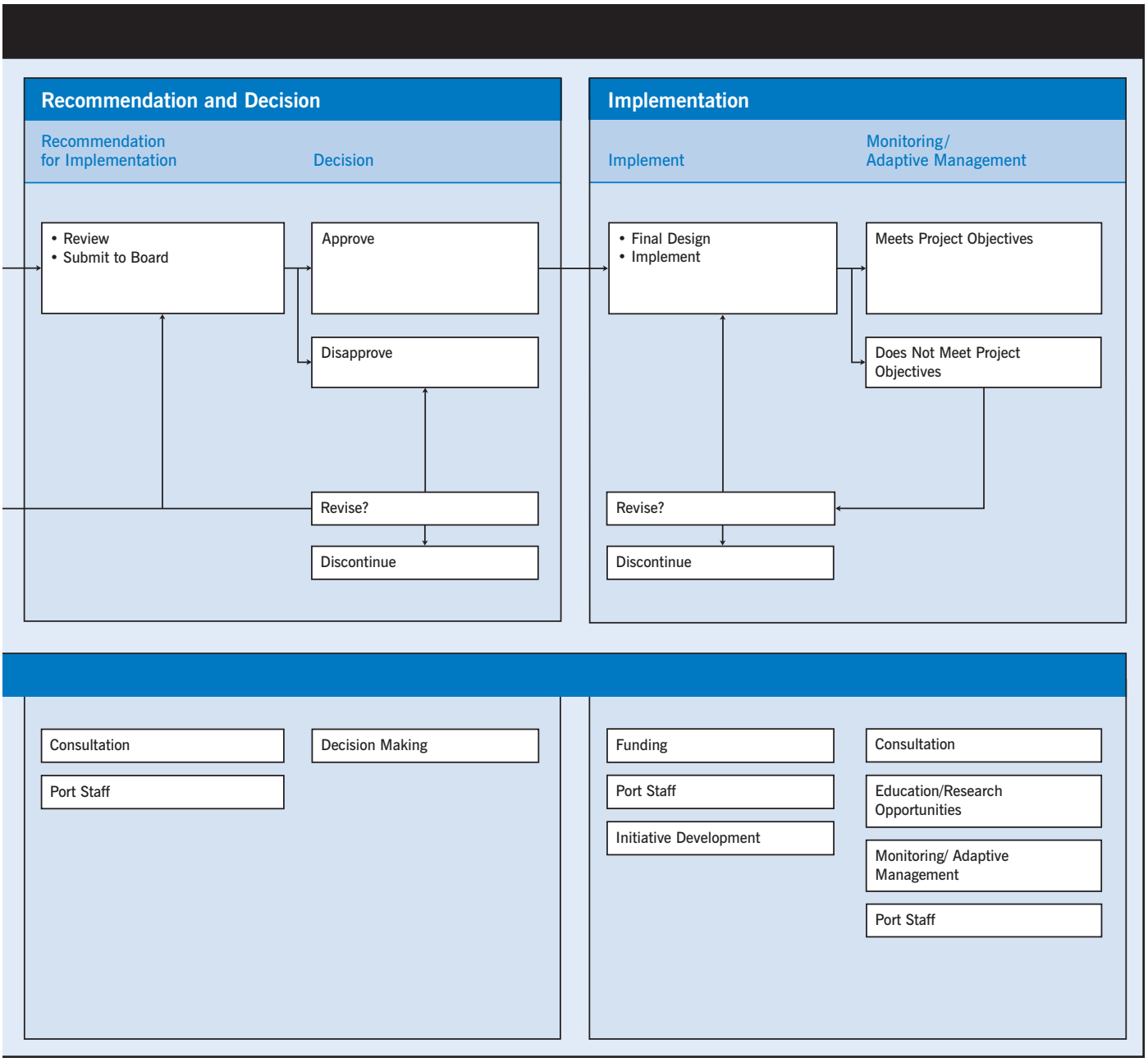
10.4.3 Recommendation and Decision on Port Projects

A maritime stakeholder group will assist by reviewing proposed projects that have undergone a feasibility study and advising on adoption. It is possible that some project opportunities could arise that require an immediate decision by the Port. Examples of such opportunities might be proposals from tenants to partner in a specific project that will support the emissions reduction goals or projects supported by federal, state or local grant funding programs with short-term deadlines. Such projects would be presented to maritime stakeholders for review at the earliest opportunity.

While it is up to Port management and the Board of Port Commissioners to decide whether to proceed with a project, the recommendations of a stakeholder group would be considered in their evaluations.

Figure 10-3 MAQIP Initiative Development Flowchart (Conceptual)




Recommendation and Decision
Recommendation for Implementation
Decision
• Review
• Submit to Board
Approve
Disapprove
Revise?
Discontinue
Implementation
Implement
Monitoring/ Adaptive Management
• Final Design
• Implement
Meets Project Objectives
Does Not Meet Project Objectives
Revise?
Discontinue
Consultation
Port Staff
Decision Making
Funding
Port Staff
Initiative Development
Consultation
Education/Research Opportunities
Monitoring/ Adaptive Management
Port Staff

10.5 Port Project Management

Any project that the Port undertakes, including emissions reduction projects, is subject to a series of approvals and reviews to ensure that Port funds are used in compliance with the Port Charter and Board policies and that all actions comply with the law.

Some of the elements typically needed to initiate a project at the Port include:

- A recommendation and decision to undertake a project
- Assigned staff to manage and conduct the work associated with the project (for example, coordinate with internal and external stakeholders, manage consultants or contractors, conduct the project feasibility analysis, prepare application materials, apply for grants, prepare board agenda reports, write and execute contracts, pay bills, review work products, prepare CEQA/NEPA documentation and permit applications and prepare and update detailed work plans)
- Funding from internal or external sources (for example, annual operating budget, capital improvement budget, grants)
- Board of Port Commissioners review and authorization (setting policy, expenditure of Port funds, CEQA findings, acceptance of permit conditions, execution of agreements such as contracts, MOUs, and leases, among other requirements).

Other agencies, private companies and non-profits have their own formal or informal processes for selecting and launching projects, but each is likely to require the same broad elements of decisions, staffing, funding and approvals.

Berths 67-68 (Howard Terminal), 2004.

Once projects are approved, project managers within the Port generally establish and track the budget, schedule, and progress towards completion and work with the Port Attorney's Office on legal agreements, if required. Emissions reductions projects, such as the Port's Container Terminal Equipment Retrofit and Replacement Project and the Truck Replacement Program, usually require contracts with equipment providers, equipment recipients, and salvage yards depending on the purpose of the program. Grant funding normally requires agreements with granting agencies, as well as preparation of a program designed to comply with the terms of the grant.

For emissions reduction projects, guidelines are often prepared to clarify the purpose, eligibility requirements, cost-effectiveness criteria and participant obligations after funding. Examples of guidelines are the Port of Oakland Truck Replacement Program guidelines[3] and the BAAQMD Goods Movement Program's truck retrofit and replacement guidelines.[4] Communications and outreach plans are needed for projects targeted to external clients such as truckers or terminal operators. Finally, a detailed and frequently updated schedule-based work plan is important to ensure coordination of all of the necessary elements of the project.

Tracking compliance with the established schedule is particularly important once an emissions reduction project is underway since delays could result in the loss of early action benefits. Furthermore, delays could indicate that a project is not yet technologically feasible, that clients perceive costs as outweighing benefits, or that unexpected complications must be managed. All of those reasons could trigger the need to redesign the project through adaptive management (see Section 11.1.1).

10.6 Funding and Investment

Achievement of the MAQIP goals by 2020 will be costly, with millions of dollars of costs borne by the Port's tenants and related businesses and customers as they upgrade equipment and take other steps to comply with state, federal, and international air quality regulations and measures.

With the phase-in of CARB's regulations over the next few years, Port-related businesses and tenants will be required to invest in cleaner equipment to meet new engine and emissions standards. Some of the air quality regulations require fleet-wide retrofits or engine or equipment replacements, so businesses may need to accelerate investment cycles, with a focus on eliminating the oldest equipment first. The costs of such equipment investment are assumed by each business.

As a result of the volatile 2008 U.S. and global economies, the Port, its tenants and customers are facing new business and financial challenges. To implement additional feasible initiatives that exceed regulatory requirements, the Port and its partners will therefore need to find additional sources of funding. The scale of costs can be estimated by looking at the Ports of Los Angeles and Long Beach's Clean Air Action Plan, which is estimated to cost $2 billion over the next five years for emissions reduction measures. Given that benchmark, it is clear that new funding mechanisms and close partnerships with federal and state funding agencies are needed to pay for the Port's MAQIP goals. Realizing this need, BAAQMD launched its "Green Ports Initiative," with its emphasis on funding emissions reduction measures along with enforcement of air quality regulations.

[3] http://portofoakland.com/pdf/envi_prog_06_2.pdf

[4] http://www.baaqmd.gov/pln/grants_and_incentives/gm/index.htm

10.6.1 Grant Funding Sources

Grant funds are generally made available on an annual basis through a competitive application process managed by the granting agency. Funding is normally subject to specific eligibility, usage and matching funds criteria that can be difficult to meet, particularly in the context of Port operations where the Port does not own or operate the equipment eligible for grant funding. The Port, public agencies, community groups and others can partner with private entities to obtain funds, but ultimately, it is the private owner or operator who must agree to meet the requirements of the grant, (including implementation deadlines, owner contributions, operational restrictions and other terms).

The Port and its business partners may seek grants in the future for emissions reduction projects depending on the availability of Port or other resources to provide any requisite financial matches.

Proposition 1B: the Highway Safety, Traffic Reduction, Air Quality, and Port Security Bond Act of 2006 authorized $19.925 billion of State of California general obligation bonds for specified purposes, including high-priority transportation corridor improvements, trade infrastructure and port security projects. It also authorized the legislature to appropriate $1 billion to CARB to reduce air pollution emissions and health risk from freight movement along California's priority trade corridors. CARB's 2007-08 fiscal year budget included the first installment of $250 million for air pollution control projects. CARB adopted Program Guidelines in early 2008 to ensure that the funding program achieves its statutory objectives of "early and extra" emissions reductions. Emissions reduction projects from diesel engines in trucks, locomotives, ships, harborcraft, and cargo-handling equipment are potentially eligible for funding over the Proposition 1B funding period. The program can only fund emissions reductions "not otherwise required by law or regulation."[5]

The BAAQMD was awarded $3.4 million by CARB in early Proposition 1B grant allocations to retrofit trucks that operate at the Port and to install shore-side power at two berths at the Port. An additional $5 million from CARB was awarded to the BAAQMD to provide incentives to Port drayage trucks owners, with a further $5.5 million potentially available from another program. The Port and BAAQMD are working collaboratively on this effort, with a goal of retrofitting up to 1,000 drayage trucks with the incentives. It is expected that Proposition 1B funding will be critical over the next few years to early implementation of projects at the Port and to introduction of measures that reduce emissions beyond what is required by regulations.

The Carl Moyer Memorial Air Quality Standards Attainment Program provides incentive funds for the incremental cost of replacing older engines with newer and cleaner engines, adding control equipment like particle traps, and purchasing new vehicles that are cleaner than the law requires. Equipment owners must pay part of the cost. Eligible projects include cleaner on-road, off-road, marine, locomotive, and certain stationary and portable engines. CARB administers the program at the state level and allocates funds to local air pollution control districts. The BAAQMD sets priorities, reviews applications and awards funds in the Bay Area. A related funding program (AB923) allows air districts to increase motor vehicle registration fees by $2 to implement Carl Moyer Program projects. Highest priority will be given to highly impacted communities, including West Oakland. There are a number of eligibility criteria and restrictions that affect the ability of projects at the Port of Oakland to obtain funds.

[5] Goods Movement Emission Reduction Program, California Health and Safety Code, 39625.5 (a)(1).

The Transportation Fund for Clean Air (TFCA) is a grant program funded by a $4 surcharge on motor vehicles registered in the Bay Area. The surcharge generates approximately $22 million per year in revenues. The purpose of the TFCA program is to provide grants to implement the most cost-effective projects in the Bay Area that will decrease motor vehicle emissions, and thereby improve air quality. Because the TFCA program is aimed at reducing emissions from on-road vehicles, it is not likely to be a major source of funding for MAQIP projects, other than for clean truck programs.

The West Coast Collaborative is a program within the EPA's National Clean Diesel Campaign to coordinate diesel emissions reduction funding. The federal Diesel Emissions Reduction Act (DERA) authorized $200 million per year nationwide for 5 years for implementation of diesel emissions reduction projects. Perhaps more important, the West Coast Collaborative is also a forum for ports, businesses and agencies to discuss West Coast diesel technologies, challenges and successes.

Girls and Berths 60-63 (APL Terminal) from Port harbor tour boat, 2006.

10.6.2 Port Funding Sources

Historically the Port's principal funding sources for maritime environmental improvement activities have been operational revenues and bond funding secured by such revenues. Because these revenue sources are insufficient to meet the needs of the MAQIP for the foreseeable future, the Port is evaluating new funding and financing mechanisms, including but not limited to user fees. A user fee could be used to fund key infrastructure and environmental projects and generate matching funds for Proposition 1B grants. It is important to note that because projects funded through a user fee may have to be financed on a pay-as-you-go basis, the timing of any fee collection may be directly related to the scope and pace of project implementation. The Port may not borrow to pay for facilities it does not own, such as trucks, but may borrow to pay for Port-owned electrical generation facilities[6].

Trucks on Port of Oakland container terminal, 2002.

10.7 Timeline

While individual projects benefit from detailed schedules as they approach implementation, a more conceptual timeline is appropriate for this air quality master plan. Table 10-2 outlines a general timeline for the Port's emissions reduction strategies presented in Section 8. The strategies range from projects that are currently underway (with more detailed schedules in Table 9-4) to ambitious programs (such as CTMP). For some projects, the timeline is a best guess, based on an estimated schedule and expected funding availability. Many factors can affect the timely completion of projects; the most common are funding and staffing limitations and technological feasibility (such as CARB verification of equipment, market availability of equipment and installers, unsuitability of equipment for a particular situation, and delays in research and development of promising technologies).

[6] The Charter of the City of Oakland provides that the Port may finance Port facilities and issue revenue bonds for harbor, airport, property and equipment of the Port. See Sections 706(24) and 718(2).

Table 10-2 Timeline of Emissions Reduction Programs and Projects[a]

	Completed	Scheduled Implementation			Early Action for Emissions Reduction
		Underway	Near-term 2009-2012	Long-term 2013 & beyond	
Trucks					
Retrofit and/or replacement of drayage trucks (BAAQMD)		•	•		yes
Port Vision 2000 drayage truck replacement	•				yes
Comprehensive Truck Management Program (CTMP)		•	•	•	yes
• Provision of truck parking in Port area	•	•	•	•	
• Enforcement of truck parking and operations restrictions on neighborhood streets		•	•	•	
• Truck registration			•		
• Truck idling outreach and education		•			
Truck work groups		•	•	•	
LNG equipment and infrastructure		•	•		yes
Ships					
Infrastructure/equipment requirements for shore power			•	•	
Voluntary compliance with fuel regulations (carriers)		•	•	•	yes
Voluntary use of low-sulfur fuel (APM)		•	•		yes
APL/Eagle Marine Services shore power			•	•	yes
Alternative fuel shore power (2007 pilot; future)	•		•	•	
Rail					
Clean switcher locomotive engines		•	•		yes
Harborcraft					
Tugboat engine replacements	•				yes
Electrification projects (electric dredgers)	•				yes
Cargo Handling Equipment					
Electric-powered rail-mounted gantry cranes				•	
Container Terminal Equipment Retrofit and Replacement Program (CTERRP)	•				yes
Electrification projects (container cranes, refrigerated container plugs)	•				yes

[a] All dates are estimated. Includes Port, tenant and other stakeholder projects.

Table 10-2 Timeline of Emissions Reduction Programs and Projects (continued)

	Completed	Scheduled Implementation			Early Action for Emissions Reduction
		Underway	Near-term 2009-2012	Long-term 2013 & beyond	
Other Equipment and Fuels					
Low-emissions construction equipment		•	•		yes
Port-owned vehicle fleet		•			yes
CNG station	•				
Repower and retrofit West Oakland buses	•				yes
Operational Efficiencies					
Marine terminal and rail yard improvements			•	•	
Near-dock rail yard (OIG)	•				
Maritime Materials Management Program		•			
Policy and Education					
Participate in air quality policy and funding forums		•			
Health risk assessment staffing at the Port		•			
Research					
Investigate technologies and grant opportunities		•			
Track MAQIP progress through periodic emissions inventories			•		

Monitoring, Reporting and Next Steps

MAQIP

11

Section 11: Monitoring, Reporting and Next Steps

Monitoring takes on multiple meanings in this plan:

- Monitoring the execution of an emissions reduction project
- Monitoring the results of an emissions reduction project
- Monitoring the progress toward achievement of the MAQIP goals

To monitor effectively, business partners, funding agencies, community members and other stakeholders must be kept informed through reporting. Given the effort invested in developing the MAQIP by the Task Force members, it is important that those stakeholders, in particular, be kept informed of the Port's and tenants' progress towards meeting the MAQIP goals.

11.1 Project Execution Monitoring and Reporting

During the planning and execution of a Port-sponsored emissions reduction project, the staff project manager is responsible for providing periodic updates on the project status. For example, projects funded through the Vision 2000 Air Quality Mitigation Program are reported on formally through annual or more frequent written reports to West Oakland Neighbors and other community members. Informal status reports are provided verbally in meetings with air quality, community and maritime stakeholders or through e-mail communications. Those informal communications often provide an opportunity to discuss project issues and approaches with stakeholders. The planned maritime stakeholder group will be a dedicated forum for sharing the status of a project during development and execution and discussing issues associated with the project.

Projects sponsored by the Port's business partners may follow a similar monitoring and reporting process. The Port will continue to meet regularly with tenants and partners. Tenants will be asked to report periodically on the status of air quality improvements, regardless of whether they are participating in a Port or grant-funded incentive program.

Because of the acute interest by the residential and environmental communities in emissions reduction projects, the Port intends to provide a written status report on those projects at least annually. Reports will be presented to the Board of Port Commissioners or one of its committee and will be made available to the community on the Port's website. The Port will also request updates from tenants on their programs and projects to include in status reports. Informal reporting and discussions will continue through both existing and potentially new forums.

Proposed amendments to the MAQIP plan itself, including control measures and policy direction, will be in the form of Supplements, subject to Board consideration and approval.

11.1.1 Project Adaptive Management

A benefit of discussing projects with knowledgeable stakeholders during the planning and early implementation stages is that problems can be detected and analyzed more readily than without their participation. Continually evaluating the progress and early results of a project, then adjusting actions accordingly, can create a more successful effort than originally envisioned or salvage a complicated project. Port staff have used adaptive management approaches that range from revising project guidelines (for example, changing the cost-effectiveness criteria or allowable engine years in a truck replacement project), to canceling a project entirely (for example, when it did not make financial sense for truckers to participate in an engine repower program).

11.2 Project Results Monitoring and Reporting

Emissions reductions occurring as a result of a specific project can normally be estimated with some accuracy, especially if periodic reporting is required as part of participation in the project. Collecting data periodically from project equipment recipients and estimating emissions reductions can provide milestones towards the goal of emissions reduction above and beyond those required by regulations. For consistency, the emissions calculator used to qualify a project could be used to estimate later emissions, although methodologies and emission factors are occasionally revised.

Results of follow-up monitoring will be reported through annual or more frequent written status reports to the Board and the community.

Trucks at a distribution center, 2003.

11.3 MAQIP Goal Monitoring and Reporting

Measuring the Port's overall progress toward meeting its goals requires periodically updating the Portwide emissions inventory for each source category (ships, harborcraft, terminal yard equipment, trucks and trains), then linking the Port's maritime emissions to its community health risk factors to estimate changes in health risk. Reports from the CARB, BAAQMD, and EPA on the results of their emissions reduction regulations will supplement the Port's emissions inventory, as will BAAQMD ambient air quality monitoring data.

The Port will reconvene the MAQIP Task Force in five and ten years to review progress towards the plan's goals.

11.3.1 Emissions Inventory

A key element in tracking implementation of the MAQIP involves development of regular updates to the Port emissions inventory. The Port prepared a comprehensive inventory of pollutant emissions from Port-related ships and associated harborcraft activity as well as cargo handling equipment, trucks, and locomotives operating on Port property that was representative of activity occurring in 2005. As new emissions control technologies are introduced in response to regulations and other initiatives undertaken by the Port, its tenants or other groups, it will be necessary to track the resulting reductions in emissions with respect to the MAQIP goals. To accomplish this, the Port intends to update the emissions inventory on a regular basis. Current plans call for inventory updates to be prepared at two to three year intervals, beginning with the calendar year 2008 emissions. Given the time it takes to compile the inventory, there will be a time lag of at least 12 months after the close of the inventory year before the inventory results can be reported. The frequency of the inventories is subject to change depending on prioritization of Port resources.

Development of a full inventory for sources at the Port is a complex process involving collection of data on all emission-generating activities (ship calls, berthing times, truck trips, etc.), equipment (engine types and sizes exhaust after-treatment devices, etc.), operating parameters (engine loads, travel speeds, idling times, etc.), and associated emissions factors. To provide regular emission updates with reasonable efficiency, the Port is evaluating the feasibility of developing a streamlined process by which the updated emissions can be more easily generated based on data to be supplied by the Port's tenants. The next inventory of the seaport will likely include an analysis of greenhouse gases and more detailed information on Port-related trucks.

11.3.2 Health Risk Reduction

With regularly updated emission inventories for Port sources, the process of tracking the degree of risk reduction in the West Oakland community relative to the Port's goal on an approximate basis is relatively straightforward. Results from CARB's West Oakland risk assessment study, summarized in **Table 6-3**, provide the quantitative link between changes in emissions for each major source group and the excess cancer risk from exposure to DPM emissions experienced by West Oakland residents. The data in this table can be used to revise the estimated cancer risk based on the revised emission inventory. In this way, progress toward the diesel PM cancer risk reduction goal can be periodically tracked without repeating the resource-intensive health risk assessment effort.[1]

[1] It should be noted that this approach will only yield an estimate of risk reduction because it does not account for changes in the spatial distribution of sources which may occur over time, for example, development of the former Oakland Army Base.

11.3.3 Ambient Air Monitoring

The BAAQMD air monitoring program is aimed at collecting ambient air data to better understand relationships between emissions, pollutant concentrations in the air, exposure, and ultimately health risk. The Port will assist the BAAQMD in this program, where and when feasible.

11.3.4 Reconsideration of MAQIP Strategies[2]

To ensure that emissions and health risk reductions are occurring in the Port area at a pace to meet the MAQIP goals, the Port intends to provide annual reports to a maritime stakeholder group on progress toward achieving the MAQIP goals and will prepare periodic emissions inventories (see Section 11.3.1), among other reporting mechanisms. All three approaches to health risk reduction—early actions, regulatory compliance, and measures above and beyond regulatory requirements—will be included in the reports.

Proposed amendments (i.e., material changes) to the MAQIP plan itself, including control measures and policy direction, will be in the form of Supplements, subject to Board consideration and approval.

The Port will also reconvene the MAQIP Task Force (or a successor group) in five years upon completion of the 2012 emissions inventory to compare the results to the 2012 interim goals and to review likely progress toward the 2020 goals. If it appears that the Port is not on track to meet the expected reduction targets, the Task Force will assist the Port in reconsidering and refining the MAQIP strategies. In the first five years, the focus will be on early action measures and on regulatory compliance (see Section 7.2).

The group will be reconvened in about ten years, as well, about two years before the 2020 planning horizon, for another review of progress, strategies, compliance success and new technologies. As 2020 approaches, the emphasis will be on regulatory compliance and on measures above and beyond regulatory requirements.

During intervening years the maritime stakeholder group (see Section 11.5) will assist the Port in identifying emissions reduction initiatives for implementation.

11.4 Report Summary

The Port commits to regular reporting as outlined in **Table 11-1** to facilitate continued involvement of stakeholder and interagency groups and to update the community and public on emissions and risk monitoring. Major reporting tasks will include tracking growth of Port activity and emission reductions and documenting progress toward implementation of the MAQIP. The targeted frequency for some resource-intensive reports, such as the emissions inventory and health risk updates, may be delayed if budget and staff are not available.

The Port will continue to meet regularly with tenants and partners. Tenants will be asked to report periodically on the status of air quality improvements, regardless of whether they are participating in a Port or grant-funded incentive program. The Port will continue to participate in agency-only discussions via an Interagency Group.

[2] This is a new section in response to a recommendation from Sandra Witt, Alameda County Health Care Services Agency, Public Health Department.

Table 11-1 MAQIP Reports			
Report	**Purpose**	**Frequency**	**Release Date[a]**
Reports to Maritime stakeholder group	Update Maritime stakeholder group on progress toward implementing the MAQIP and achieving the MAQIP goals	At least once per year	June 2009
Emissions reduction projects and programs status reports	Update the Board and community on the status of emissions reduction projects and programs	Anticipated at least annually	February 2009
Emissions inventory update	Provide regular updates on current levels of DPM, NOx and other pollutant emissions	Anticipated once every two to three years	2010 and every two to three years thereafter
Community health risk updates (using factors from 2005 West Oakland Health Risk Assessment)	Provide updates on community health risk reductions resulting from emission reductions at the Port	After emissions inventory releases	2010 and every two to three years thereafter
Tenants' progress reports on emission reduction initiatives	Provide information on progress made by the Port's tenants in implementing emission reduction measures	Periodically, depending on extent of tenant projects	Various
Port staff report to the MAQIP Interagency Group	Provides regulatory and other government agencies with regular updates on progress in MAQIP implementation	Quarterly 7/1/08 – 6/30/09 and at least annually thereafter	July 2008; November 2008

[a] Future release dates are estimated.

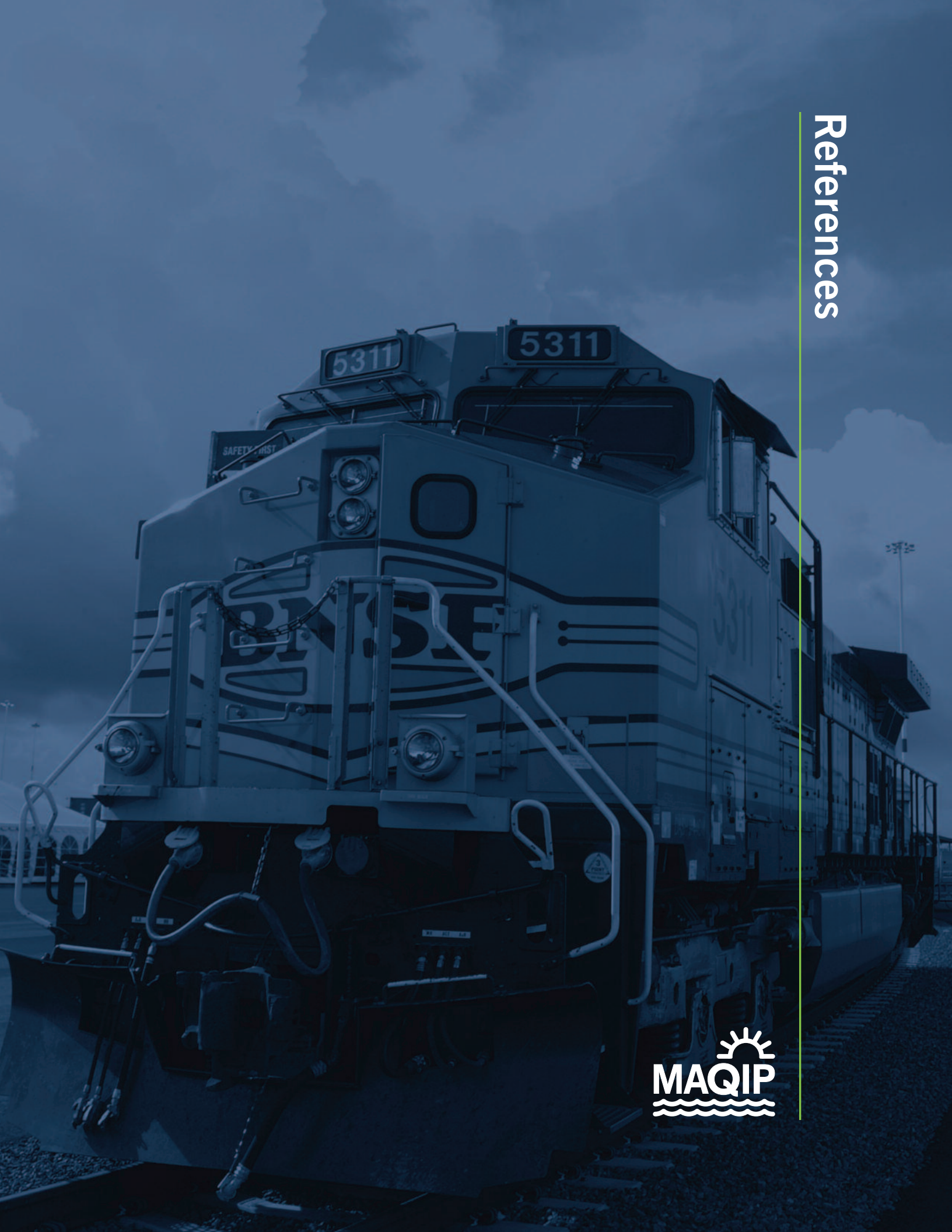
11.5 Ongoing Stakeholder Input

Port staff is currently conducting an inventory and assessment of all of its stakeholder groups in an effort to create a comprehensive maritime stakeholder group. This group would consider recommendations from the MAQIP, CTMP, Oakland Mayor's Task Force (2007) and the Oakland Partnership (sponsored by the Chamber of Commerce), and similar groups as they pertain to the Port and the neighboring community.

This maritime stakeholder group will consist of Port stakeholders representing: customers (maritime tenants and other maritime related businesses), government (regulatory, policymakers and interagency) and community (residential, environmental advocacy, local business and other special interest groups). The group intends to establish a comprehensive stakeholder forum where the Port can effectively inform its community and engage with its multiple stakeholders on Port Maritime projects, including MAQIP implementation.

This group will provide a formal opportunity for the Port and its stakeholders to meet on a regular basis. It is proposed that the group meet quarterly or semi-annually.

Berths 35-37 (Ben E. Nutter Terminal) from Middle Harbor Shoreline Park, 2003.



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See also Table 9-1: Source Documents Used for Developing Initial List of MAQIP Initiatives.

Appendices

MAQIP

Appendices

Appendix A: MAQIP Ground Rules

Appendix B: MAQIP Guiding Principles and Goals

Appendix C: MAQIP Screening Criteria for Air Quality Initiatives

Appendix D: MAQIP Proposed Lists of Primary Interest and Secondary Interest Air Quality Initiatives for Potential Implementation

Appendix E: MAQIP Interagency Group Matrix: Summary of Regulations and Agency Roles

Appendix F: 2005 Emissions Inventory, http://www.portofoakland.com/environm/airEmissions.asp

Appendix G: Future Year Emissions for all Pollutants and Growth Scenarios

Appendix H: Port of Oakland Maritime Air Quality Policy Statement, Board of Port Commissioners Agenda Report and Resolution

Appendix I: MAQIP Proposed Initiatives That Did Not Pass the Round One Screening (Organized by Category)

Appendix J: Comment Letters on June 2008 MAQIP draft, submitted by August 7, 2008

Appendix K: Proposed Near-Term Implementation Plan from MAQIP Interagency Group, November 19, 2008

Appendix L: Maritime Air Quality Improvement Plan (MAQIP) Supplement No. 1, April 7, 2009

APPENDIX A

Ground Rules

Ground Rules

Port of Oakland Maritime Air Quality Task Force

(Adopted by Task Force members June 11, 2007)

The following ground rules have been informed by confidential interviews conducted with a cross section of Port Maritime Air Quality stakeholders, as well as CONCUR's professional experience in convening other multistakeholder planning efforts. These ground rules are intended to foster and reinforce constructive interaction and deliberation among the Port Maritime Air Quality Task Force ("Task Force") members. They emphasize clear communication, trust building, respect for divergent views, creative thinking, collaborative problem solving, and the pursuit of mutual gains. The Task Force may decide to reconsider and revise these ground rules if they appear not to be serving the Maritime Air Quality Improvement Plan (MAQIP) process.

Task Force Nomination, Recruitment, and Representation

Task Force recruitment. Task Force nominations were invited from a broad cross section of interests. The nomination process was described at the April 10 Public Kick-off Meeting for the planning process. Descriptions of the nomination process and nomination forms were also:

- Posted on the CONCUR and Port of Oakland websites;
- Made available in several locations in West Oakland;
- Distributed via e-mail to several West Oakland community list-serves and to Port tenants.

Task Force Selection. Members have been appointed by the Executive Director of the Port of Oakland (Port). Task Force Co-Chairs Omar Benjamin and Margaret Gordon reviewed nominations and recommended nominees for appointment. (Task Force Co-Chair Jack Broadbent reviewed nominations but did not make specific recommendations on nominees.) Taken together, appointments were made to achieve a diversity of stakeholder perspectives, expertise, and ability to represent an important set of stakeholder interests, in accordance with the stated Task Force selection criteria.

Representation

- **Task Force Members**. Task Force members are appointed by Port Executive Director Omar Benjamin. Once appointed, Task Force members may choose to identify one alternate to participate on their behalf when unavailable. Alternates are expected to meet the same selection criteria as primary members, and will be confirmed by Port Executive Director Omar Benjamin.

- **Port and Bay Area Air Quality Management District (BAAQMD) Staff**. The Port and the BAAQMD are primarily represented through their Co-Chairs. Additional Port and BAAQMD staff will not be formally appointed as members of the Task Force, but will actively participate to inform and support Task Force deliberation.

- **Seating at Task Force Meetings**. During Task Force meetings, the following participants will be seated at the main table: Task Force members, Co-Chairs and their alternates, selected Port of Oakland and Bay Area Air Quality Management District staff as appropriate, technical consultants as appropriate, and project facilitators. Support staff, members of the public, and Task Force alternates in attendance will be seated adjacent to the main table.

Participation and Collaboration

Task Force members.

- Task Force members will make every effort to attend all of the Task Force meetings. Alternates are also encouraged to attend meetings in order to stay current with Task Force deliberations.

- Task Force members will work with their alternates to ensure that alternates are informed regarding Task Force deliberations. This will enable alternates to step in effectively as needed and keep the planning process moving forward. Task Force members will notify and coordinate with their alternates well in advance if they know they will miss a Task Force meeting.

- Discussion at Task Force meetings will principally involve Task Force members, Port and BAAQMD staff as appropriate, and technical consultants as appropriate.

- **Active, focused participation**. Every participant is responsible for communicating his/her perspectives and interests on the issues under consideration. Voicing these perspectives is essential to enable meaningful dialogue. Everyone will participate with no one dominating. Only one person will speak at a time. Everyone will help keep the meetings on track.

- **Respectful interaction.** Participants will respect each other's personal integrity, values and legitimacy of interests. Participants will avoid personal attacks and stereotyping.

- **Integration and creative thinking.** In developing, reviewing and revising work products, participants will strive to be open-minded and to integrate each other's ideas, perspectives and interests. Disagreements will be regarded as problems to be solved rather than battles to be won. Participants will attempt to reframe contentious issues and offer creative solutions to enable constructive dialogue.

- **Mutual gains approach**. Participants will work to satisfy not only their own interests but also those of other Task Force members. Participants are encouraged to be clear about their own interests and to recognize the important distinction between underlying interests and fixed positions.

- **Commitment to ground rules**. As a set of mutual obligations, Task Force members will commit to adhere to these ground rules once they are ratified. Task Force members are encouraged to help uphold and enforce these ground rules. If a Task Force member consistently deviates from these ground rules, that member may be replaced by another person upon confirmation by the Executive Director of the Port of Oakland.

Commitment to process

- Participants will make a good faith effort to achieving the goals of the planning process according to the proposed schedule. Goals of the process include developing for the Port Commission's consideration a MAQIP, which will articulate goals and objectives, identify candidate air quality improvement actions, and identify implementation and ongoing strategies for monitoring and adaptive management.

- Task Force members may suggest future Task Force meeting agenda topics either at or between meetings:
    1. At Task Force meetings: by making the suggestion during discussion of Next Steps at the end of the meeting.
    2. Between Task Force meetings: by contacting CONCUR and the Co-Chairs.

- Participants will review available meeting materials in advance of the meetings and come prepared to address the meeting objectives.

- Meetings will start on time to make full use of the allotted time. Task Force members agree to participate for the full duration of Task Force meetings. Participants who know that they will be absent will coordinate with their alternates as needed.

- Cell phones and pagers will be turned off or set to "silent" mode during Task Force meetings.

Task Force Decision Rules

- Task Force members recognize the need to make simple process agreements to move the effort forward. Task Force facilitators may use "straw votes" to track progress and help the group arrive at short-term decisions to propel the process forward in an efficient fashion.

- Task Force members will strive to achieve a high level of consensus in developing and advancing recommendations for the Port MAQIP. The intent is to strive for recommendations that earn broad support across Task Force members' interests, not to accord Task Force members a "de facto" veto on substantive issues. Unanimity will not be required, and the objection of a few Task Force members will not be grounds to impede movement.

- Documents that will be subject to Task Force adoption will be provided to Task Force members in advance of meetings.

Multi-interest Work Teams

- The Task Force Co-Chairs recognize that cross-interest group Work Teams may be an essential way to develop constructive, integrative work products between Task Force meetings. The aim of such Work Teams is to encourage multi-interest options and work products rather than work products put forward by a single bloc or interest group.

- Work Teams will be composed to include appropriate knowledge and balance of interests.

Media Contact

- The Task Force may convene a multi-interest media subcommittee to work with Port staff to present briefings for the media. Until the Task Force has fully considered the merits of this approach, Task Force members will direct general media inquiries about the Task Force to the Co-Chairs.

- Task Force members recognize the need to maintain a balance between informing others of their work and making statements to the media that could undermine the success of the MAQIP process. Appropriate topics for Task Force members to address in speaking to the media include their own group's or personal interests. Task Force members agree not to: a) make statements to the media that may prejudge the planning outcome, b) represent another group's point of view or characterize

their motives, c) state positions on preliminary proposals while they are still in development or refinement by work teams or by the Task Force, or d) attempt to represent or speak for the entire Task Force.

- In sharing information about Task Force progress, Task Force members are encouraged to rely primarily on the Key Outcomes Memoranda for the meetings, produced by the CONCUR facilitation team.

Public Comment

- Designated times at each Task Force meetings will be agendized for public comment. Efforts will be made to hold public comment at consistent time slots and keyed to important Task Force work product discussions.

- To the extent possible, public comments will be directed toward the work effort, products, or process of the Task Force. Comments on subjects external to the Port MAQIP should be directed to other forums.

- Members of the public are encouraged to convey their comments to relevant colleagues who serve as Task Force members. Members of the public are also encouraged to submit comments directly to the Port in writing as outlined in the Stakeholder Involvement Plan. Written comments will be distributed to Task Force members.

- The Task Force facilitation team will exercise flexibility in allocating speaking time during public comment periods to optimize opportunities to hear a range of views.

Information Sharing and Joint Fact-Finding

- Task Force members recognize that the MAQIP planning process relies on using the best readily available information.

- Task Force meetings will present multiple opportunities for data sharing and joint fact-finding, either in plenary or in Work Team meetings.

- Task Force members agree to be specific in identifying types of information they believe will be useful support the development of recommendations. Task Force members commit to share, and not withhold, relevant information to inform Task Force deliberations.

- Task Force Work Teams may develop preliminary recommendations, which should be treated as tentative and private until they have been presented to the Task Force.

- In the event that two or more data sets or interpretations appear to conflict, participants will work collaboratively with each other and with participating technical consultants to narrow and clarify the basis of disagreement.

Role of Facilitation Team

- The Task Force facilitation team is non-partisan. A broad-based selection committee unanimously chose the facilitation team; they have no stake in any particular recommendations of the Task Force. They will not act as an advocate for particular outcomes. The facilitators will strive to ensure that all Task Force members clearly articulate their respective interests and to assist members to complete their work in a well-informed and efficient fashion.

- The facilitation team will use its discretion in guiding meetings and may propose agenda adjustments. The facilitation team may also use straw voting to track a range of preferences on emerging issues. The facilitation team will also exercise flexibility in allocating speaking time.

- The Task Force facilitation team will prepare Key Outcomes Memoranda to summarize the main results of the Task Force meetings. These Key Outcomes Memoranda will not strive to serve as a transcript of the meetings; rather, they will endeavor to summarize key decisions made, issues discussed, and the next steps identified for moving the planning process forward. The facilitators will strive to prepare Key Outcomes Memoranda within 7-10 days of the meetings.

APPENDIX B

Guiding Principles and Goals

GUIDING PRINCIPLES

Seek Economic Growth: The Port of Oakland is an economic engine for the City of Oakland and the region. As such, it is vital that the seaport strengthen and grow in a fiscally responsible manner while addressing public health and environmental impacts. We recognize that the seaport's ability to operate, grow, and be a good neighbor depends on adequately addressing the adverse public health and environmental impacts of seaport activities, while remaining viable and competitive.

Promote Public and Environmental Health: The Port of Oakland holds social responsibility and environmental stewardship as core organizational values. We are committed to assuring that seaport activities are carried out in an environmentally and socially responsible manner, minimizing adverse impacts on our neighbors and the environment. With our partners, we strive to improve the environmental and public health conditions in the seaport area, for the benefit of both present and future generations.

Promote Environmental Justice: The Port of Oakland seeks to prevent adverse impacts to communities that experience disproportionate environmental and economic effects. We commit to developing and implementing plans and policies in a manner that ensures (a) mutual respect free of discrimination or bias, (b) participation of stakeholders as equal partners, and (c) safe, healthy, and economically viable employment. We recognize the need for urban development policies that contribute to the economic, social, and environmental betterment of West Oakland in particular and of the entire City of Oakland.

Apply Concept of "Fair Share": The Port of Oakland seaport commits to achieving its fair share of air emission reductions, recognizing that it alone does not have the resources needed to subsidize the entire effort and cost of emission reductions. Therefore, the seaport will solicit the action and support of our private industry and government partners, and the commitment of all companies engaged in and benefiting from goods movement at, to, and from the Port of Oakland, to achieve and fund their fair share of emission reductions in an equitable manner. The Port will pursue air quality and public health improvements through a variety of mechanisms that work in conjunction with and rely upon local, state, and federal regulations.

Exercise Authority: The Port of Oakland seaport commits to using its legal authority and influence to maximize air quality improvement within market and legal constraints. Seaport operations produce emissions, but the Port does not own or operate the sources that produce those emissions. Where the Port may not have authority over an emission source, the Port will strive to develop voluntary partnerships or agreements with its partners to reduce emissions. The Port of Oakland will aggressively pursue the MAQIP goals in its capacity as landlord.

Engage Stakeholders: The Port of Oakland seaport commits to actively engage and partner with its diverse stakeholder community in developing, implementing, and monitoring the MAQIP. This engagement will take place through a variety of formats, including public meetings and workshops. We recognize the need to especially collaborate and partner with those who are most affected by seaport operations, including, but not limited to all workers, tenants, customers, and impacted neighboring residents.

Build Knowledge: The Port of Oakland believes that good planning builds knowledge and educates, and thus results in informed decisions. To this end, the Port strives to create a plan that educates and adds value and in which knowledge is built, shared, and used by all stakeholders as a basis for informed and accountable decision-making. The Port and its stakeholders will rely on the best available information, indicators, science, and technology in all aspects of maritime air quality planning. The Port and its stakeholders will remain flexible in their approaches to improving air quality, in order to respond and adapt to, and incorporate new advancements, information, and evolving regulatory programs.

GOALS

The MAQIP ("the Plan") is a master plan intended to meet the following two overarching goals:

1) Reduce the adverse public health impacts of the Port of Oakland's seaport-related air emissions at the seaport area and in neighboring communities that are most affected by goods movement at the seaport (in particular West Oakland) and on workers in the maritime area, as expeditiously as feasible.

2) Reduce the adverse impacts of the Port of Oakland's seaport-related air emissions on ambient air quality in West Oakland and more generally in the San Francisco Bay Area Air Basin, as expeditiously as feasible.

In setting forth a framework for achieving these goals, the MAQIP covers the following major topics:

a) Geographic and jurisdictional boundaries of seaport emission sources and the affected neighboring areas to which air quality improvement efforts will be primarily targeted. (The geographic scope of the Plan has been defined as the Port of Oakland seaport for emissions and West Oakland for impacts);

b) Pollutants that will be targeted for reductions, and the impacts of those pollutants on the environment and public health;

c) Regulations affecting seaport operations;

d) Quantification of baseline and projected emissions, and the linkage between emissions and risk;

e) Quantitative performance objectives for reducing the adverse public health and environmental impacts of seaport air emissions;

f) Potential measures and related initiatives for reducing emissions from seaport operations that build upon the regulatory and voluntary efforts of others to reduce emissions and the health impacts associated with these emissions. These potential measures may also be included in specific mitigation plans that may be adopted as part of CEQA review for future development projects at the Port of Oakland seaport;

g) Timelines, standards, and strategies for implementing the Plan, monitoring and measuring the progress of such implementation, performing adaptive management, and addressing progress shortfalls; and

h) Public health and regulatory agency leadership and coordination to assist the Port in tracking risk reduction, by providing routine updates to risk studies.

APPENDIX C

Screening Criteria for Air Quality Initiatives

SCREENING CRITERIA

Document Overview: The screening criteria will be used to screen the potential emission and risk reduction initiatives suggested by the Task Force, including the initiatives included in the Source Document Work Team report.

How the Criteria Will be Used

1. Only initiatives that have a direct relationship to emission and risk reductions (i.e. reduce emissions/risk) will be subject to screening. One example of an initiative that would not be subject to screening is: "Create an agency caucus to monitor emission and risk reduction over time."

2. A work team of the Task Force, with support from Port staff and technical consultants, stakeholder technical consultants, and staff from the Bay Area Air Quality Management District, will determine which initiatives are subject to screening. Initiatives not subject to screening will be combined separately and considered by the Task Force for potential inclusion in the Plan.

3. The work team will screen the remaining initiatives using the criteria shown on page 2 of this document. The screening criteria are intended to categorize initiatives into two groups: primary and secondary interest for achieving reductions above and beyond regulatory requirements.

   - **Primary Interest Initiatives**: A "*yes*" response to each criterion is required for inclusion of the proposed initiative in the Plan as an initiative of primary interest. Primary interest initiatives will be included in the Plan.
   - **Secondary Interest Initiatives**: A *"no"* response to any of the criteria categorizes the proposed initiative as an initiative of secondary interest. Secondary interest initiatives will be included in the Plan, along with a brief summary of which criteria were not met.

4. Primary and secondary interest initiatives, as determined by the work team, will be presented to the Task Force for confirmation.

5. The "initiatives of primary interest" list would be consulted first when the Port or its tenants and business partners are considering actions to reduce emissions and risk. It is possible, however, that an initiative of secondary interest may be implemented before an initiative of primary interest if, for example, changes in technology render one more practicable than another. The implementation of any initiative is subject to economic, legal, and technological feasibility.

6. The screening criteria are not intended to set forth a framework for funding, implementation, monitoring, and tracking of the initiatives. These issues will be considered by the Task Force separately from the screening criteria.

Continued on next page

Criterion	Description
1. Regulatory Duplication	Does the proposed initiative achieve "surplus" emission reductions, defined as emission reductions in advance of or beyond an existing regulation or other commitment (for example, an existing MOU)?
2. Air Quality and Health Benefit	Does the proposed initiative contribute to non-negligible local emission and health risk reduction and/or regional ambient air quality improvement?
3. Location	Does the benefit of the proposed initiative occur primarily in the designated 'primary impact geographic area' of the MAQIP (i.e. West Oakland)?
4. Measurement and Tracking	Can the emission reductions from implementation of the proposed initiative be estimated quantitatively and therefore tracked over time?
5. Technological Practicability	Can the proposed initiative be implemented with existing or foreseeable technology?
6. Side effects	Does the proposed initiative avoid or at least minimize foreseeable negative environmental, economic, or social side effects?
7. Operational Practicability	Can the proposed initiative be implemented without significant disruption to the movement of freight or compromising safety?

APPENDIX D

Proposed Lists of Primary Interest and Secondary Interest Air Quality Initiatives for Potential Implementation

Background:
The following text is proposed to be incorporated as Section 6.4.2 of the Draft MAQIP, in reference to the Table of Contents posted on the Port's website dated August 7, 2007.

(***Note to Reviewers*:** We acknowledge that the section numbering related to the Table of Contents could change and that some additional introductory and/or transition language may need to be added when the MAQIP is drafted in full to help with flow and context. Please note that this portion of the MAQIP will be preceded by a section that provides an overview of the Screening Criteria. The text describing the Screening Criteria and Process was reviewed and approved by Task Force in August 2007.)

Development and Use of Potential Air Quality Initiatives
The Air Quality Initiative Screening Work Team of the MAQIP Task Force was charged with reviewing and categorizing numerous potential air quality initiatives that offer a potential to achieve emissions and risk reductions that go beyond regulatory requirements. The initiatives were compiled from two sources: (1) a report prepared by the Source Document Work Team of the Task Force, which included initiatives drawn from a wide range of existing documents; and (2) initiatives provided by Task Force members and members of the public present at the August 14, 2007, MAQIP meeting.

The eleven-member Work Team reviewed 355 initiatives first to identify those that directly reduce air emissions and health risk ("round 1"). These initiatives moved on to "round 2," which involved screening the initiatives using the seven screening criteria adopted by the Task Force on August 14, 2007. The "Round 2" screening effort generated two lists for each seaport emission source category: (1) Initiatives of Primary Interest and (2) Initiatives of Secondary Interest. The initiatives that did not move to "round 2" were, where possible, grouped into the following categories:

- Key concepts
- Policy
- Forum/collaboration
- Funding
- Health risk
- Incentives/penalties
- Research/further study/technology advancement
- Too vague
- Not applicable

We note that the Work Team also decided to identify those initiatives that duplicate existing regulatory or MOU requirements; they are summarized after the Primary and Secondary Interest Lists for each source category evaluated.

Primary Interest Initiatives ("Primary List")
The Primary Interest Initiatives list includes those measures that 8 or more work team members identified as meeting all seven criteria. This list represents those initiatives that, according to the work team's review, are of primary interest for reducing emissions and health risks associated with Port of Oakland seaport activities. This list is not exhaustive and presents an overview of

the types of actions that may be taken over time. We anticipate that, over time, other initiatives that meet all seven criteria could be suggested or pursued by the Port, its business partners, its agency partners, or other stakeholders.

The list is intended to function as a suggestive or guidance instrument for actions that may be taken by the Port, its business partners, its agency partners, or other stakeholders. The Port plans to give preference to actions that are (1) identified on this list, (2) equivalent to or better than initiatives identified on this list, (3) generally consistent with measures on this list, or (3) other measures that may be suggested over time that meet all seven criteria. The Port will generally exercise such preference when the Port (1) itself selects an initiative for implementation, (2) provides incentives for implementation by others, or (3) provides other support for implementation by others. Because the Port cannot implement all the initiatives reviewed by the Work Team, we expect that our business, agency, and community partners will follow the same approach, to the maximum extent possible.

To the maximum extent feasible given schedule constraints (for example, funding application deadlines) the on-going MAQIP Stakeholder Group will be advisory and will provide input on the development and implementation of initiatives, particularly those actions that may be suggested over time but are not reflected in the MAQIP at the time of publication.

Secondary Interest Initiatives ("Secondary List")
The Secondary Interest Initiatives list includes those initiatives that 8 or more work team identified as worthy of pursuit, but which did not meet all seven criteria. As with the Primary List, the Secondary List is intended to function as suggestive or guiding instrument for actions that may be taken by the Port, its business partners, its agency partners, or other stakeholders. Generally, we expect that an initiative, or its equivalent, on the Secondary List would be implemented only if it can meet all seven criteria. However, there may be exceptions to this general rule. Some examples of exceptions include:

(1) An initiative whose benefits cannot be easily tracked over time (criterion # 4) could be implemented because of a shared understanding that emission and/or risk reductions would result from implementation (for example, prohibition on overnight truck parking in residential areas of West Oakland).
(2) Recognizing that other agencies (for example, the BAAQMD) may be legally bound by criteria that are different than those used by the MAQIP Work Team, agency funding may become available for an initiative with benefits that are *primarily* regional rather than local (Criterion #3); the Port or other implementing entity may therefore pursue an initiative on the Secondary List ahead of an initiative on the Primary List.
(3) Limitations of funding, time or other resources could allow for complete implementation of a Secondary List initiative while they could only result in partial implementation of a Primary List initiative. Similarly, a stakeholder may determine that an initiative on the Secondary List can be realized in advance of an initiative on the Primary List, without precluding the implementation of Primary interest initiatives and while providing local benefits.

Exceptions should be evaluated carefully so as seek maximization of local emission and risk reduction, in accordance with the Guiding Principles of the MAQIP. To the maximum extent feasible given schedule constraints (for example, funding application deadlines) the on-going MAQIP Stakeholder Group will be advisory and will provide input on the development and implementation of initiatives, particularly those actions that may be suggested over time but are not reflected in the MAQIP at the time of publication.

Initiatives that Duplicate Existing Regulatory/MOU Requirements

Initiatives in the regulatory duplication section represent potential opportunities for early implementation (e.g. accelerate) or opportunities to build upon (e.g. exceed) regulatory requirements.

Other Considerations

The Work Team performed its review and categorization of the 355 initiatives to the best of its ability, given its combined knowledge and expertise. As outlined in the Screening Criteria document adopted by the Task Force on August 14, 2007, the implementation of any initiative on either the Primary or Secondary List is subject to economic, legal, and technological feasibility. Acceleration and/or exceedance of actions required by regulatory or MOU requirements are similarly subject to economic, legal and technological feasibility. We expect that the entity intending to implement and/or fund the initiative will perform a feasibility analysis at the appropriate time. Furthermore, because the initiatives reviewed by the Work Team are broadly defined, and in some cases conceptual, we expect that additional development of the initiatives will be needed prior to feasibility analysis. Again, we expect that the entity intending to implement and/or fund the initiative will perform this feasibility analysis at the appropriate time, since such details are best fleshed out by the entity accountable for implementation. We expect that the selection of initiatives will be made, to the maximum extent possible, in consultation with the CARB West Oakland human health risk assessment, such that initiatives shown to have the greatest potential to reduce health risk are prioritized within the bounds of feasibility.

Additionally, we note that the numbering of the initiatives within each category (e.g. Trucks) and sub-category (e.g. Primary List) does not indicate ranking or priority of any sort.

Finally, we note that some of the initiatives, or actions generally consistent with the initiatives identified on the Primary and Secondary lists, may be recently completed, under way, or planned. These initiatives are outlined in Section 6.4.3 of this plan. The remaining initiatives (e.g. those initiatives on the lists but not identified in Section 6.4.3) are, as discussed above, informational for the purpose of identifying additional actions that may be taken in the future by the Port or other stakeholders.

Proposed Lists of Primary Interest and Secondary Interest Air Quality Initiatives for Potential Implementation

(Initial Revisions Proposed by the MAQIP Supplemental Work Team on January 10, 2008)

Introduction

The Work Team performed its review and categorization of the 355 initiatives to the best of its ability, given its combined knowledge and expertise. Additional development of the initiatives, some of which are currently drafted as general concepts, will be needed prior to any feasibility analysis and the implementation of any initiative on either the Primary or Secondary Lists of Initiatives is subject to economic, legal and technological feasibility. All the measures on this list are intended to represent actions that offer a potential to go beyond existing state and federal regulations and/or MOUs. Initiatives in the regulatory duplication section represent potential opportunities for early implementation (e.g. accelerate) or opportunities to build upon (e.g. 'exceed') regulatory requirements. Acceleration and/or exceedance are similarly subject to economic, legal and technological feasibility. The numbering of the initiatives within each category (e.g. Trucks) and sub-category (e.g. Primary List) does not indicate ranking or priority of any sort.

I. Emission Source Category: Truck

A. Primary List of Potential Initiatives Subject to Economic, Legal and Technological Feasibility:

1. Institute a collaborative effort among the West Oakland community, the Oakland Police Department, trucking companies/truckers and the Port for increasing public, trucker, and terminal operator education on safety and neighborhood issues.
2. State a goal of replacing or retrofitting 1,500-2,500 trucks over 5 years to meet a "clean truck" standard. Ban older trucks from Port terminals in a phased 5-year schedule. The owner of the old truck will be paid for the truck.
3. Create a buy-back program for old trucks based on established criteria (buy worst trucks first) similar to or consistent with the Truck Incentives Working Group of the West Oakland Toxics Reduction Collaborative (WOTRC).
4. Implement standardized mandatory web-based reservation systems.
5. Continue to design and build terminal gate and roadway efficiencies for congestion relief, with input from all users.
6. Identify and retrofit in collaboration with various users fuel saving devices that would also reduce greenhouse gas emissions.
7. Provide electrified parking spaces for trucks and/or for reefer units to reduce unnecessary idling.
8. Institute a collaborative effort among the West Oakland community, the Oakland Police Department, trucking companies/truckers and the Port to increase enforcement & penalties on prohibited truck routes in West Oakland and evaluate/establish alternate truck route to reduce emissions and exposure.
9. By 2011, require all trucks calling at the port frequently or semi-frequently to meet or exceed the EPA 2007 on-road particulate matter (PM) emissions standards (0.01 G/BHP-HR for PM), and be the cleanest available oxides of nitrogen (NOx) at the time of

replacement or retrofit.
10. Provide incentives for early implementation for cleaner trucks. An example incentive could be a decreased or increased concession fee.
11. Adopt and implement ARB rule to modernize (replace and/or retrofit) private truck fleet.
12. Implement idle reduction education, technology, and policy program with provisions to assure terminal adherence to anti-idling policies and procedures (ref: AB 2650).
13. Install traffic barriers on streets where trucks are prohibited (City of Oakland)
14. Pass an ordinance prohibiting overnight truck parking in residential areas (City of Oakland).
15. Support acquisition and use of more LNG & CNG trucks.
16. Provide truck services (fueling, truck repair, food and beverages) at the Port of Oakland.

B. Secondary List of Potential Initiatives Subject to Economic, Legal and Technological Feasibility:

1. Develop a virtual container yard (off Port property) with compliance by all terminal operators to create more efficient movement of goods. This requires a 3rd coordinating party & central database to design & implement or a better relationship between data developers and the Port.
2. Require terminal operators to implement "paperless gate;" such as RFID in combination with web-based booking systems to prevent gate congestion and idling and use OCR for gate efficiency.
3. Implement Pier Pass drayage truck fleet emission reduction program as implemented in LA/LB with extended gates & daytime congestion fee.
4. Improve labor work rule flexibility to enable increased daily truck turns.
5. Establish inland container pools where trucks can drop-off and pick-up empty containers, to minimize deadhead truck runs (chassis pool).
6. Create more efficient queues; Call trucks to the Port when needed to reduce idle time.
7. Create an electrified truck stop (cold ironing the trucks) so that trucks do not idle in the queue.
8. Accelerate software upgrade for trucks (i.e. adjust the software in certain trucks that are "gamed" to allow for greater emissions at higher speeds)
9. If applicable, concessionaires will be required to establish maintenance and training programs to reduce emissions.
10. Use design/operational measures such as parking, synchronized traffic signals, and driver training.
11. Encourage the use of biodiesel and other alternative fuels.
12. Decrease truck traffic by increasing the percentage of containers moved by rail.
13. Create a trucker mobility program so that they do not need to drive trucks out of the Port unnecessarily (i.e. - use a shuttle, BART, or other public transportation).

C. Duplication with Existing Regulatory or MOU Requirement:

1. Pass anti-idling rules and enforce anti-idling at terminal gates.
2. Take steps to limit the impact of Port construction operations related to the Oakland Army Base redevelopment.

3. Develop a Port-run vehicle inspection and maintenance program for port drayage trucks. This would be periodic and random inspection program, and could also be imposed on terminal operators. (State has heavy duty truck inspection rule program).
4. Identify and retrofit eligible equipment such as diesel particulate filters (DPF) or diesel oxidation catalysts (DOC).
5. Utilize CA low sulfur diesel for trucks.
6. Conduct smoke inspections for trucks in communities.
7. Enforce 5-minute idling limit for trucks.
8. Adopt and implement ARB rule to require international trucks to meet US emission standards.
9. Enforce CA rule for transport refrigeration units on trucks, trains, and ships.
10. Restrict entry of trucks new to port service unless equipped with diesel PM controls.

II. Emission Source Category: Ocean Going Vessels

A. Primary List of Potential Initiatives Subject to Economic, Legal and Technological Feasibility:

1. Collaborate with other ports (LA/LB and/or Seattle) to coordinate the movement of clean ships through incentives rather than mandates.
2. Ensure the best technologies are incorporated into new equipment purchases.
3. Implement additional at-dock (e.g. stack after-treatment) and during voyage (e.g. electrification or scrubbing) emissions reduction options deemed viable.
4. Use of diesel particulate matter (DPM) and/or NOx control devices on auxiliary and main engines on new vessel builds and existing frequent callers.
5. Create incentives for cold-ironing beyond regulations.
6. Create incentives for all ships to use low sulfur fuel (0.1%) in both vessel main and auxiliary engines.
7. Support ratification of MARPOL Annex 6 for international shipping.
8. Obtain SOx Emission Control Area (SECA) designation or alternative for North America.
9. Retrofit existing main engines on ships during major maintenance.

B. Secondary List of Potential Initiatives Subject to Economic, Legal and Technological Feasibility:

1. Implement operational efficiency improvements during Port development to reduce time at anchor and at dock.
2. Increase “destination loading” on ships from the Far East.
3. Dedicate cleanest vessels to California service.

C. Duplication with Existing Regulatory or MOU Requirement:

1. Implement ARB ship auxiliary engine rule to use lower sulfur fuel (0.1% by 2010) (OAL review) (note: rule currently under litigation)
2. 100% use of cleaner fuels, such as 0.1% sulfur content, in the auxiliary engines at anchor and at dock for vessels with adequate tank capacity. Assess the feasibility for vessels other than frequent callers, including vessels at anchor and vessels with smaller tank capacity. This

is a partial duplication of CARB's auxiliary engine fuel regulation currently under legal challenge but being temporarily enforced.

3. Use < 0.2% Sulfur Marine Gas Oil (MGO) Fuel in vessel auxiliary engines at berth and during transit out to a specified distance from the Port. This is a partial duplication of CARB's auxiliary engine fuel regulation currently under legal challenge but being temporarily enforced.
4. Standardize the use of marine gas oil (MGO)(less than 1.5% Sulfur (S)) fuels in the main engines during transit and maneuvering out to a specified distance from the Port, moving towards a 0.1% S standard as appropriate fuels become available.
5. Use "Cold-Ironing" technology to shut down auxiliary engines on ocean-going ships while in port by connecting to electrical power supplied at the dock, or equivalent alternative.

III. Emission Source Category: Harbor Vessels

A. Primary List of Potential Initiatives Subject to Economic, Legal and Technological Feasibility:

1. Use ultra low sulfur diesel and/or bio-fuel blends for cleaner emissions (this is a partial duplication with CARB's ultra low sulfur fuel rule).
2. Adopt tighter USEPA or ARB emission standards for harbor craft.
3. Implement incentives to accelerate introduction of new harbor craft engines.

B. Secondary List of Potential Initiatives Subject to Economic, Legal and Technological Feasibility:

1. Offer a subsidy for tugs that use cleaner-burning, but more expensive, soy diesel. Provide the subsidy if the equipment uses the fuel and stays in Oakland. This model could also be expanded to other businesses.
2. Use ultra low sulfur diesel and/or bio-fuel blends for cleaner emissions (this is a partial duplication with CARB's ultra low sulfur fuel rule).

C. Duplication with Existing Regulatory or MOU Requirement:

1. Require all home-based harbor craft to meet most EPA Tier II standards for harbor craft of equivalent reductions.
2. By a specified time, require all previously re-powered home based harbor craft to be retrofitted with the most effective CARB verified NOx and/or PM emissions reduction technologies. When Tier III engines become available, all home based harbor craft will be re-powered with new engines.
3. Utilize CA low sulfur diesel for harbor craft.
4. Clean up harbor craft through replacement, retrofit, or alternative fuels.

IV. Emission Source Category: Cargo Handling Equipment

A. Primary List of Potential Initiatives Subject to Economic, Legal and Technological Feasibility:

1. Seek ways to accelerate compliance with CARB's Container Handling Equipment rule.
2. Encourage the use of ultra low-sulfur diesel and/or biofuel and promote the use of other cleaner fuels and lubricants where appropriate.

3. Increase fuel efficiency by using CHE with hybridization or full-electrification technologies, as feasible.
4. Replace equipment with lighter, more efficient straddle carriers, rubber tired gantries (RTG), or fully-electric rail mounted gantry (RMG) cranes, and use Tier 4 engines for yard tractor fleet.
5. Identify opportunities for and maximize the use of regenerative energy technologies for CHE.
6. Maximize operational efficiency and terminal design as port development occurs and negotiate cleaner alternatives at the time of major modifications and lease negotiations.
7. Use lease measures and project reviews to drive continuous improvements and emissions reductions.
8. Use electrification in much more Port/terminal operations equipment.

B. Secondary List of Potential Initiatives Subject to Economic, Legal and Technological Feasibility:

1. Complete retrofits of suitable CHE with exhaust treatment equipment.
2. Use crankcase emission reduction systems equipment.
3. Increase penetration of zero emission or near zero emission cargo handling equipment.

C. Duplication with Existing Regulatory or MOU Requirement:

1. Finalize ARB inter-modal cargo equipment rule (OAL)
2. Complete full-scale fleet upgrade to the best available technology.
3. Require all yard tractors to meet a minimum EPA 2007 On-road or Tier IV engine standard by the end of 2010.
4. Require all CHE with engines with > 750 hp to meet, at a minimum, the EPA Tier IV of road standards by the end of 2014. Starting 2007, require all CHE with engines < 750 hp be equipped with cleanest available VDEC verified by CARB.
5. Implement ARB rule for cleaner cargo handling equipment through replacement, retrofit, or alternative fuels.
6. Adopt and implement ARB forklift rule for gas-fired equipment.
7. Require green equipment for goods movement related construction and maintenance.
8. Implement US Tier 4 equipment emission standards.
9. Upgrade cargo-handling equipment to 85% diesel PM control or better.

V. Emission Source Category: Rail

A. Primary List of Potential Initiatives Subject to Economic, Legal and Technological Feasibility:

1. Identify all existing switching locomotives in service at the Port of Oakland that may be potential candidates for replacement or retrofit.
2. Specify a date by which any new switch engine acquired must meet EPA Tier III standards.
3. Implement efficiency improvements to switchyards such as electrification of lift equipment and RFID system implementation when consistent with existing rail yard configuration and operations.

4. Require any new rail yards developed or significantly redesigned to operate the cleanest available rail yard technology.
5. Use lower emitting switch engines within rail yards, where traditionally the oldest locomotives are used.
6. Upgrade engines in switcher locomotives by 2010.
7. Retrofit existing locomotive engines with diesel PM controls when certified by EPA and CARB.

B. Secondary List of Potential Initiatives Subject to Economic, Legal and Technological Feasibility:

1. Implement freight car productivity improvements, incorporating technologies that reduce train resistance (drag).
2. Increase port-wide rail and switching yard efficiencies and identify the feasibility of on-dock rail as alternative to near dock rail.
3. Create infrastructure for another level of rail traveling north & East.
4. Utilize more rails for long haul.
5. Concentrate Tier 3 locomotives in California.
6. Over a voluntary transition period, require the fleet average for Class I Long Haul Locomotives calling at port properties to be Tier III equivalent PM and NOx and to use 15 minute idle restrictors.
7. Implement Tier 3/Tier 4 US standards for line haul locomotives at time of purchase (new engine and rebuild standards).
8. Encourage the use of biofuel or other cleaner fuels in switchyard and line haul locomotive engines.

C. Duplication with Existing Regulatory or MOU Requirement:

1. Utilize CA low sulfur diesel for captive instate locomotives.
2. Eliminate non-essential locomotive idling both inside and outside of rail yards by installing automatic idling-reduction devices on 99% of unequipped intrastate locomotives by June 30, 2008.
3. Dispense lower-sulfur diesel in 80% of locomotives operating in California by January 1, 2007.
4. Ensure that the incidence of locomotives with excessive visible emissions is very low through the Visible Emission Reduction and Repair Program.
5. Conduct early review of air emissions impacts from designated yards – with ensuing feasible mitigations.
6. Use ultra low sulfur diesel in switchyard and line haul locomotive engines.
7. Implement 2005 Statewide MOU for Rail Yard Risk Reduction.
8. Conduct training on locomotive idling restrictions.

VI. Emission Source Category: Other

A. Primary List of Potential Initiatives Subject to Economic, Legal and Technological Feasibility:

1. Develop a biodiesel consortium (City of Oakland, Port of Oakland, City of Berkeley, West

Oakland community).
2. Establish employee programs to facilitate sustainable commuting.

B. Secondary List of Potential Initiatives Subject to Economic, Legal and Technological Feasibility:

1. Create a position for a public health officer at the Port to take the lead on health impact assessment, and inform staff on community & worker health.
2. Sponsor a Healthy Homes Project utilizing technology and design practices to reduce the amount of dangerous pollution residents breathe inside their homes. (Alameda County Public Health Department and the California Department of Health Services.)
3. Conduct mitigation and pollution prevention.
4. Increase enforcement of traffic and vehicle safety laws and regulations.
5. Establish construction staging areas in locations to minimize impact on local circulation with appointment system.
6. Retrofit freight vehicles with probes and smart sensors to measure speed, weather, pollution, lane departure, cargo location, customs data, container RFID information, and vehicle/frame condition inspection dates.

C. Duplication with Existing Regulatory or MOU Requirement

1. Regulate criteria pollutant and toxic emissions from stationary sources and indirect sources based on Phase I findings.
2. Expand enforcement of commercial vehicle laws already adopted.
3. Use green equipment for construction of infrastructure projects (as available).

APPENDIX E

MAQIP Interagency Matrix Group: Summary of Regulations and Agency Roles

Summary of Existing and Upcoming Regulations Affecting Emissions from Port of Oakland Seaport Operations Sources of Particulate Matter, Sulfur Oxides and Nitrogen Oxides

Document Purpose: This document is intended to summarize regulations and other measures currently adopted, pending, or under consideration, and the roles of the agencies and other parties in implementing and enforcing these measures.

Rule	Agency[1]	Description	Enforcement Entity	Compliance Dates	Status (Adoption Date)
Source Category: Ocean Going Vessels					
Auxiliary engine low sulfur fuel rule	ARB	Requires low sulfur fuel for use with auxiliary engines. Effective 2007 within 24 nm of coast; marine fuel must be Marine Gas Oil or Marine Diesel Oil containing less than 0.5% sulfur (must be Marine Gas Oil containing less than 0.1 % sulfur starting in 2010)	ARB	January 1, 2007	In place but not enforced.
Main engine, auxiliary engine and boiler low sulfur fuel rule	ARB	Requires low sulfur fuel for use with vessel main engines, auxiliary engines and boilers. Within 24 nm of coast, marine fuel must be Marine Gas Oil or Marine Diesel Oil containing less than 0.5% sulfur (must be Marine Gas Oil containing less than 0.1 % sulfur starting in 2012)	ARB	2009	Adopted; undergoing final rulemaking. Phase in 2009-2012 Phase 1 beginning July 2009 (sulfur limit of 0.5%). Phase 2 beginning July 2012 (sulfur limit of 0.1%)
Cold ironing rule	ARB	Control hotelling emissions via one of several possible methods	ARB	January 1, 2010	In place. Phase in 2010-2020
Vessel Speed reduction (VSR)	ARB	Evaluating need for VSR measure at major ports and along coastline.	ARB	TBD	Under evaluation for 2009
Clean Ship program	ARB	Evaluating measure or incentive program to require cleaner or retrofitted vessels in CA ports	ARB	TBD	Under consideration

[1] Unless otherwise noted, this is the agency or other party responsible for overseeing and enforcing the listed measure.

Rule	Agency[1]	Description	Enforcement Entity	Compliance Dates	Status (Adoption Date)
New marine compression-ignition (diesel) engine rule	EPA	National exhaust emission standards for new engines at or above 30 liters per cylinder ("category 3" marine diesel engines)	EPA	1. Voluntary in 2003, mandatory in 2004. 2. Tier 2 NOx could begin as early as 2011 and Tier 3 could begin as early as 2016. 3. See number 2.	1. Feb 28, 2003 (68FR9746) 2. December 7, 2007 (72FR9521), Advanced Notice of Proposed Rulemaking, comments due 2/29/08 3. Dec 5, 2007 (72FR68518), Final rule to change the deadline to Dec 17, 2009 setting more stringent standards for Category 3 engines.
MARPOL Annex VI Tier 2 and Tier 3 engine emission standards	International Maritime Organization (US Coast Guard lead)	Any engine > 130kW installed on a vessel constructed on or after 1/1/2000 and any engine that undergoes a major conversion on or after 1/1/2000.	US Coast Guard	Tier 2 standards by 2011; Tier 3 standards by 2016. Possible standards for SOx and PM.	Adopted October 2008. Tier 2 for new engines: 20% NOx reduction starting January 2011. Tier 3 for new engines: 80% NOx reduction starting January 2016 (based on the use of advanced catalytic aftertreatment systems).
MARPOL Annex VI Tier 1 NOx standard	International Maritime Organization (US Coast Guard lead)	Any engine > 130kW installed on a vessel constructed on or after 1/1/2000 and any engine that undergoes a major conversion on or after 1/1/2000.	US Coast Guard	2010	Adopted October 2008; phase-in beginning 2010. Tier 1 for existing engines: 15-20% NOx reduction from current uncontrolled levels.
MARPOL Annex VI SOx Emissions Control Area (SECA) for North America	US Designated (EPA/ARB lead)	US application for a SECA. Sulfur levels capped at 1.5% potentially out 200 nm from shore as defined by Exclusive Economic Area (EEA)	US Coast Guard		US preparing justification and other background materials
Source category: Harbor Craft					
Commercial Marine Diesel Engine emission standards: Tier 1 & 2	EPA	New engine standards for Category 1 & 2 marine diesel engines	EPA	Phase in 2004-2007	In place
Marine Diesel Engine Rule: Tier 3 & 4	EPA	Affects engines up to 30 liters per cylinder; relies on catalytic after-treatment technologies with less than 15 ppm sulfur fuel. (This rule is coupled with the locomotive Tier 3 & 4 exhaust standards.)	EPA	Tier 3 beginning in 2009; Tier 4 in 2014.	In place – finalized in 2008
ARB Harbor Craft low sulfur fuel rule	ARB	Requires Ultra-low Sulfur Diesel (ULSD) fuel use in harbor craft	ARB	January 1, 2006 for CCAQMD; January 1, 2007 for rest of state.	In place

Rule	Agency[1]	Description	Enforcement Entity	Compliance Dates	Status (Adoption Date)
ARB In-Use Harbor Craft rule	ARB	Reduce PM and NOx from in-use ferries, tugs, tows and new commercial harbor craft	ARB	December 31, 2009	Phase in 2009-2022
ARB Crew and Supply Vessel rule	ARB	Similar to In-Use harbor craft rule.	ARB	TBD	Under consideration
Source Category: Cargo Handling Equipment					
ARB Cargo Handling Equipment regulations	ARB	Retrofit or accelerated turnover to meet Best Available Control Technology (BACT) for newly purchased, leased or rented equipment (2007 or later on-road engine or Tier 4 off-road engine or cleanest verified PM/NOx retrofit)	ARB	January 1, 2007	In place.
EPA non-road and ARB off-road diesel engine standards	EPA ARB	Both EPA and ARB have adopted exhaust emission standards for Tier 1Tier 4 engines. Two separate rules.	EPA: ARB:	Tier 1-3: 1999-2008; Tier 4: 2008-2015	In place; phase in 2008 – 2015
Ultra-low Sulfur fuel	ARB Separate rule for EPA	Require less than 15 ppm sulfur diesel fuel (EPA requires a cap of 15 ppm for non-road, phasing in 2010-2014, currently at 500 ppm.)	ARB EPA	June 2006	In place
Source category: On-Road Trucks: Drayage Trucks					
Port of Oakland Idling Trucks California Health and Safety Code Section 40720 (AB 2650 & AB 1971)	State of California	Existing law requires each marine terminal in the State to operate in a manner that does not cause the engines on trucks to idle or queue for more than 30 minutes while waiting to enter a terminal gate. Existing law specifies that if a marine terminal implements a scheduling or appointment system, the terminal shall only be subject to a fine for a truck that makes use of the appointment system and that idles for more than 30 minutes outside the terminal gate. http://www.baaqmd.gov/enf/idling truck/idlingtrucks.htm	BAAQMD	Ongoing	Added to the CA H&SC in 2002, amended 2004. Currently being enforced by the BAAQMD.
ARB Port Truck Rule	ARB	Replace/retrofit trucks to meet emission standards	ARB	Phase 1 – January 1, 2010 Phase 2 – January 1, 2014	In place; effective December 24, 2008

Rule	Agency[1]	Description	Enforcement Entity	Compliance Dates	Status (Adoption Date)
Source category*: *On-Road Trucks: All					
ARB Statewide Heavy-Duty (in-use) Truck Rule	ARB	Require private fleet operators to replace/retrofit diesel trucks greater than 14,000 GVWR to meet emission standards.	ARB		Adopted in December 2008; phase-in starting in 2011.
ARB on-road Heavy Duty Truck emission standards EPA has separate federal standards for new trucks and buses	ARB EPA	New MY 2007 and later on-road Heavy Duty Trucks	 EPA		In place 2007 – 2010 phase-in period
Ultra-Low Sulfur Fuel Rule EPA has separate rule	ARB EPA	Require less than 15 ppm sulfur diesel fuel Same for EPA	ARB EPA	Effective June 2006	In place
Source category: Locomotives					
Tier 0, 1 and 2 Emission Standards for Locomotives	EPA	Original (1998) standard: Emission standards for new and remanufactured engines (Tier 2 standards result in more than 50% emission reductions for NOx, PM, CO & HC) New (2008) standard: More stringent Tier 0 and 1 remanufacturing standards in 2010, Tier 2 engines subject to Tier 3 PM standards in 2013 (note: standards become applicable earlier than the dates shown if "kits" are available earlier at a "reasonable cost")	EPA	Tier 0: 1973-2001; Upon remanufacture beginning in 20002001 Tier 1: 2002-2004 Tier 2: 2005	In place (Original standard adopted 1998; new standard adopted March 2008)

Rule	Agency[1]	Description	Enforcement Entity	Compliance Dates	Status (Adoption Date)
Tier 3 and 4 Emission Standards for Locomotives	EPA	Additional emission standards for new and remanufactured locomotive engines Additional emissions standards for previously remanufactured and existing locomotive engines	EPA	Revised Tier 0 and 1: 2010 or later at time of remanufacture Revised Tier 2: 2013 or later at time of remanufacture Tier 3: 2012-2014 Tier 4: 2015 for PM and 2017 for NOx NOTE: locomotives manufactured in 2015 and 2016 are subject to the Tier 3 NOx standards when manufactured, but subject to the Tier 4 NOx standards when remanufactured	Final Rule March 2008
2005 Rail Yard Particulate Matter Reduction Program (2005 MOU)	ARB Railroads	Estimated to reduce PM around rail yards by at least 20% statewide Agreement includes provisions to: • install idle control devices on intrastate locomotives • limit/quickly repair smoking locomotives • maximize use of low sulfur fuel • conduct Health Risk Assessments at 16 major rail yards • develop/review mitigation plans at 16 major yards • evaluate remote sensing technology • evaluate new technology	ARB	Agreement effective June 2005 • June 30, 2008 •June 30, 2005 •January 1, 2007 •Various 2006 & 2007 •Annually •Beginning 2005 •Semiannual meetings	In place (Agreement signed June 2005)

Rule	Agency[1]	Description	Enforcement Entity	Compliance Dates	Status (Adoption Date)
ARB intrastate locomotive low sulfur fuel rule	ARB	Requires the use of CARB fuel (less than 15 ppm sulfur) for locomotives used 90% in state (mostly switcher)	ARB	January 1, 2007	In place (Adopted November 2004)
Source category: All/Other Port - Related Sources					
San Francisco Bay Area Green Ports Initiative	BAAQMD	Initiative includes BAAQMD enforcement of ARB regulations affecting Port operations; grants for earlier or greater emission reductions; outreach; and monitoring progress.	BAAQMD	See ARB regulations compliance dates	December 2008

Notes
ARB: California Air Resources Board
EPA: United States Environmental Protection Agency
BAAQMD: Bay Area Air Quality Management District
County: Alameda County
City: City of Oakland
Port: Port of Oakland

APPENDIX F

2005 Emissions Inventory
Please refer to the following Web Address:
http://www.portofoakland.com/environm/airEmissions.asp

APPENDIX G
Future Year Emissions Projections for all Pollutants and Growth Scenarios

Table G-1. Baseline (year 2005) emissions.

Emission Source	Emissions, TPY				
	ROG	CO	NOx	PM	SOx
	2005				
Total Off-Shore	**138**	**252**	**2062**	**172**	**953**
OGV - Off-Shore	116	169	1717	158	950
Harbor Craft	22	83	345	13	3
Total On-Shore	**135**	**638**	**1948**	**102**	**475**
OGV - Berth	24	65	767	61	464
CHE	53	408	766	22	7
Truck	52	154	339	17	2
Locomotive	6	11	76	2	2
Grand Total	**273**	**890**	**4010**	**273**	**1428**

Table G-2. Projected emissions for 2012 and 2020 (with percent change for 2005 emissions) assuming **no growth**, i.e., Port container throughput volume remains constant at 2005 level with all existing and likely regulations from Table 5-2 taken into consideration.

Emission Source	Emissions, TPY (%)									
	2012					2020				
	ROG	CO	NOx	PM	SOx	ROG	CO	NOx	PM	SOx
Total Off-Shore	**134 (-3%)**	**238 (-6%)**	**1945 (-6%)**	**148 (-14%)**	**783 (-18%)**	**124 (-10%)**	**227 (-10%)**	**1725 (-16%)**	**32 (-81%)**	**42 (-96%)**
OGV - Off-Shore	115	169	1702	137	781	115	169	1612	28	42
Harbor Craft	19	69	243	11	2	9	58	113	4	0
Total On-Shore	**92 (-32%)**	**613 (-4%)**	**1416 (-27%)**	**26 (-75%)**	**23 (-95%)**	**50 (-63%)**	**515 (-19%)**	**567 (-71%)**	**8 (-92%)**	**9 (-98%)**
OGV - Berth	24	65	738	14	22	8	22	238	5	8
CHE	28	426	313	8	1	23	420	102	2	1
Truck	37	115	309	3	0.2	17	68	182	1	0.2
Locomotive	3	7	56	1	0	1	6	46	1	0
Grand Total	**226 (-17%)**	**851 (-4%)**	**3361 (-16%)**	**174 (-36%)**	**806 (-44%)**	**174 (-36%)**	**742 (-17%)**	**2292 (-43%)**	**40 (-85%)**	**50 (-96%)**

Table G-3. Projected emissions for 2012 and 2020 (with percent change for 2005 emissions) assuming increase in Port container throughput volume follows the **"low growth"** scenario shown in Figure 5-1 and with all existing and likely regulations from Table 5-2 taken into consideration.

Emission Source	Emissions, TPY (%)									
	2012					2020				
	ROG	CO	NOx	PM	SOx	ROG	CO	NOx	PM	SOx
Total Off-Shore	**134 (-3%)**	**238 (-6%)**	**1945 (-6%)**	**148 (-14%)**	**783 (-18%)**	**154 (12%)**	**283 (12%)**	**2148 (4%)**	**40 (-77%)**	**52 (-95%)**
OGV - Off-Shore	115	169	1702	137	781	143	210	2007	34	52
Harbor Craft	19	69	243	11	2	11	72	141	5	0
Total On-Shore	**118 (-12%)**	**791 (24%)**	**1832 (-6%)**	**33 (-67%)**	**30 (-94%)**	**101 (-25%)**	**1038 (63%)**	**1202 (-38%)**	**17 (-83%)**	**17 (-96%)**
OGV - Berth	31	84	951	18	28	16	44	476	10	15
CHE	36	549	403	10	1	46	839	203	4	1
Truck	47	148	398	4	0.3	34	135	364	2	0.4
Locomotive	4	10	80	2	0	5	20	159	2	0
Grand Total	**252 (-8%)**	**1029 (16%)**	**3777 (-6%)**	**182 (-33%)**	**813 (-43%)**	**256 (-6%)**	**1321 (48%)**	**3350 (-16%)**	**57 (-79%)**	**69 (-95%)**

Table G-4. Projected emissions for 2012 and 2020 (with percent change for 2005 emissions) assuming increase in Port container throughput volume follows the **"medium growth"** scenario shown in Figure 5-1 and with all existing and likely regulations from Table 5-2 taken into consideration.

Emission Source	Emissions, TPY (%)									
	2012					2020				
	ROG	CO	NOx	PM	SOx	ROG	CO	NOx	PM	SOx
Total Off-Shore	**159 (15%)**	**282 (12%)**	**2301 (12%)**	**175 (2%)**	**926 (-3%)**	**217 (57%)**	**397 (58%)**	**3018 (46%)**	**56 (-67%)**	**73 (-92%)**
OGV - Off-Shore	136	200	2013	163	924	201	296	2821	48	73
Harbor Craft	22	82	287	13	2	16	101	198	8	0
Total On-Shore	**127 (-6%)**	**841 (32%)**	**1964 (-1%)**	**36 (-65%)**	**32 (-93%)**	**114 (-16%)**	**1160 (82%)**	**1375 (-29%)**	**20 (-81%)**	**19 (-96%)**
OGV - Berth	33	89	1008	19	30	18	49	529	11	17
CHE	38	582	427	11	1	51	934	226	4	2
Truck	50	157	422	4	0.3	38	151	405	2	0.4
Locomotive	6	13	107	2	0	7	26	215	3	0
Grand Total	**285 (4%)**	**1123 (26%)**	**4265 (6%)**	**211 (-23%)**	**958 (-33%)**	**331 (21%)**	**1557 (75%)**	**4394 (10%)**	**76 (-72%)**	**92 (-94%)**

Table G-5. Projected emissions for 2012 and 2020 (with percent change for 2005 emissions) assuming increases in Port container throughput volume follows the **"high growth"** scenario shown in Figure 5-1 and with all existing and likely regulations from Table 5-2 taken into consideration.

Emission Source	Emissions, TPY (%)									
	2012					2020				
	ROG	CO	NOx	PM	SOx	ROG	CO	NOx	PM	SOx
Total Off-Shore	**217 (57%)**	**386 (53%)**	**3153 (53%)**	**240 (40%)**	**1269 (33%)**	**327 (137%)**	**599 (138%)**	**4551 (121%)**	**84 (-51%)**	**110 (-88%)**
OGV - Off-Shore	186	274	2759	223	1266	303	446	4253	73	110
Harbor Craft	31	112	394	18	3	24	153	298	11	0
Total On-Shore	**150 (11%)**	**999 (57%)**	**2336 (20%)**	**43 (-58%)**	**38 (-92%)**	**135 (0%)**	**1377 (116%)**	**1636 (-16%)**	**23 (-77%)**	**23 (-95%)**
OGV - Berth	39	105	1196	22	36	21	58	628	13	20
CHE	45	691	507	13	2	61	1108	268	5	2
Truck	59	187	501	5	0.3	45	179	481	2	0.5
Locomotive	7	16	131	3	0	8	32	259	3	0
Grand Total	**368 (35%)**	**1385 (56%)**	**5489 (37%)**	**283 (4%)**	**1307 (-8%)**	**462 (69%)**	**1976 (122%)**	**6187 (54%)**	**108 (-61%)**	**133 (-91%)**

APPENDIX H

Air Quality Policy Statement and "Early Actions" to Reduce Air Pollutant Emissions and Related Human Health Risk

March 18, 2008
O-2
DWW/lhr

BOARD OF PORT COMMISSIONERS
CITY OF OAKLAND

RESOLUTION NO. 08057

RESOLUTION ADOPTING AND IMPLEMENTING A MARITIME AIR QUALITY POLICY STATEMENT PERTAINING TO HEALTH RISK REDUCTION GOAL AND "EARLY ACTIONS" TO REDUCE AIR POLLUTANT EMISSIONS

WHEREAS, under the Oakland City Charter, the Board of Port Commissioners ("Board") has the complete and exclusive power to "make provisions for the needs of commerce, shipping and navigation of the port . . . and to establish, equip and operate all other facilities or aids incident to the development, protection and operation of the port, as may be deemed proper and desirable in its judgment";

WHEREAS, as part of its powers and obligations to ensure the efficient and safe operation of the seaport and to provide for the needs of commerce, shipping and navigation, the Board finds it necessary to improve air quality and reduce the health risks to workers at the Port and residents of neighboring communities related to exposure of people to diesel particular matter emissions;

WHEREAS, as part of its capital development projects, the Board has historically adopted measures to mitigate significant impacts of these projects on the environment and the neighborhoods around the Port operations;

WHEREAS, most recently, the Port implemented a broad suite of capital facilities design, construction and operational measures to improve air quality and to enhance the quality of community environment, including a truck replacement program and the creation of the Middle Harbor Shoreline Park;

WHEREAS, the Port has completed its 2005 Seaport Emissions Inventory and has cooperated with the California Air Resources Board ("CARB") in completing CARB's West Oakland Health Risk Assessment which will show that air emissions from Port operations is one of many contributors to increased health risk (expressed as increase in cancer risk) for people at the Port and in West Oakland;

WHEREAS, CARB has established a goal to reduce statewide diesel particulate health risks from goods movement 85% from 2000 levels by 2020 and it, along with the Bay Area Air Quality Management District

("BAAQMD"), has or will adopted regulations to regulate air emissions levels from goods movement sources such as trucks, ships and equipment;

WHEREAS, the State of California will be awarding certain funding as part of the "Statewide Infrastructure Bond" (2006 Proposition 1B) for air quality improvement measures at California Ports;

WHEREAS, The Port, at the Board's direction, has engaged community, customer, industry and neighborhood stakeholders for input in the development of a Maritime Air Quality Improvement Plan ("MAQIP") to serve as the policy and master plan for air quality improvement measures and funding at seaport operations and a Comprehensive Truck Management Program ("CTMP") under which the Port will implement measures to reduce air quality and environmental impacts of Port-related trucking;

WHEREAS, the Board desires to set forth a policy that shall establish a goal for the Port's efforts, including the MAQIP and CTMP, to reduce the health risks related to people's exposure to diesel particulate matter emissions from Port sources, to establish funding mechanism for funding of air emissions reduction measures (including matching funds for the California Infrastructure Bond funding) and to implement certain "Early Action" measures that would implement certain CARB regulatory requirements prior to their compliance deadlines through incentive and other measures;

THEREFORE, BE IT RESOLVED THAT:

The Board of Port Commissioners affirms that it has the social responsibility to minimize exposure of neighboring residents to air pollution from Port sources and to support and rights of community, local businesses and workers to clean air and fair working conditions. Therefore, the Board is committed to improving air quality, safety and quality of life for neighboring residents and workers by reducing environmental impacts of Port operations, while fulfilling the Port's basic obligations to maximize commerce and to provide economic and job opportunities. To these ends, the Board hereby adopts the following policy principles that shall guide the Port's plans and actions, including the adoption of the Port's Maritime Air Quality Improvement Plan (MAQIP), Comprehensive Truck Management Plan (CTMP) and Early Actions (as defined below).

1. The Port adopts the goal of reducing the health risks to our neighboring communities (expressed as increase in cancer risk) related to exposure of people to diesel particulate matter emissions from Port sources by 85% by the year 2020 through all practicable and

feasible means. Reduction will be calculated based on the Port's 2005 Seaport Emissions Inventory baseline.

2. The Board commits to adopting funding mechanisms, including the imposition of fees, to fund air emissions reduction measures. To the maximum extent possible, Port fee revenues shall leverage matching federal, state and private funds. Fees for the purpose of funding the measures shall be evaluated for legality and be enacted to the extent that they do not damage the Port's or its customers' market competitiveness.

3. The Port will implement certain air emissions reduction measures prior to the dates that such measures are required by state or federal regulations, in order to reduce the duration of people's exposure to emissions that may cause health risks ("Early Actions"). The Port shall implement, beginning in 2008, Early Action measures for the purpose of immediately reducing the impacts of Port-serving trucks and other Port operations on West Oakland and surrounding communities. These measures shall include (a) incentives for Early Action replacement and/or retrofit of older polluting truck engines, (b) mechanisms for enforcing the prohibition of Port truck parking or operation on neighborhood streets, including truck registration and tracking and c) feasible and cost-effective means of reducing ship idling emissions. In order to fund these Early Action measures, the Board will adopt truck or containers fees and apply for matching state and federal funds;

and be it

FURTHER RESOLVED, that all measures adopted pursuant to the principles set forth above (a) shall be consistent with the guidelines and criteria set forth in the MAQIP or as otherwise adopted by the Board, (b) may be adopted as part of capital-project environmental mitigation, (c) shall be undertaken only when practicable and technologically, legally and economically feasible, (d) shall be funded contingent upon receipt by the Port of fee revenues and State of California Infrastructure Bond funding (California Proposition 1B (2006)), and (e) shall not be contrary to the Port's obligations as

State tidelands trustee and under the City of Oakland Charter, state law or federal law; and be it

FURTHER RESOLVED, that the Executive Director shall be authorized to take all necessary actions, including engaging professional services, (a) to prepare and submit application (including any application submitted jointly with the BAAQMD) for State Infrastructure Bond funds for air quality improvement measures, (b) to present appropriate ordinances and resolutions to adopt fees or other funding mechanisms to fund air quality measures and infrastructure funding, (c) to complete the MAQIP for Board adoption and approval and (d) to arrange for and conduct a forum or conference open to the public to consider the full spectrum of issues related to the alternative components of the CTMP, including certain requirements for trucker qualifications as part of a truck concession program; and be it

FURTHER RESOLVED, that the Executive Director is authorized to negotiate and execute a professional service contract in a contract amount not to exceed $220,000 without further approval by the Board for the study of the economic, business, competitiveness, operational and other impacts of various alternative components of the CTMP, including requirements for trucker qualifications as part of a trucker concession program; and be it

FURTHER RESOLVED that this resolution represents the Board's policy on Port's efforts on Air Quality Improvements. It is not evidence of and does not create or constitute (a) a contract, or the grant of any right, entitlement or property interest, or (b) liability on the part of the Board or any officer or employee of the Board.

At the regular meeting held on March 18, 2008

Passed by the following vote:

Ayes: Commissioners Ayers-Johnson, Gordon, Katzoff, McClure, Scates, Uno and President Batarse – 7

Noes: None

BOARD MTG. DATE: 3/18/08

AGENDA REPORT

Item: O-2

TITLE: Adoption and Implementation of "Maritime Air Quality Policy Statement" and "Early Actions" to Reduce Air Pollutant Emissions and Related Human Health Risk

AMOUNT: See Budget and Financial Impact Section (below)

PARTIES INVOLVED:

Corporate Name/Principal	Location
Board of Port Commissioners	530 Water Street, Oakland, California

TYPE OF ACTION: Resolution

SUBMITTED BY: Omar Benjamin

COMMITTEE ASSIGNED:

SCHEDULED FOR COMMITTEE:

APPROVED BY: Omar Benjamin, Executive Director

SUMMARY

Pursuant to Board's direction to take all feasible measures to reduce air pollutant emissions from Port operations, this report sets forth a "Policy Statement" that would establish the Port's official commitments. If adopted, the Policy Statement would commit the Port to (a) an 85% health risk reduction goal related to exposure to diesel particulate matter emissions by the year 2020 (b) "Early Actions" to immediately implement air pollutant reduction measures, including the replacement and retrofit of "dirty" trucks and (c) establish feasible funding mechanisms for such measures..

The Maritime Air Quality Policy Statement would be:

> *"The Board of Port Commissioners affirms that it has the social responsibility to minimize exposure of neighboring residents to air pollution from Port sources and to support and rights of community, local businesses and workers to clean air and fair working conditions. Therefore, the Board is committed to improving air quality, safety and quality of life for neighboring residents and workers by reducing environmental impacts of Port operations, while fulfilling the Port's basic obligations to maximize commerce and to provide economic and job opportunities. To these ends, the Board hereby adopts the following policy principles that shall guide the Port's plans and actions, including the adoption of the Port's Maritime Air Quality Improvement Plan (MAQIP), Comprehensive Truck Management Plan (CTMP)and Early Actions (as defined below)."*

1. "The Port adopts the goal of reducing the health risks to our neighboring communities (expressed as increase in cancer risk) related to exposure of people to diesel particulate matter emissions from Port sources by 85% by the year 2020 through all practicable and feasible means. Reduction will be calculated based on the Port's 2005 Seaport Emissions Inventory baseline."

2. "The Board commits to adopting funding mechanisms, including the imposition of fees, to fund air emissions reduction measures. To the maximum extent possible, Port fee revenues shall leverage matching federal, state and private funds. Fees for the purpose of funding the measures shall be evaluated for legality and be enacted to the extent that they do not damage the Port's or its customers' market competitiveness."

3. "The Port will implement certain air emissions reduction measures prior to the dates that such measures are required by state or federal regulations, in order to reduce the duration of people's exposure to emissions that may cause health risks ("Early Actions"). The Port shall implement, beginning in 2008, Early Action measures for the purpose of immediately reducing the impacts of Port-serving trucks and other Port operations on West Oakland and surrounding communities. These measures shall include (a) incentives for Early Action replacement and/or retrofit of older polluting truck engines, (b) mechanisms for enforcing the prohibition of Port truck parking or operation on neighborhood streets, including truck registration and tracking and c) feasible and cost-effective means of reducing ship idling emissions. In order to fund these Early Action measures, the Board will adopt truck or containers fees and apply for matching state and federal funds"

FACTUAL BACKGROUND

Context

The policy context for adoption of the Maritime Air Quality Policy Statement is comprised of the Port's past and current environmental planning, and environmental justice, and commercial programs and practices. For the Port maritime activities, the key efforts currently underway are the Maritime Air Quality Improvement Plan ("MAQIP) and the Comprehensive Truck Management Program ("CTMP.")

Air Quality and Environmental Justice Measures: Past and Current Practices

Historically, the Port of Oakland has analyzed the environmental effects of its projects and operations as part of its capital projects development process, as required by state and federal environmental statutes. Where impacts to the environment were deemed potentially significant or significant, the Port adopted and implemented environmental measures to mitigate these impacts.

In the mid-1990s, the Port expanded the scope of its environmental efforts to address community air quality concerns that arise from Port operations. For example, the Port adopted the "Vision 2000 Air Quality Mitigation Program" to mitigate the significant air quality effects resulting from redevelopment of the former Fleet Industrial Supply Center (FISCO) into Berths 55-59 and the Joint Intermodal Terminal. In the Vision 2000 Air Quality Mitigation Program, the Port also included neighborhood air quality measures and equipment replacement, repower, and retrofit measures.

Additionally, the overall Vision 2000 Maritime Development Program and the -50 Channel Deepening Program included a broad suite of capital facility design, construction, and operational features intended to improve the environmental performance of the Port's maritime facilities and to

enhance quality of life and community health. For example, the Port and the community collaborated on the design and planning of Middle Harbor Shoreline Park and the Middle Harbor Enhancement Area, which led to the creation of over 40+ acres of new public open space and 188 acres of shallow-water habitat at the center of the seaport and adjacent to the neighborhoods of West Oakland. The Port pays the East Bay Regional Park District to maintain and operate Middle Harbor Shoreline Park.

Largely as a result of community input on the Vision 2000 Maritime Development Program and on other Port projects and activities, the Port now plans its projects, programs, and operations with an enhanced focus on a broad spectrum of environmental and environmental justice concerns and values. This focus involves on-going and sustained collaboration, consultation and dialogue with the Port's diverse constituencies and stakeholders. By these means, the Port and its stakeholders identify key environmental, business, and environmental justice concerns and collaborate on the crafting of applicable policies, plans, and feasible measures and initiatives.

The Maritime Air Quality Improvement Plan (MAQIP) and the Comprehensive Truck Management Plan (CTMP)

The Board and the Executive Director have continuously affirmed and stated that the Port is wholly committed to the principles of sustainability in Port development and operations. In terms of current and future maritime facilities and operations, this means addressing air quality and Port goods movement in a manner tailored to the particular needs and concerns of the neighboring residents, tenants, workers, and businesses who form the Port of Oakland community of stakeholders; that reflect sustained collaboration and consultation with community stakeholders regarding environmental quality and environmental justice issues; and that promotes the viability of the Port as a major producer of jobs and economic activity in the Bay Area and Northern California. To this end, the Port has engaged in two parallel public participation processes: one to develop the Maritime Air Quality Improvement Program (MAQIP) and the other to develop a Comprehensive Truck Management Program (CTMP.)

The Maritime Air Quality Improvement Plan (MAQIP) serves as the policy and master plan document that (a) sets an overall health risk reduction goal related to exposure to diesel particulate matter emissions, including interim health risk reduction goals, and associated emission reduction targets; (b) outlines specific air pollutant reduction goals; and (c) provides a set of "screening criteria" for prioritizing air emission reduction measures that the Port would implement when such measures become practicable and feasible. The MAQIP process has been guided by a multi-stakeholder Task Force and by a steering committee (i.e. "Co-Chairs Group") comprised of the Port's Executive Director, Mr. Omar Benjamin; the Executive Officer/Air Pollution Control Officer of the Bay Area Air Quality Management District, Mr. Jack P. Broadbent; Mr. Brian Beveridge, West Oakland Environmental Indicators Project, as "community chair" and Mr. Andy Garcia (of GSC Logistics) as "industry chair". The Co-Chairs Group has met at least 15 times and the entire MAQIP Task Force has held 5 meetings since inception of the MAQIP Process in April 2007. Staff proposes to bring the MAQIP to the Board for adoption in Summer 2008. It is envisioned that a subset of the stakeholder group (or a different committee) would continue to inform the Port's air quality efforts during drafting, adoption, and on-going implementation of the MAQIP.

The Comprehensive Truck Management Program (CTMP) is a broad, over-arching plan initiated by the Port of Oakland Maritime Division, with significant collaborative multi-stakeholder involvement, that addresses the business, air quality, environmental justice, worker, and community quality of life effects of Port-related trucking. The CTMP stakeholder group has met 10 times during 2007, including an additional 21+ meetings held as part of stakeholder involvement activities.

The objectives of the CTMP are to improve the quality of trucking services to shippers utilizing Port facilities, enhance Port security and safety, improve traffic flow in the Port and surrounding neighborhoods, improve coordination between truckers, terminal operators, shippers, and shipping lines, contribute to improved trucker productivity, quality of life and working conditions, reduce emissions from Port drayage trucks, support the Port's environmental initiatives, and mitigate the impacts of Port-related trucking neighborhoods immediately adjacent to the Maritime Area.

CONCURRENT EVENTS

Concurrent with the Port's community and stakeholder process to develop the MAQIP and the CTMP, various state agencies have been engaged in parallel efforts that would be integrated with the Port's commitments. The California Air Resources Board (CARB) has adopted regulations to mandate air pollutant reduction measures. Most notably, regulations now require the phase-out of older drayage trucks and the phase-in of shoreside power to supply power to idling ships. Later this month, CARB is expected to release a "health risk assessment" of the health risks posed to West Oakland residents from exposure to various sources of diesel particulate matter emission, including those emanating from Port operations. The Bay Area Air Quality Management District is proposing a system of monitoring of and incentive funding for air pollutant reduction measures. Finally, the state is now poised to release funds from the statewide Infrastructure Bond to match Port's funds committed to air pollutant emissions reduction.

ANALYSIS

Health Risk Reduction Goal, Early Action Measures and Funding Mechanism

The Policy Statement would serve as the guiding principles for the Port's own measures and integration with other statewide efforts.

First, the Policy Statement would commit the Port to a goal of reducing overall health risk from diesel particular matter emissions by 85% by the year 2020 – a goal that complements CARB's goal to reduce the statewide diesel particulate health risk from goods movement 85 percent from 2000 levels by 2020.

Second, the Port would commit to taking early actions that address health risk and exposure, prior to formal completion of both the MAQIP and CTMP processes and prior to the effective dates of any state or federal regulations ("Early Actions"). This directly responds to stakeholder requests that Early Actions be taken to reduce residents' exposure to particulate matter emissions while more comprehensive measures are planned and as regulations take effect over time. The Early Actions would specifically address the impact of Port drayage trucks on our community. As the initial phase of the CTMP, the Port would implement a program to retrofit and replace older polluting trucks with low-emission engines and to better enforce the prohibition on truck parking and operation in neighborhoods.

Third, Port staff will recommend the adoption of fees in amounts that would not adversely affect the market competitiveness of the Port and of its tenants and customers. The funds raised from these fees would match the I-Bond funds for which the Port will apply. One of the fees will be a "truck fee" to fund truck retrofit and replacement.

Future Policy Considerations

The Board's adoption of the proposed health risk reduction goal and the Early Actions is an essential step to reducing air pollution emissions and to remove trucks from the West Oakland neighborhood as soon as feasible. However, staff recognizes that, during meetings with stakeholder regarding the Policy Statement, many commented that the Policy Statement does not go far enough to address the social equity aspects of the trucking drayage system while others claim that the proposed commitments exceed the Board's legal authority. These criticisms merit preliminary discussions here. Staff proposes also to study the economic, legal and social implications of these stakeholder suggestions in order to recommend to the Board more detailed and better-supported policy actions at future Board meetings.

The specific issues to be studied include, but are not limited to: (a) *should the Board adopt a policy requirement that all truckers serving the Port must be employed by trucking companies ("Employee Trucker Requirement")?; and (b) does the proposed Policy Statement exceed the Port's authority?* Below is some preliminary discussion of the issues:

"Employee Trucker Requirement"

Advocates of the Employee Trucker Requirement argue that, with an Employee Trucker Requirement, it would be easier for the Port to enforce air quality, safety and operational standards since only a relatively small number of established trucking companies would be qualified to operate at the Port. Port staff have met with and consulted with the advocates of the Employee Trucker Requirement. These advocates have stated to Port staff and in public meetings that there is an inextricable link between the Employee Trucker Requirement and the achievement of the environmental and health risk reduction goals. On the other hand, critics would argue that trucking drayage costs to cargo owners and shipper are likely to rise significantly, thereby making the Port a less competitive choice for cargo throughput. Additionally, certain independent contractor truckers complain that an Employee Trucker Requirement would deprive them of the opportunity to run and direct their own businesses. The Employee Trucker Requirement is being considered by the Port of Los Angeles; while the Port of Long Beach has deferred consideration of the requirement until such time that other elements of its Clean Truck Program has been implemented and tested. Other West Coast ports have not implemented such a model.

Clearly, the debate over the Employee Trucker Requirement is multi-faceted, involving considerations of economic feasibility, labor policies, politics and legal feasibility. The trucking industry was federally deregulated and many of the independent-contractors truckers operating at the Port have little market power to negotiate for better pay or benefits. However, the Port is a minor part of the trucking system, for which federal law has preempted local regulation.

In the face of the complexity of this issue, staff is researching creative ways to address Port truck management tailored to the needs of the Oakland community as part of its CTMP. While it is clear that the current truck drayage system promotes disparity in trucker compensation and working standards for the mostly independent truck owner-operators, it is unclear how enacting an Employee Trucker Requirement would impact the Port's cost competitiveness, drayage availability, and operating capacity. For example, there has been no definitive study of how an Employee Trucker Model would affect the supply of drayage services that would be available to continue efficient Port operations.

Because the Port's chief legal obligations under the City Charter, tidelands trust principles and federal law are to promote the efficient carrying out of commerce, it is incumbent upon the Port to carefully gather evidence showing whether enacting the Employee Trucker Requirement would promote or impede commerce. Staff proposes to immediately study this issue and to document the possible impacts of an Employee Trucker Requirement. In the meantime, staff will also examine other creative means of improving the safety and efficiency of the truck drayage system that are tailored to Oakland's unique circumstances. Staff intends to return to the Board with a recommendation for the next phase of the Comprehensive Truck Management Program by the end of June, 2008.

The Port's Authority

Aside from the potential obstacles to enactment of an Employee Trucker Requirement, certain stakeholders also claim that the Port lacks legal authority to adopt even the proposed Early Actions to reduce air pollutant emissions. Staff believes that the Board has such authority.

Charging a reasonable fee that does not adversely affect the Port's competitiveness in order to fund truck replacement and retrofit to reduce air pollutant emissions is a legitimate exercise of the Port's market participant or proprietary interest. Through its air emissions inventory and the forthcoming CARB health risk assessment, the Port has demonstrated that it has a legitimate business interest to ensure that trucks entering the Port area do not contribute to diesel particulate matter air pollution and to raise revenues to the extent feasible in order to fund cleaner equipment.

Since CARB has already set a standard through its study and regulatory process of what constitutes a "clean truck" for purposes of federal and state law, it would certainly be reasonable for the Port to exclude or to charge a practicable and reasonable fee of trucks that do not meet CARB standards.

Staff proposes to further investigate the limits of the Port's authority in proposing any future air pollutant reduction measures. The Proposed Policy Statement makes it clear that all measures and fees adopted must be practicable and feasible and are to be reviewed for their legality.

BUDGET & FINANCIAL IMPACT

The Maritime Division plans to impose a container fee to address the three key needs for the environmentally sustainable growth of cargo into the future:

- The Ports Comprehensive Truck Management Program (CTMP);
- Infrastructure modernization and improvements;
- Environmental Programs as envisioned in the Maritime Air Quality Improvement Program (MAQIP).

The Maritime Division staff is working on details of the level of fees, where the fees would be imposed, and the method of collection. The Maritime Division staff proposes to set a fee level that preserves and enhances the Port's competitive position.

As part of the initial phase of the CTMP, the funding will provide for the retrofit of approximately 75% of all the trucks that operate at the Port with Diesel Particulate Filters (DPF). Each of those trucks will see an approximately 75-80% reduction in diesel particulate matter (the major driver of health risk). Further, the life of these trucks will be extended till 2014 when the Port will be

implementing a "Phase II" program of truck replacement. Additionally, the Port intends to collaborate with California Air Resources Board (CARB) and the Bay Area Air Quality Management District (BAAQMD) to fund the replacement of approximately 400 older drayage trucks.

The Port will provide $50 million for this program which will be funded by user fees and will seek I-Bond funding for $20 million over three years.

The other two components of the Port-generated user fees consist of required match funding for Infrastructure modernization, 7th street grade separation ($300 million total cost, 50% I-Bond grant); and environmental initiatives, such as cold ironing ($150 million.)

Over the next several years, the Port can expect to spend about $200 million of Port-generated funds for retrofitting and replacing trucks and implementing other air quality initiatives such as alternative marine power sources which would address the two biggest contributors to health risk from Port activities.

STAFFING IMPACT

Adoption of the Policy Statement and Early Actions, including funding mechanisms is not expected to result in a change in FTEs in the near-term. However, as part of the Port of Oakland's process of long-term strategic alignment and business planning, it is expected that full implementation of environmental commitments and programs arising from the Policy Statement and related MAQIP, CTMP, and other environmental commitments, may require additional staffing.

SUSTAINABILITY

Adoption of the Maritime Air Quality Policy Statement and Early Actions supports the Port of Oakland's Sustainability Policy (Port Resolution No. 20467.) Among many Sustainability criteria evaluated, the Adoption of the Maritime Air Quality Policy Statement is supportive of the Sustainability Policy because 1) both the MAQIP and CTMP involve active and on-going collaborative community participation; 2) the Early Actions promote community health, social equity and stronger communities; and 3) the Adoption of the Policy Statement and Early Actions have the likelihood to promote the use of alternative sources of energy, including alternative fuels.

ENVIRONMENTAL (CEQA) DETERMINATION

This action by the Board is exempt from the requirements of the California Environmental Quality Act (CEQA), Public Resources Code Section 2100 et seq. and Title 14, Chapter 3 of the California Code of Regulations (the CEQA Guidelines), for the following three reasons.

First, this action by the Board is not a "project" that is subject to CEQA. CEQA only applies to projects, as defined by applicable provisions of State statutes (Public Resources Code Sections 2100 et seq., including Section 21065) and the CEQA Guidelines (15378). CEQA Guidelines Section 15378(b)(2) indicates that the term "project", as used in the State's Public Resources Code and the CEQA Guidelines, does not include "continuing administrative or maintenance activities, such... general policy and procedure making...." This action by the Board involves the adoption of a general policy aimed at protecting the environment. In this case, the policy relates to the adoption of a policy statement and early action items, including the creation of funding mechanisms. Thus, the Board's action, as indicated by CEQA Guidelines Section 15378(b(2), is not a "project" under CEQA.

Moreover, CEQA Guidelines Section 15378(b)(4) provides that the term "project" also does not include "the creation of government funding mechanisms or other government fiscal activities, which do not involve any commitment to any specific project which may result in a potentially significant physical impact on the environment." CEQA Guidelines Section 15382 defines "significant effect (impact) on the environment" to mean "a substantial, or potentially substantial, adverse change in any of the physical conditions within the area affected by the project ..." The current action by the Board potentially creates "funding mechanisms" to fiscally support the Board's policy regarding health related to diesel particulate matter emissions from Port sources. As indicated, that policy will have a beneficial effect, not an adverse effect, on the environment. As such, the Board's action, pursuant to CEQA Guidelines Section 15378(b) (4), is not a "project" under CEQA.

Second, this action by the Board is also exempt from CEQA by CEQA's "general rule." To the extent the Board's action is a "project" under CEQA, Section 15061(b) (3) of the CEQA Guidelines provides that such "project" is exempt from CEQA in that CEQA applies only to "projects which have the potential for causing a significant effect on the environment. Where it can be seen with certainty that there is no possibility that the activity in question may have a significant effect on the environment, the activity is not subject to CEQA." Here, the Board's action will have a beneficial effect, not an adverse effect, on the environment, including community health. Thus, to the extent the Board's action herein is a "project" under CEQA, it is exempt by the CEQA "general rule" that is stated in CEQA Guidelines Section 15061(b) (3).

Third, this resolution is exempt from the requirements of the CEQA pursuant to CEQA Guidelines Section 15308: *Actions by Regulatory Agencies for Protection of the Environment*, which consists of actions taken by regulatory agencies, as authorized by state law or local ordinance, to assure the maintenance, restoration, enhancement, or protection of the environment.

Because Section 15308 exempts actions taken by regulatory agencies to protect the environment, and because the Port, acting in its regulatory capacity as the planning agency within the Port Area, is such a regulatory agency, it can be seen that the Port's adoption of the Policy Statement, and early actions, is exempt from the requirements of CEQA. (City of Oakland Charter Sections 106, 701, and 706(6), and California Constitution, Article IX, Section 6.

MARITIME AND AVIATION PROJECT LABOR AGREEMENT (MAPLA)

N.A.

OWNER CONTROLLED INSURANCE PROGRAM (OCIP)

N,A,

GENERAL PLAN

N,A,

LIVING WAGE

N,A,

OPTIONS

The Board can consider the following options:

- Option #1: Approve adoption and implementation of the Maritime Air Quality Policy Statement and Early Actions to Reduce Air Pollutant Emissions and Related Health Risk. Option #1 would promote 1) the Port's ability to secure matching grant funds for early air quality improvement measures; 2) near-term reduction in diesel particulate matter exposure duration and proximity; and 3) phased implementation of the Comprehensive Truck Management Program.

- Option #2: Disapprove adoption and implementation of the Policy Statement and Early Actions to Reduce Air Pollutant Emissions and Related Health Risk. Option #2 has the potential to compromise the Port's ability to secure matching grant funds, particularly in the early grant funding cycles, which might adversely affect the Port's ability to implement near-term air quality improvement measures.

RECOMMENDATION

Port staff recommends:

Option #1: Adoption and Implementation of Air Quality Policy Statement and "Early Actions" to Reduce Air Pollutant Emissions and Related Human Health Risk.

To implement Option #1, Port staff to prepare and submit applications to the CARB for air quality funds, prepare Port fee ordinances, convene a public forum in late Spring (May-June 2008) to consider the full spectrum of issues related to Employee Trucker Requirement, authorize and retain a professional services consultant and prepare a detailed report for Board consideration by the consultant to inform decision-making regarding the Employee Trucker Requirement. These implementation steps are targeted for completion following Board action on the Maritime Air Quality Policy Statement BY June 30, 2008.

APPENDIX I

Proposed Initiatives that Did Not Pass the Round One Screening (Organized by Category)

Proposed Initiatives that Did Not Pass the Round One Screening (Organized by Category)

KEY CONCEPTS
5) Make every feasible effort to reduce localized risk in communities adjacent to goods movement facilities as expeditiously as possible.
6) Establish a shared assumption that "further growth of the ports and shipping could not proceed without dealing with community impacts."
7) Place impacted communities at the center of decision-making on the growth of freight transport and make community health concerns front and center ("ground zero").
9) Incorporate environmental justice principles and analysis in freight transport planning.
37) Make the Port of Oakland a model for achieving reductions through creative initiatives that are not regulatory driven.
48) Share accountability among the Port, the City, and the County with the support and involvement of all three.
255) Give more latitude to the Port to improve performance standards.
314) Draw on knowledge and experience from the community.
315) Integrate port and city planning/promote use of buffer zones between ports and surrounding communities.
POLICY
1) Reduce goods movement emissions at least back to 2001 levels by 2010.
4) Adapt and incorporate the state's findings and resolutions for goods movement (including ARB Resolution 06-14) and apply them at the local level as a starting point for clean up at the Port of Oakland. At a minimum, this would require an 85% reduction in diesel risk from goods movement related activities by 2020.
10) Apply a "best available green technology" standard to all measures in the Port of Oakland MAQIP.
11) Subject all final project plans for freight transport expansion to CEQA review and perform mitigation for every infrastructure project both independently and as an entire system to account for system wide impacts.
13) The Port Commission must be very involved, set policies and drive the process.
26) Enact public-private partnership legislation.
53) Require importers, exporters, shippers, rail companies and other industries to pay the full costs of moving goods through California, including the health costs from pollution that are borne by California Residents. (Example: Companies pay a charge per container)
141) Increase compliance with vessel speed reduction requirements out to a specified distance from the Port.
201) Utilize a uniform statewide approach in addressing emissions at rail yards to provide the greatest and most immediate health and welfare benefits to the people of California.
216) Standardize routine stack opacity tests on locomotives.

245) Encourage common-sense regulations on land-use – CARB land-use guidelines clearly indicate approving new housing within 500 feet of major sources of diesel pollution is not recommended due to health risk, yet city councils continue this practice.
246) Regulate hubs in the freight transportation system as large fixed sources, similar to factories.
251) Develop model ordinances on issues such as idling of diesel equipment for adoption by local jurisdictions.
253) Sponsor and/or support legislation to reduce criteria pollutant and toxic emissions, such as SB 1601 which would have required Best Available Control Technology to reduce emissions at California ports. Phase I findings will help identify and advocate for additional legislation.
254) Develop a local/regional policy to give stakeholders more say in implementation of new technologies.
256) Revise the Jones Act to optimize goods movement, and thus minimize emissions and fuel used. ("Short-Sea Shipping")
257) Create a national policy for goods movement that applies to ports to level the playing field and reduce emissions.
FORUM/COLLABORATION
14) Ensure Port staff is well organized and aggressive about getting needed information; the Port must involve the relevant agencies with technical expertise, including the Air Resources Board, Air District and U.S. EPA.
15) Create an "agency caucus," with a role that is transparent to the community and other sectors.
21) Initiate a discussion with labor and industry to reduce emissions and increase efficiency, including increasing the times when trucks and ships can access the terminals.
91) Convene a stakeholder process to create a designated truck route that does not travel through the West Oakland neighborhood.
165) Commit to working with owners and operators to implement pilot projects, including educational campaigns.
243) Provide clear direction. (Oakland Mayor's office)-Involve the community in selecting replacements for Port Commission vacancies.
249) Engage affected communities through continued public involvement efforts. Work with local Resource Teams to encourage public involvement and use public workshops to explain new regulations and communicate findings.
250) Continue collaboration with other governmental agencies such as Cal/EPA, the ARB, the Metropolitan Transportation Commission, and the Port of Oakland to reduce air quality impacts.
303) Consult community members regarding infrastructure plans throughout the planning process.
304) Establish Community Advisory Committee for the EIR /EIS stage of an infrastructure project (for projects that have not already gone through the environmental review process).
308) Establish a community forum to address community concerns during construction.
312) Hold public meetings when members of the affected community can attend (e.g., in the evening).

Proposed Initiatives that Did Not Pass the Round One Screening (Organized by Category)

FUNDING
8) Include mitigation funding for community impacts with all new infrastructure projects.
50) Collect a fee (from the Port itself, shipping lines, or terminal operators) to establish and support a community fund. Community members would then use the fund to support pollution reduction efforts and health initiatives such as an asthma clinic and health education program.
72) Funding for the Clean Trucks Program is shared among the Ports, the local Air Quality Management District, Proposition 1B Funds, and the "Truck Impact Fee"
128) Where possible, provide grants, in-kind monies, and other financial support to owners/carriers to encourage them to test new technologies on their vessels.
207) Fund mitigation programs through sources such as railroads and industries, the Carl Moyer program and US EPA.
330) Develop a Federal, State, and Local funding strategy.
HEALTH RISK
51) Develop an inventory of toxic air contaminants (TAC) and identify locations and populations with a relatively high health risk.
52) Use the findings of the Bay Area Air Quality Management District's CARE program to design and implement measures for exposure reduction.
206) Identify the risks from toxic air contaminates that rail yards represent in affected communities through Health Risk Assessments of Toxic Air Contaminants at designated California Rail Yards.
295) Track emission reductions and estimated cancer risk reduction in communities.
INCENTIVES/ PENALTIES
17) Determine how to bring the beneficial cargo owners into the process. For example, provide incentives or recognition to beneficial cargo owners that use carriers exceeding regulatory requirements.
18) Explore penalties for beneficial cargo owners who do not use carriers exceeding, regulatory requirements.
19) Place a public billboard that recognizes companies who excel in reducing emissions and/or improving the efficiency of their operations.
32) Conduct energy audits and implement feasible improvements.
34) Provide corporate recognition to companies that go above and beyond regulatory requirements. Develop the program within the Oakland community, and provide recognition as a valuable community partner.
45) Implement incentives to limit container dwell time.
85) Allow alternative fuel trucks to the front of the truck queues.
105) Establish a system that allows cleaner trucks move to front of the line.
61) Charge a license fee to obtain a trucking company concession

67) Clean Truck Replacement and Retrofit Grants are given only to licensed concessionaires, with the amount based on miles driven and frequency of Port calls.
RESEARCH/ FURTHER STUDY/TECHNOLOGY ADVANCEMENT
16) Review the existing system for distributing information about required actions (both laws and Port rules) to Port business operators, such as individual truck drivers. If that system isn't functioning well, seek ways to improve it so that operators are aware of existing requirements. This applies to all businesses, including trucks, railroads, ocean carriers, and others.
24) Improve communications of fluctuating demand forecasts for labor and equipment among carriers, railroads, and terminal operators.
25) Develop comprehensive goods movement data collection methodologies, modeling, and data evaluation.
28) Continue to test cleaner fuels and technologies
36) Use IT technology to link industries working at the port - increase the IT capacity for the trucking industry, and implement common systems across industries. Increased digital capacity and efficiency in communication will reduce emissions.
49) Involve this Department in developing and implementing mitigation measures and other aspects of addressing health impacts of goods movement.
70) All trucks in the program will be issued radio frequency identification (RFID) tag for tracking.
78) Conduct terminal efficiency studies and improvements.
83) Study the feasibility of a heavy-duty truck test station.
89) Perform feasibility study of short sea shipping as an alternative to truck transport.
95) Determine standards for a reasonable queuing time.
98) Assemble a database of truck ages to reduce the use of old trucks.
99) Explore registration rules for DMV for trucks to determine if there are mechanisms to establish a vehicle inspection and maintenance program for trucks, similar to what exists for passenger cars.
108) Work with manufacturers to design engines that can run on alternative fuels such as bio-diesel.
118) Accelerate software upgrade for trucks.
134) Study feasibility of hybridization or electricity generation during voyage.
139) Conduct feasibility studies for other types of shore power or other at-dock treatment infrastructure.
140) Evaluate and update environmentally preferable vessel design considerations for future new builds and prepare a list of such vessel design features to promote with owners, carriers, yards, and the general industry.
144) Explore technological alternatives to cold ironing, such as the Wittmar Project.

Proposed Initiatives that Did Not Pass the Round One Screening (Organized by Category)

146) Evaluate short- sea shipping – including environmental impacts.
164) Run pilot programs to test hybridization.
170) Seek ways to go above and beyond CARB's yard tractor programs.
208) Evaluate "Remote Sensing" technology to identify high-emitting in-use locomotives along the tracks. (Page 11)
209) Evaluate medium-term and longer-term alternatives such as diesel particulate filters and oxidation catalysts and the use of lower-emission technologies such as LNG or CNG fueled locomotives.
213) Complete the evaluation of switch- yard electrification for long-term objectives.
214) Evaluate and pilot the use of a hybrid -switching engine.
220) Actively pursue pilots and demonstration projects of existing technologies such as switch-engine anti-idling and recapturing electricity during line haul.
226) Explore increasing the capacity of on-dock rail movement.
227) Evaluate shuttle train pilot project performance.
259) Assign Danny Wan (Port legal counsel), and UC Berkeley Boalt law students to develop a legal analysis that defines the maximum authority to require compliance via lease agreements through (1) Port actions only, and (2) the joint effort of the Port and partner agencies.
282) Monitor performance of systems employed and practices implemented in previous terms and revise plans or practices as needed.
354) Establish three integrating centers for all data and system managements at the ports, Mexican border, and the Inland Empire using the Metrolink model.
VAGUE
3) Apply emissions reductions strategies for ports and goods movement statewide.
22) Improve operations and technology.
29) Include an alternative fueling station in redevelopment design
31) Provide leadership in energy and environmental design.
63) Do not limit the number of concessionaires to start
64) Give preference to existing owner/operator drivers
68) Subsidized trucks must be concessionaire owned and are contractually required to stay in Port service for a specific period of time or mileage
73) It is envisioned that a third party will administer the Clean Trucks Program
284) Ongoing implementation of intermediate actions.

Proposed Initiatives that Did Not Pass the Round One Screening (Organized by Category)

302) Expand public outreach.
323) Replicate model across California.
NOT APPLICABLE
12) Environmental impacts should be measured against the short- and long-term environmental gains of the Port Redevelopment Project. Short-term gains would be achieved through increased public access to open space, accompanying recreational opportunities,
23) Employ better trade and transportation forecasting.
42) Expand labor force at the ports.
62) Require employee drivers rather than owner/operators (after a transition period)
65) Require concessionaires to participate in City workforce development initiatives
66) Require concessionaires to certify drivers and adhere to national and local security standards
90) Evaluate dedicated terminal to rail yard routes.
111) Provide visual messaging to route local traffic during times that local routes are congested with idling trucks.
145) Spread out vessel sailings and arrivals in the trans-Pacific trade.
150) Implement vessel speed reduction MOU in Southern California.
258) Collaborate with refineries and distributors to explore ways of increasing supply, access and availability through increased distribution locations and price subsidies.
261) Apply thoroughly and enforce existing water quality requirements (e.g., permits, certifications, etc.) on projects, and treat complaints, tips and violations (noncompliance with requirements) as a high priority – particularly at port operations areas, truck traffic idling areas, and upland disposal areas of any dredged materials.
262) Identify waste load allocations (pollutant level targets, in terms of mass discharge allowed) for port-area water bodies currently listed as impaired [pursuant to Clean Water Act section 303(d)].
263) Review current ballast water exchange practices and identify opportunities to further mitigate exotic species introduction.
264) Initiate studies to better understand relationship between airborne emissions in port areas and water quality and beneficial use impacts.
265) Initiate studies to identify community impacts from project-related activities with regards to water quality and beneficial use of the waters (with special attention to potential environmental justice impacts and subsistence consumption and recrea
266) Identify sources of marine debris discharges in port areas and begin to eliminate them.
267) Implement better land planning practices that employ the key principles of Low Impact Development (LID). For example: use site hydrology as the organizing principle for all others.

Proposed Initiatives that Did Not Pass the Round One Screening (Organized by Category)

268) Match the initial abstraction and mimic natural water balance.
270) Decentralize controls and disconnect impervious surfaces.
271) Minimize land disturbance and connected, impervious cover.
272) Incorporate natural site elements into design.
273) Establish redundant systems to eliminate or reduce discharges of marine debris and other pollutants causing impairments.
274) Establish performance measures to measure effectiveness of mitigation activities and overall mission to protect enhance and restore beneficial uses of waters in project areas.
275) Continue to thoroughly apply and enforce existing water quality requirements (e.g., permits, certifications, etc.) on projects, and treat complaints, tips and violations (noncompliance with requirements) as a high priority – particularly at port o
276) Apply waste load allocations (pollutant level targets, in terms of mass discharge allowed) for port-area water bodies approved and in force.
277) Continue to identify waste load allocations (pollutant level targets, in terms of mass discharge allowed) for port-area water bodies currently listed as impaired [pursuant to Clean Water Act section 303(d)].
278) Implement better ballast water exchange practices and identify opportunities to reduce and further mitigate exotic species introduction.
280) Implement recommendations from studies to enhance and restore water quality and beneficial use of the waters (with special attention to potential environmental justice impacts and subsistence consumption and recreational uses) in communities surro
281) Continue to implement better land planning practices that employ the key principles of Low Impact Development (LID).
283) Ongoing implementation of short-term actions.
285) Develop a statewide Hazardous Waste and Contaminated Media Management Plan for goods movement-related infrastructure projects to ensure the integrated, safe management of hazardous wastes and substances encountered during project design and constr
286) Account for the costs of any required management of contaminated soils, mitigation of other hazardous substances contamination, and oversight of compliance with related regulatory requirements in the planning and execution of infrastructure projects.
287) Design infrastructure projects with an effort to minimize exposure to hazardous substances and to manage hazardous substances to minimize public health and environmental impacts of any removal, transportation, treatment, and onsite management.
288) Ensure that hazardous substances mitigation approaches (such as on-site management, deed restrictions, etc.) will remain protective of public health and the environment for the life of the infrastructure project and that operations and maintenance
289) Develop project specific Hazardous Waste and Contaminated Media Management Plans to ensure the integrated, safe management of hazardous Wastes and substances encountered during project design and
293) Develop community benefit agreements when desired by the community.
294) Conduct targeted community assessments including monitoring as appropriate.
296) Preserve existing parks, open space, and natural areas.

Proposed Initiatives that Did Not Pass the Round One Screening (Organized by Category)

297) Coordinate with local city redevelopment departments to identify priority enhancement areas in adjacent communities.
298) Develop and implement community enhancement projects.
299) Emphasize landscaping and aesthetic improvements using local native plants.
309) When considering operational changes to extend hours (including during construction), evaluate noise and light impacts on adjacent communities.
310) Mitigate noise impacts in adjacent communities.
311) Mitigate light impacts in adjacent communities.
313) Include language translation where appropriate.
316) Partner with the California Community Colleges Economic and Workforce Preparation Division, the California State University System and other institutions of higher learning, K-12, and employers to respond to the demand for qualified workers and co
317) Provide goods movement job training within affected communities.
318) Develop industry driven and industry recognized certificate programs (and curriculum) in the areas of transportation, logistics support, warehousing and storage, supply chain management and safety and security.
319) Provide logistics (goods movement) training to incumbent workers to enhance productivity and create higher skilled higher wage jobs in this sector.
320) Placement of workers into logistics industry by creating awareness of job opportunities and preparing job seekers with employable traits as required by industry.
321) Provide goods movement job training within affected communities.
325) Create an educational continuum by articulating curriculum from K-12 through graduate school to provide incumbent workers, employers, and job seekers with continuous educational opportunities.

Proposed Initiatives that Did Not Pass the Round One Screening (Organized by Category)

326) Align CHP Foreign Export and Recovery (FEAR) efforts with Federal Homeland Security
327) Establish a multi-jurisdictional Port Security Task Force
328) Evaluate cross-sector vulnerability of ports (power, water, etc).
329) Evaluate all truck and rail routes out of port districts and air basins to determine long-term velocity, security, and environmental opportunities.
331) Evaluate the “Agile Port” concept for public safety/homeland security advantages.
332) Use the NAFTA model to understand the public safety and security issues.
333) Evaluate lane departure technology to identify driver fatigue and safety scoring of operators.
334) Continue support and implementation of safety improvement programs.
335) Increase enforcement of traffic and vehicle safety laws and regulations.
337) Urge US Coast Guard District Eleven Command to adopt the Automated Secure Vessel Tracking System (ASVTS) developed by the Maritime Information Services of North America (MISNA).
338) Evaluate new freight transportation technologies (maglev, SAFE shuttle, etc.) for Homeland Security and public safety applications.
339) Evaluate *Green Freight Corridor* road and rail infrastructure with integrated sensor network for Homeland Security and public safety applications.
340) Construct commercial vehicle enforcement facilities around the LA/LB and Oakland ports to enhance highway safety and security.
341) Establish a pilot test program using hazardous materials movement of containers and a short haul rail system that “flushes out” the containers in the ports and rail yards.
342) Develop a pilot project for creating a physical communication grid in the corridor.
343) Use intelligence and automated info to identify and target high-risk containers.
344) Pre-screen high-risk containers at point of departure.
345) Use new detection technology to quickly prescreen.
346) Develop joint inspection stations in the port districts and at the border crossing.
347) Develop community web portal to provide real or near real time information on goods movement and freight mobility conditions across road and rail network within the region.

Proposed Initiatives that Did Not Pass the Round One Screening (Organized by Category)

348) Clear U.S. Customs at inland destinations.
350) Use smarter, tamper-evident containers with RFID e-seals.
351) Develop a container loading and unloading program (similar to CTPAT) that addresses homeland security issues like peaking for local California businesses.
352) Develop a Green Freight Corridor (similar to Customs Green Lane) program and system.
353) Install sensors and environmental monitoring equipment along corridor to communicate between operators, vehicles, containers and the command center.
355) Provide data feeds from corridor system to County Emergency center, the Command and Control Center at Camp Pendleton, the CHP command centers, and NORTHCOM.

APPENDIX J

Comment Letters on June 2008 MAQIP Draft
(submitted by August 7, 2008)

Air Resources Board

Linda S. Adams
Secretary for
Environmental Protection

Mary D. Nichols, Chairman
1001 I Street • P.O. Box 2815
Sacramento, California 95812 • www.arb.ca.gov

Arnold Schwarzenegger
Governor

July 14, 2008

Mr. Omar Benjamin
Executive Director
Port of Oakland
530 Water Street
Oakland, California 94604-2064

Dear Mr. Benjamin:

The Air Resources Board (ARB) and the Maritime Port of Oakland (Port) have begun to work in partnership with each other and the Bay Area Air Quality Management District to quickly reduce air pollution from Port operations. To protect the residents of nearby West Oakland and surrounding communities, reducing the associated health risks must be a high priority for each of our agencies through State and local rules, enforceable agreements, and incentives. The Port can and must be a proactive leader in this effort by using its full authority via lease agreements, tariffs, cargo fees, and other means.

We support the Oakland Board of Port Commissioners' overarching goal for an 85 percent reduction in community health risks from exposure to diesel particulate matter (PM) emissions from the Port's maritime operations by 2020. The Maritime Air Quality Improvement Plan (MAQIP or Plan) in development is the ideal vehicle to both recognize the on-going activities to cut pollution and, most importantly, to set the path and schedule for critical new actions to further decrease the health risk. The unprecedented level of public involvement to date demonstrates the willingness of community residents and businesses to seek common ground based on the opportunity for a clean, growing port as a good neighbor.

We understand the Port's intention to recast the draft Plan as a "master plan" or vision statement, with details to be developed in the future through stakeholder working groups. However, we believe it is essential that this Plan deliver what the community and air agencies expect – a document that articulates the air quality goals, then clearly defines and quantifies a comprehensive emission reduction strategy that will be implemented to meet those goals. A credible plan must include firm commitments by the Port to pursue specific actions within its authority, on a set schedule, similar to the commitments made by air agencies in their own planning processes. A strong, clear Plan also provides certainty for the shipping industry to make its own long-range investment decisions.

The comprehensive strategy must depend on the combined efforts of the Port and the air regulatory agencies. ARB has adopted or is developing ambitious statewide regulations for port and other trucks, cargo equipment, harbor craft, and ship fuels that will compel the majority of the emission reductions from Port operations. We are counting on the Port's application of its landlord authority to help ensure its tenants and customers fully comply with State rules. Certainly, the Port can apply the benefits of ARB's strategies as the foundation for the Plan's emission reductions. However, we urge you to focus on what the Port will do to both aid implementation of those rules and go beyond State requirements to accelerate the localized risk reduction.

We appreciate the fact that some of the potential strategies or projects under the Port's authority may have a degree of uncertainty or controversy about how quickly they can be developed, adopted, and implemented. As an agency that regularly faces similar constraints, we encourage the Port to boldly meet this challenge by pursuing the most effective strategies to the limits of its authority, periodically assessing progress, and revising course as needed to reach the goals. We find it useful to include all potentially feasible strategies to reduce emissions, but to "tier" or categorize those strategies based on the level of certainty, timing, or other key factors.

ARB strongly urges the Port to evaluate, categorize, and include commitments to pursue each of the potential Port projects outlined in the draft Plan. In doing so, the Port should show the emission reductions that will be achieved and the progress made toward the goals. The Plan should also more fully define the most certain projects with specific timeframes and budgets. We understand the limited planning resources available and the concurrent demand on Port staff to help implement incentive programs for cleaner trucks this year. To minimize the resources needed to put these recommendations into practice, we believe the Port could effectively present clear commitments for action in an expanded Executive Summary to the Plan.

Thank you for the opportunity to comment on the draft Plan. If you or your staff would like to discuss these recommendations, please contact me at (916) 322-5350.

Sincerely,

/s/

Cynthia Marvin
Assistant Division Chief
Planning and Technical Support Division

cc: See next page.

cc: Mr. Brian Beveridge, Co-Chair
MAQIP Task Force
West Oakland Environmental
Indicators Project
1747 14th Street
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Mr. Jack Broadbent, Co-Chair
MAQIP Task Force
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Mr. Andy Garcia, Co-Chair
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Mr. Richard Sinkoff
Director of Environmental Programs
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Board of Supervisors

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July 14, 2008

MEMORANDUM TO: Ann Whittington
Port Environmental Supervisor
Port of Oakland

FROM: Nate Miley

RE: Draft Maritime Air Quality Improvement Plan (MAQIP) Comments

As an active advocate for strong, healthy communities and quality of life matters in Alameda County, I commend the Port of Oakland for taking significant and forward steps to address community ills while remaining a vital member of our economic base.

To that end, I submit to you these comments on the Maritime Air Quality Improvement Plan (MAQIP) *Draft* based on my work as Board member on the Bay Area Air Quality Management District and thru my staff's participation on the MAQIP Task Force.

While the entire document was a good first start, I would like to focus my comments on the following Sections:

Section 6: *Air Quality Improvement Goals*
The draft should not have broad goals and be unsure of what it can accomplish. Per the document, it is written in this section that "goals are ambitious, but achievable." For the stakeholders and the community, is not an effective approach to finding solutions. It is going backward. The Port should have defined goals that have projected and stated outcomes. Given that there will be uncertainties and wavering challenges, the Port should obligate itself to craft concrete goals, be responsible for oversight, identify a path that allows for the adoption of new criteria within a projected timeframe but highlight their designated timeframe all uncertainty is eliminated.

To accomplish this, the Port should create an Air Pollution Reduction Policy Subcommittee out of the MAQIP. The goal and objective are to monitor and track measures and goals for air quality and risk reduction strategies as outlined in the final Air Plan. Make recommendations to the MAQIP related to criteria, projections, policy implementation and/or changes/triggers that can negatively affect the Air Plan. In addition, they should oversee all timelines, report discrepancies and compliance issues, research and recommend new technologies and help set strategic next steps.

Section 7: *Emissions Reduction Strategies*
The Port should step away from a "hodgepodge" way of trying to reduce emissions and employ the guidance of the Interagency Task Force to help develop a strong infrastructure for capturing the necessary funding needed to support the implementation of reduction strategies. Local, state and federal elected official's staff should be more engaged so that policies, mandates and legislation are solid.

The environmental community should be afforded the opportunity to continue to provide oversight and monitoring in partnership with the Division of Environmental Programs on a level that is separate but equal to the Interagency Task Force.

Section 8: *Air Quality Improvement Initiatives*
The Continuum is an excellent approach as is the Screening Process Flow Chart. The last sentence on page 8-2 of section 8 says, "The air quality initiatives selected and prioritized through this process were intended to achieve emission reductions above and beyond those required by law.

While the list of Primary and Secondary Air Quality Initiatives is thorough and informative in its descriptions, the revised draft should define the port's role and reveal the criteria and monitoring it will use to go "above and beyond." Further, the port should define for the reader what its level of accountability will be as well as what the penalty will be for those who do not comply and state the incentive for those who do.

The Programs and Projects by Source Category are also informative and useful but needs to have outcomes stated as well.

Section 9.1: *Implementation*
The Port should define what its existing authority is and what enforcement mechanisms will be used to insist conformity as well as identify what penalties or incentives will be

used. Further, outline stronger strategies, roles and responsibilities, how the Port will handle implementation, accountability and oversight levels and timelines.

In closing, I concur with many of the Task Force member's comments that continue to address the Port's levels of accountability and how imperative it is to use the resources and people currently seated at the table. To me, this collaborative process continues to be a wonderful tool for moving forward in a comprehensive way and keeping the Port in the top tier of international business portals for commerce and trade.

Please feel free to contact me or my staff, Robyn Hodges at 510-272-3691 with any questions or concerns you may have at your convenience.

ALAMEDA COUNTY HEALTH CARE SERVICES AGENCY
PUBLIC HEALTH DEPARTMENT

David J. Kears, Director
Anthony Iton, Director & Health Officer

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July 14, 2008

Ms. Anne Whittington
Port of Oakland
530 Water St.
Oakland, CA 94607

RE: Comments on the draft Port of Oakland Maritime Air Quality Improvement Plan

Dear Ms. Whittington:

As Deputy Director of Planning, Policy, and Health Equity for the Alameda County Public Health Department, and as a member of the Maritime Air Quality Improvement Plan (MAQIP) Task Force, I commend your leadership in working with many stakeholders to put together a plan for reducing air pollution – and as a result improving health conditions – in the neighborhoods surrounding the Port of Oakland. However, the draft MAQIP leaves me concerned that this plan does not fully harnesses its pollution reduction potential, as it does not include clear measurable targets, a commitment to specific action steps, or appear to respond to previous concerns and recommendations articulated by MAQIP members and by CARB. In the interest of the health of those living and working around the Port of Oakland, I urge you to revise the current plan using the points laid out in this letter.

As a MAQIP Task Force member, in our meetings and in a letter sent to Mr. Richard Sinkoff and carbon copied to MAQIP Task Force members on February 4, 2008, I have highlighted the public health crisis confronting West Oakland: residents living in the shadow of the Port of Oakland can expect to die, on average, more than a decade before residents of the Oakland Hills and that, appallingly, this gap may be increasing. It is increasingly clear that one of the underlying causes of this disturbingly large health disparity is the extremely high rates of environmentally-linked disease in West Oakland. People living in West Oakland breathe in 3 times more diesel particles than other Bay Area residents. As a result of the exposure, West Oakland residents experience high rates of diseases such as cancer and asthma. As demonstrated in the West Oakland Health Risk Assessment, West Oakland residents experience 2.5 times greater lifetime risk of cancer than Bay Area residents in general and 80% of this excess cancer risk is attributed to diesel trucks. They have the highest rates of asthma hospitalization in the county – 2.3 times the average – and West Oakland children under five years of age have emergency department visits rates due to asthma nearly three times the county average.

The asthma rates among children are particularly alarming. Asthma is a chronic disease that can lead to irreversible changes in the architecture of the airways in the lungs. The irreversibility of these lung changes is one of the prime reasons that preventing asthma in children by reducing exposure to environmental triggers such as diesel is so critical to avoiding a life plagued by chronic disease. Additionally, asthma places a burden on the respiratory muscles and heart, therefore potentially

exacerbating heart disease, producing heart failure and ultimately increasing the likelihood of heart attacks, the number one killer of West Oakland residents.

The impact of the concentration of environmental hazards in West Oakland is particularly devastating to residents' health because of their social vulnerability. Due to high poverty levels and the prevalence of other psycho-social stressors, as well as a lack of access to healthcare, West Oakland residents are already at risk for poor health outcomes. Additionally, while the Port of Oakland is not the only source of air pollution in West Oakland, there is increasing recognition that multiple hazards interact and have a cumulative impact on residents. Port actions can either exacerbate or mediate these existing conditions. In order to confront these multiple assaults to West Oakland residents' health, we must maximize the health promoting potential of every decision impacting the community.

It is because of the extent and urgency of the health problems plaguing West Oakland that we urge you to consider our feedback on the draft MAQIP.

- By adopting as policy the goal of an 85% reduction from 2005 to 2020 in community health risk related to exposure to diesel particulate matter emissions from the Port's maritime operations, the Port of Oakland has acted a leader in the effort to improve health in West Oakland. However, the mounting evidence regarding the extreme health impacts of PM 2.5, such as CARB's recent study indicating that there is no scientific evidence that there is a safe level below which PM 2.5 has no health effect, necessitate a more aggressive timeframe and measures for achieving this goal. The draft MAQIP's interim goal for PM reduction (DPM Goal 1, listed on page 6-2) is 65% by 2012. In order to adequately protect health of the Port of Oakland's neighbors, we strongly urge you to a more aggressive timeline.

- In order to achieve the goal of an 85% reduction from 2005 to 2020 in community health risk related to exposure to diesel particulate matter emissions from the Port's maritime operations, the Port of Oakland needs an aggressive plan with clear action steps. The draft MAQIP relies heavily on CARB and other potential state and federal regulations to achieve its health risk reduction goal. However, the plan also states that a number of the regulations may not be implemented and that 100% compliance with regulations is improbable. To account for this discrepancy, the draft MAQIP should be adjusted as follows:
    - Analyze each current and future regulation not only for its current status, as you do in Table 5-2, but also indicate both your expectation regarding actual approval of the regulation and your ability to ensure compliance. Subsequently adjust your 2012 and 2020 emissions reductions forecasts to account for these realities.
    - Given these new forecasts, identify specific projects from the list of Air Quality Improvement Initiatives that the Port of Oakland will definitively commit to implementing. Demonstrate this commitment through a concrete timeline for these projects (not an estimated timeline, as currently included on page 9-12). Additionally, demonstrate that these additional projects will indeed achieve the health risk reduction goal by including a transparent analysis of the expected emissions reduction contribution of these projects. Translate the expected emission reduction impacts of these projects into long-term emission reduction goals for the project, as well as short-term interim goals.
    - Commitment to a realistic plan with a timeline, interim, and long-term health risk reduction goals is essential for monitoring of the final MAQIP's efficacy in reaching the 85% reduction by 2020 target. Furthermore, including these components in the final plan will increase transparency, a characteristic all government agencies should strive to embody, and facilitate community stakeholder partnership in not only identifying problems reaching the goals, but in identifying viable solutions.

- There is building consensus that a majority of the health risks confronting West Oakland residents can be attributed to trucking. However, there is dispute regarding whether the trucks are related to the Port of Oakland. It appears that CARB's West Oakland Health Risk Assessment and the draft MAQIP's emission inventory significantly underestimate the level of trucking activity attributable to the Port of Oakland, as well as trucking's total contribution to regional air pollution. To account of these underestimates, we recommend that the final MAQIP more explicitly discuss the impact of truck emissions, the uncertainties associated with the CARB study, and lay out a research plan, with details such as a timeline and objectives, for better understanding this issue and for identifying and committing to specific action steps. The Comprehensive Truck Management Program (CTMP) could be such a program, but the current uncertainty surrounding this program requires that in the final MAQIP do more than refer the issue to the CTMP for a resolution.

- The final MAQIP should identify a back-up plan, or at the very least a concrete plan for creating a back-up plan, that can be implemented in the event that the Port of Oakland is unable to meet the expected reduction targets.

- Regardless of the final specificity of the MAQIP, it could be rendered meaningless if it does not include an enforcement plan. The final MAQIP should clearly spell out how the Port of Oakland will address problems achieving the stated goals. The enforcement plan should include the following:
    - Lease-based approaches that will ensure compliance with all measures. This strategy will have the secondary benefit increasing the probability of early emission reduction.
    - A community engagement process for identifying and solving problems.

Before closing, there is one more important issue that merits your attention as you move forward. As discussed in the letter submitted to Mr. Sinkoff on February 4th, 2008 specifically regarding public participation, historical exclusion from decision-making venues has resulted in communities of color and low income communities that are disproportionately burdened by environmental hazards and the associated adverse health outcomes. Furthermore, the impacts of marginalization affect a community's sense of wellbeing and hopefulness for the future. We believe that decision makers can counter and begin to correct the ill health effects of systematic injustice by creating a truly empowering public process. The Port of Oakland has been responsive to community feedback, such as the extension for public comment on the draft MAQIP, granted due to the complexity of the analysis necessary for informed feedback. In addition to creating opportunities for public comment, we ask that as we move forward, you respond more explicitly to our comments. For instance, please indicate – through footnotes or utilizing another convenient tool – when and where content has been adjusted as a result of public comment. Additionally, we ask that you provide another opportunity for meaningful public participation before the MAQIP is finalized.

Thank you for your hard work on this plan and for your consideration of our comments. The extreme health threats facing the Port of Oakland's neighbors – neighbors already vulnerable to poor health outcomes and assaulted by many health hazards – are numerous and life threatening. As a result, we must all accept the weight of this public health crisis and use every measure available to ensure that our decisions reduce health risk to the fullest extent possible. We submit these comments, and strongly urge you to revise the draft MAQIP accordingly, to ensure that the final product demonstrates the Port of Oakland's strong commitment to reducing the health risks facing the surrounding community. Thank you again for the opportunity to comment and please contact us with any questions or concerns.

Sincerely,

Sandra Witt, MPH, PhD
Deputy Director of Planning, Policy and Health Equity
Alameda County Public Health Department

cc: MAQIP Task Force Members, including representatives of:
Mayor Ron Dellums
Assemblymember Sandre Swanson

Alameda Labor Council AFL-CIO

100 Hegenberger Rd. #150
Oakland, California 94621

Phone: (510) 632-4242
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info@alamedalabor.org
www.alamedalabor.org

July 15, 2008

Anne Whittington
Port of Oakland
530 Water St.
Oakland, CA 94607

Via Email

Re: Draft Maritime Air Quality Improvement Plan

Dear Ms. Whittington,

The Alameda Labor Council, AFL-CIO represents 125 local unions with 100,000 members in Alameda County. We support the Port's potential to develop a comprehensive and rigorous Maritime Air Quality Improvement Plan but believe the current draft misses the mark.

Our members both work and live in West Oakland and along the impact corridor. We pay the price of poor air quality and poor health as workers, as residents, and as taxpayers.

I participated in MAQIP planning sessions and raised concerns verbally throughout the process. We join allied organizations in the Coalition foe Clean and Safe Ports in urging the Port to set a stronger pace and reach higher for higher goals – with a means to meet them.

In its March 18 Policy Statement, the Commission set clear health risk reduction goals. MAQIP needs to extend this "can-do" attitude, not backpedal. The draft MAQIP lacks key components of an air quality improvement plan, as defined by planners. The Plan does fails to present clearly defined strategies for meeting the goal; a description of how strategies will be implemented, tracked, monitored and/or enforced; and a budget.

MAQIP should focus on what the Port can do, not what it can't. The Port of Los Angeles and even the Port of Long Beach have taken more aggressive steps to reduce emissions. Just as "public-private partnerships" represent outreach to beneficial external resources, regulatory agencies should be considered partners in pooling or leveraging authority to deliver real results.

MAQIP should start with a baseline of state regulations and build forward from there. The current draft neither affirms nor extends state requirements. We concur with the conclusion reached by analysts at the Pacific Institute:

> *Even though the projected emission reductions described in the plan, and the strategies for attaining plan goals rely heavily on the assumption that State regulations will be implemented and complied with in a timely fashion, the draft plan expresses a deep and contradictory pessimism about the "feasibility" of these regulations being implemented. In fact, Section 6.3, the detailed description of the many challenges faced by the Port's air quality improvement goals, goes so far in describing the challenges facing the timely implementation of CARB regulations as to have the effect of severely undermining the regulatory efforts of this State agency. "(N)ew emission reduction regulations adopted and proposed by CARB. . . are extremely aggressive. . . Technological, economic, or legal factors may result in suspension or postponement of certain requirements or deadlines," and "experience tells us that 100% compliance is rarely achieved." There is also no clear statement that the Port will cooperate with or coordinate in any way the implementation of state regulations.*

We understand and respect the many challenges currently faced by the Port of Oakland. Improving air quality is an issue with significant and long-term impacts, deserving of a stronger effort more consistent with the Port's commitment to excellence.

Thank you for your consideration and your work on this important process.

Sincerely,

Sharon Cornu
Executive Secretary-Treasurer

Cc: Hon. Ronald V. Dellums
Hon. Sandré Swanson, Loni Hancock, Mary Hayashi, Alberto Torrico

opeiu:29/afl-cio vjc

BAY AREA
AIR QUALITY
MANAGEMENT
DISTRICT
SINCE 1955

August 7, 2008

Mr. Omar Benjamin
Executive Director
Port of Oakland
530 Water Street
Oakland, CA 94607

RE: Draft Maritime Air Quality Improvement Plan

Dear Mr. Benjamin:

Thank you for the opportunity to provide comments on the draft Maritime Air Quality Improvement Plan (MAQIP). The Bay Area Air Quality Management District staff compliments Port staff and the consulting teams from Concur, Inc. and Environ International Corporation for the hard work put into the draft document and the transparent and productive process with the MAQIP Task Force. The broad participation in the Task Force by representatives of the local community and companies doing business at the Port lays a very strong foundation for implementing projects and polices for emission reductions. In addition to Air District staff's comments below on the overall content and direction of the draft MAQIP, a number of technical corrections to the draft document are listed in Attachment A.

Air District staff supports the health based goal adopted by the Port Commission to reduce by 85% the contribution from the Port and its tenants to the health risks from air toxics experienced by residents of and workers in West Oakland. However, the draft MAQIP does not provide clear and sufficient commitments to meet the goal, nor does it convey a sense of urgency to do so expeditiously. The draft MAQIP does not meet Air District staff's expectations – as made clear at the MAQIP Task Force and Co-Chair meetings -- of clearly explaining which actions will be taken when by whom and how each of the actions will contribute towards the Port Commission's goal. Air District staff is disappointed that the draft MAQIP does not demonstrate the leadership that the Port can and should provide to ensure the clean up of diesel particulate matter emissions from port-related activities.

Air District staff urges that the following changes be made to the MAQIP prior to its consideration by the Port Commission:

- A timeline that describes each specific measure that will be implemented by the Port and/or its tenants, and an estimate of that measure's contribution to the Commission's health goal. Air District staff recommends that the most detail be given to the priorities for the period of 2009-2013.

- A clear explanation of how the Port will monitor and report on its tenants' and customers' compliance with the Goods Movement regulatory program adopted by the California Air Resources Board (CARB). In the draft MAQIP, Port staff indicates that the lease agreements with the terminal operators require compliance with all applicable laws. The draft MAQIP should explain the steps the Port will take to determine compliance with its leases and its actions if lease terms are not met.

- A set of contingency measures that the Port will implement to achieve the emission reductions if any federal, state or local regulations are less effective than forecast, or if voluntary measures identified in the MAQIP do not achieve positive results.

- A timeline for developing and accessing user fees to cover some or all of the costs to implement the MAQIP strategies. Air District staff recommends that the Port Commission adopt the user fees in advance of or at the same time as it adopts the MAQIP. Air District staff also recommends that the Port include the following concepts in developing any user fee: 1) that collected revenues are prioritized towards emission reductions first, infrastructure second; and 2) the fee(s) be on a sliding scale that rewards Port customers that undertake voluntary action to reduce emissions.

- In establishing the Stakeholder Advisory Committee to assist the Port in implementing the MAQIP, Air District staff recommends that the role of elected officials and other community representatives from communities outside of West Oakland -- communities such as Richmond, San Leandro and Livermore that are located along key freight corridors -- be clearly explained. Inclusion of these communities will help the Port achieve the goals presented in Chapter 6 of the draft document.

In preparing the final MAQIP document, the Port should also take into account the future direction of the Air District's Green Ports Initiative, which will include aspects of (1) ensuring compliance with CARB regulations; and (2) providing funding for activities that achieve earlier or greater emission reductions than required by the regulations. Throughout the draft MAQIP document, the Port suggests that full compliance with CARB regulations will not occur because the Port "has neither the authority nor the resources to monitor its tenants," because "regulations are ... costly to implement," because "achieving full compliance with each regulation will likely be difficult," and because "experience tells us that 100% compliance is rarely achieved." Yet the document also states that compliance is "essential to meeting the MAQIP emissions and health risk reduction goals." Inventory projections by the Port's consultants show that compliance with CARB regulations would achieve an 81% reduction in emissions and health risk, which is most of the 85% reduction to be achieved through the MAQIP.

Under state law, the Air District has independent authority to enforce the CARB regulations and will work with CARB to ensure full compliance. The Port should expect stringent enforcement

and should incorporate that expectation into the final MAQIP document and into its activities. In particular, Air District staff believes that agreements between the Air District and the Port describing concrete steps to be taken by the parties regarding compliance with each CARB regulation are critical to ensuring that the Port will avoid disruptions in the flow of goods that could otherwise come from enforcement of the CARB regulations. Air District staff believes the final MAQIP document should include commitments to develop these agreements and other mechanisms to ensure that the Port and its tenants are in a position to comply when regulatory requirements take effect.

Once the MAQIP contains a clearer picture of the Port's and its tenants' priorities, the Air District is prepared to assist the Port through its regional role as a funding agency and expertise in enforcement of air quality regulations. A very positive first step in this direction is the Port's and the Air District's collaboration on the clean truck program; a program with a clear goal and timeline that deserves to be extended to other pollution sources at the Port. The Air District would like to pursue a continuation of the truck program, implementation of shore power, and expansion of the usage of low sulfur marine fuels in the container ships calling at the Port.

In closing, I would like to reconfirm the Air District's commitment to assisting the Port of Oakland in reducing the impacts of its operations on the residents of West Oakland in the near term and the greater Bay Area over the longer term. Air District staff looks forward to continuing our partnership towards these mutual goals. In the meantime, please do not hesitate in contacting me at 415/749-5052 to further discuss the Air District staff's comments on the draft MAQIP.

Sincerely,

Jack P. Broadbent
Executive Officer/APCO

cc: Members, BAAQMD Ad-hoc Committee on Port Emissions
Brian Beveridge, Co-Chair, MAQIP Task Force
Andy Garcia, Co-Chair, MAQIP Task Force
Cynthia Marvin, California Air Resources Board
Deborah Gordon, United States Environmental Protection Agency, Region 9
Ann Whittington, Port of Oakland

ATTACHMENT A
BAAQMD Technical Corrections

1. The emissions inventory presented in Table 4-1 differs from that presented in the *CARB Diesel Particulate Matter Health Risk Assessment for the West Oakland Community: Preliminary Summary of Results* in two ways. Firstly, PM includes more than diesel PM; it also includes PM from boilers. This difference was well explained in the MAQIP. Secondly, diesel PM emissions from Port trucks on the freeways was included in the CARB summary but not in the Port's emissions inventory. Specifically, Table 4-1 shows 17 tons of PM from trucks in 2005, while ARB Table 2 shows 20 tons for the same year.

   Since the health risk assessment showed that trucks are an important source of risk, this point deserves explanation and discussion in the MAQIP. The MAQIP should explain that there was an estimated 3 tons per year from Port trucks on freeways, but that good information for deriving this estimate was lacking, that more needs to be done to survey trucks in the area and to conduct origin/destination surveys to better estimate the Port's contribution to risk from on-road trucks in the West Oakland community.

2. The Air District found the data collected through the Port's global positioning system pilot program to be valuable for improving characterizations of Port truck activity. We also believe that a broader implementation of the program will be highly useful for future inventory needs, for monitoring compliance with truck routes, and for reducing emissions by reducing queuing times and improving throughput efficiencies at the terminals. Discussion of this important program and its benefits should be included in Section 7: Emission Reduction Strategies.

3. On p. 3-2, 1st paragraph: the sentence "Exposures to DPM are highest at locations closest to sources of DPM emissions" is poorly worded. Exposure is dependent on both proximity to a source and the magnitude of the source. One can be close to a small source and have a lower exposure to it than to a greater source further away. We recommend this paragraph more clearly explain the difference between proximity and magnitude.

4. On p. 3-3, 5th paragraph: Since PM10 includes PM2.5; it is not true that diesel particulate matter contributes to PM10 to a lesser extent than to PM2.5. This discussion needs rewording to more clearly indicate that most diesel PM is made up of particles 2.5 microns or less in size.

5. Table 3-1: The "Ocean Going Vessel (Ships)" header is repeated twice.

6. Page 3-9: In the discussion under "Shipping," the text is missing the amount of emissions reduced from the use of low-sulfur fuel by the Maersk Shipping Line.

7. Page 3-9: Tugboat engine replacement should read "0.9" for clarity sake.

8. Figure 5-1 and descriptive paragraph directly underneath: the time scales do not match; the Table states "2020" while the text says "2027."

>>> "Lautze, Steve" <SLautze@oaklandnet.com> 7/15/2008 4:06 PM >>>
To all: with apologies to Richard S., Richard G., Anne W., and Miguel for the duplicate msg., I thought I'd copy the rest of the interagency group with my comments on the Draft MAQIP (below). See you tomorrow.

Steve Lautze
City of Oakland
238-4973

_____

From: Lautze, Steve
Sent: Monday, July 14, 2008 5:36 PM
To: 'Richard Sinkoff'; 'Anne Whittington (awhittin@portoakland.com)'
Cc: Bustos, Miguel; 'Brian Beveridge (bbeveridge@paradigmthree.com)'; 'Swati Prakash'; 'Margaret Gordon'; 'Richard Grow (grow.richard@epa.gov)'; 'Diane Bailey'; 'bill@abtruck.com'; 'jfine@edf.org'
Subject: MAQIP comments

Happy Bastille Day Richard and Anne:

As the alternate for the City of Oakland on the MAQIP and current City representative to both the Comprehensive Truck Management Plan (CTMP) Technical Advisory Committee and the West Oakland Toxics Reduction Collaborative (WOTRC), I am writing with a few substantive - if not quite comprehensive - comments on the DRAFT MAQIP that is dated June, 2008.

The truth is that I have not been able to make the time to extensively review and analyze the document in the 30 calendar days allotted for that purpose, partly due to a long planned vacation in late June and the crush of other work projects. Having said that, I have read over some of the comments submitted by others with whom I have worked in the context of MAQIP, CTMP, and WOTRC (including MAQIP Co-chair Brian Beveridge, Swati Prakash, Diane Bailey, and Dr. Jamie Fine), and write to echo some of their salient and well-considered comments.

First of all, I must compliment you, Delphine Prevost, and other Port and CONCUR staff for convening a broad set of stakeholders and assembling a report that represents a mammoth work effort and a major step forward toward cleaner air in West Oakland and the region at large. The report is very well organized and comprehensible, if not quite comprehensive. The draft is a solid foundation to build on.

Having said that, it also seems clear that the plan needs more work, and because of that, that the official 30 day window for input is too limited. Given the concerns that many have registered about the "underachieving" (as opposed to "will do") tone of the document, and the future need for the broadest group of stakeholders to advocate funding and other resources to implement the MAQIP, allowing some more time to "get it right" seems prudent.

The Port would seem to be somewhat vulnerable on this point, given that the

draft was initially promised verbally and in writing as being available "2 weeks ahead" of the "final" full MAQIP meeting, but then was delivered only 3 working days before that meeting. This seriously limited the productivity of that June 19 meeting, since the impressive array of stakeholders had for the most part not had a chance to review the document, meaning that there was effectively no real "discussion" of the draft between the key players on that day.

I hope that you and the management team at the Port of Oakland will consider a modest extension to the comment period and also convene at least one more meeting of the full group, ideally with a short list of goals for changing the document that will gain the broadest possible support. This will not only build trust among the diverse set of interests involved, but will also serve the Port well politically in its future efforts to obtain funding and other resources -- whether from ARB or the Port's own customers -- to implement the MAQIP.

Please keep me updated on developments with MAQIP, both on the plan and its implementation. I remain committed to doing all that I can to foster cooperation and results on this huge effort, as well as in the context of my ongoing work with the CTMP TAC and WOTRC.

Sincerely,

Steve Lautze
City of Oakland
Economic Development Division
510-238-4973

ENVIRONMENTAL DEFENSE FUND
finding the ways that work

July 14, 2008

Anne Whittington
Port of Oakland
awhittington@portoakland.com

Re: Comments on draft dated MAQIP

Dear Anne,

Thank you for convening meetings of a community Task Force (TF) to inform the development of the Port of Oakland Maritime Air Quality Plan (MAQIP). Having participated in every TF meeting, initially as a faculty member in the Department of Science at the University of San Francisco, and currently as an Economist in Environmental Defense Fund's California Climate Initiative, I submit these comments on the draft MAQIP to acknowledge successes and to highlight major needed improvements. My comments are based on my technical training in atmospheric science and planning, and on my perspective as a resident in East Oakland and technical advisor to the West Oakland community. I identify several critical issues to be addressed prior to the finalization of the MAQIP with the intent of moving forward constructively toward healthy air for all residents and workers in Oakland. Three points merit highlight:

- The MAQIP TF and plan writing processes represent an important commitment by the Port of Oakland to acknowledge its air quality environmental impacts, to establish health-based air quality goals for the proximate residential community, and to plan to meet those goals. It has also strengthened a network of Port staff, tenants, goods movement operators and community social justice advocates that will need to work together to achieve air quality goals.
- The draft MAQIP is not a "master plan" because it does not address two significant criteria air pollutants, reactive organic gases and nitrogen oxides, nor does it address greenhouse gas emissions, notably carbon dioxide.
- The draft MAQIP several essential components of an air quality plan, notably the identification of specific emissions control measures, quantification of associated emissions reductions, and a time-deliminated forecast of progress toward emissions reductions goals. Though not altogether absent, the Monitoring and Reporting chapter is insufficient since it relies entirely on voluntary actions and thus lacks substantive plans for enforcement.

The draft MAQIP Goals are Significant and Important

While the draft MAQIP does not currently do justice to the potential created by TF process, there are several notable accomplishments including the establishment of measurable health-based goals. Of equal importance is the clear demonstration of agreement and commitment by the Port, and through the TF process, goods movement operators, tenants and labor to achieve planning goals.

The Task Force did not achieve Consensus

Concur, Inc. did an admirable job of facilitating TF meetings. Though Concur did facilitate consensus amongst co-chairs in setting the agenda, it did not mediate the public TF meetings toward consensus outcomes. Co-chairing should not be taken as implicit consensus. The Task Force was never organized or mediated to arrive at consensus. As such, any reference to "agreement" by the Task Force should be removed from the plan. Any "majority" opinion expressed in the plan should be accompanied by a discussion of the minority opinion(s).

The draft MAQIP is not a "Master" Air Quality Plan

The Planning Continuum concept offered in Figure 1-1 (pg 1-2), is a useful construct (though my copy is very hard to read). The Master Plan concept is a new framing since 2008, but was not a highlighted in the originating materials. The Master Plan concept does not generally apply to air quality, rather to land use, so it is not clear why this reframing is used.

The reframing the MAQIP as a Master Plan creates an evaluative challenge since there are no examples of air quality master plans. Examples offered in Fig 1-1 are insufficient and unsatisfying. The Program Level examples should provide for comparison with adopted Master Air Quality Plans so we might compare them as part of our review of the MAQIP. The Project Level examples are vacant, since the CTMP program is not yet developed, and the V2K truck retrofits program resulted mostly in tugboat and rail projects without critical community feedback. The public process of V2K project was a poor example of what should occur at the Project Level. Therefore the "promise" of environmental review and public process in the Program and Project levels remains an empty commitment and is not persuasive.

The draft document is missing major, significant components needed to give readers confidence that the goals of the plan will be met or that the plan is in fact a Master Plan. The overall goals are well-articulated and clear; more attention should be given toward methods of monitoring progress toward goals, identifying specific enforceable reductions strategies, and demonstrating how those strategies will result in goals attainment.

The lack of commitment to specific implementable and enforceable actions is particularly disappointing since Concur identified this essential outcome at the initiation meeting of the MAQIP. [1] The draft MAQIP does not accomplish this fundamental step despite continued and continual expression of this need by myriad participants in the MAQIP TF. For example, a letter dated January 28, 2008 signed by several community health representatives calls for several plan Key Components (in bold italics) that remain missing from the draft MAQIP:

1. Concrete health risk reduction goal and ***interim*** goals
2. ***Specific, clearly-defined measures*** for reaching the health-based goal
3. Plans to implement these measures, including ***enforcement mechanisms***
4. Timetable and ***monitoring plans*** for measuring progress on implementation of measures and on reaching ***interim*** and final goals
5. Funding plan that provides a ***blueprint for financing measures*** in the plan.

[1] See Stakeholder Assessment Memorandum, Appendix A, April 6, 2007, Page 2, written by Concur. See also Concur presentation at MAQIP kickoff meeting on April 10, 2007, Slide 9 titled Findings: Stakeholder Interests – Plan Content: "establish specific actions targeted to each source of Port Maritime emissions".

The draft MAQIP contains parts of items 1 and 5, but they are incomplete. The draft MAQIP does not contain any specific, enforceable measures, nor timetables for interim progress, so items 2, 3 and 4 are missing from the draft MAQIP.

In addition to the major structural omissions in the draft MAQIP, control strategies are needed for nitrogen oxides, reactive organic gases and greenhouse gases. Attention is rightly focused on diesel PM emissions, but NOx is a dangerous pollutant and is forecasted to increase, not decline. Therefore, the plan needs to devote attention to addressing NOx emissions. Completely absent from the plan are ROG and CO, which comprise significant health risk in West Oakland and were on the list of pollutants to be addressed in Port Planning Documents (pg. 5) distributed at the June 2007 MAQIP TF. The absence of these two pollutants, and a GHG inventory and management strategy, are additional reasons why this is an incomplete Master Plan.

Detailed Comments

In addition to the above overarching concerns, several details merit mention.

- **Reorder Guiding Principles:** The primary motivation for this planning effort is air quality and community health, not economic growth. Therefore, the Guiding Principles (Appendix B) should be reordered to place environmental quality and public health principles at the top of the list, and economic principles toward the end of the list.
- **More Background on local air quality conditions**: The Local Perspective (Section 3.2.2) does not acknowledge the Filbert Street monitoring station that has been measuring PM2.5 and air toxics since 2001.[2] This site has measured unhealthy levels of PM2.5 and the draft MAQIP should provide a detailed summary of these measurements, as well as discussion of expected changes in observations obtained from the Filbert Street monitoring station after implementation of the MAQIP. In addition, this section should contain a summary of the findings of the CARB Health Risk Assessment. Also missing from this section, or the chapter more broadly, is reference to and discussion of the considerable body of research by the Environmental Indicators Project and the Pacific Institute. Pacific Institute research, such as Deluged by Diesel and Clearing the Air, merit acknowledgement, and the recommendations of these studies should be addressed directly in the draft MAQIP. As well, Neighborhood Knowledge for Change by the West Oakland Environmental Indicators Project provides a baseline for thinking about community health and for measuring progress to health-based goals.

  The second half of paragraph two on Page 3-5 starting with "A very rough estimate of the Port's contribution…" is an unfair comparison, is not-relevant to health-risk and exposure in Oakland, is unnecessary and thus should be deleted.
- **Need details about drayage truck emissions in the West Oakland community**: The draft plan gives no legitimate treatment of Port-related truck emissions within the West Oakland neighborhood. This issue needs to be addressed directly and clearly, including a

[2] See BAAQMD at http://www.baaqmd.gov/tec/maps/dam_sites.htm#. Details about the Filbert Street monitoring station include:

BAAQMD Air Monitoring Site
Site Name: Oakland-Filbert St.

Operator: BAAQMD
Start Date: 9/14/2001
End Date: current
Sensors: PM2.5,Toxics

Longitude: 122.2805
Latitude: 37.8172
UTM - East: 563.328
UTM - North: 4185.771
County: Alameda

discussion of uncertainties associated with the CARB Health Risk Assessment and research/analysis plans for understanding better this dangerous source of emissions exposure in West Oakland. More than just emissions, the plan should acknowledge the socioeconomic and labor challenges associated with this source of emissions. Addressing truck emissions in West Oakland is the most important element of the MAQIP; the quality and utility of the MAQIP will be determined largely by the extent to which it tackles this major source of health risk. It is not acceptable to "pass off" this issue to the anticipated Comprehensive Truck Management Plan since it is nonexistent.

- **Better treatment of emissions estimate uncertainties:** The plan correctly notes, in a few poorly organized statements, the uncertainty associated with estimating emissions, planning reductions, and associating these actions with health-based goals. Given this well-understood uncertainty, the plan should utilize a risk management decision framework. Doing so will engender confidence in the overall plan, and will provide sound metrics for evaluating emissions and progress toward goals.

  It is acceptable that the plan focuses on a middle-growth scenario, but it should include specific measures to be utilized in the event of high growth, as well as a clear set of measures to be used to determine growth rate (and associated differences between forecasted and actual emissions/growth). Put differently, readers need reason to believe that achieving the high growth scenario will not be at the expense of the MAQIP health-based goals. The tables and figures in Chapter 5 should include High Growth scenarios. Figure 5-2 is incomplete since not all of the categories in the legend are show in the graph. Table 5-3 should have an additional column that compares the 2020 forecasts to the 85% health-risk reduction goal.
- **Use the findings of the CARB HRA:** Also missing from Chapter 5 is a discussion of the completed CARB HRA findings. They ought to be used to establish more rigorous links between emissions and exposure, and to quantify health-risk reductions goals in terms of exposure from specific sources on and near the Port property.
- **Lack of reductions goals quantification:** Chapter 7 – Emissions Reduction Strategies – should be the heart of the MAQIP, but is incomplete at only 3 brief pages in length. This is the section that should quantify reductions to be achieved from specific strategies as needed to achieve MAQIP goals.
- **Connect Initiatives with Reductions Goals and Strategies:** Chapter 8, Section 8.3, Selected Initiatives, though a very promising list, is not being utilized constructively in the MAQIP. Rather, it is being used along with "feasibility" criteria and other "constraints" to define what cannot be done (and why not) rather than to identify precisely what will be done. Most importantly, the list needs to be connected to the timeline for enforceable actions, and reductions from the measures need to be calculated to determine if they – in aggregate – will be sufficient to meet MAQIP goals.

Sincerely,

James Fine, Ph.D.
Economist, Environmental Defense Fund
jfine@environmentaldefense.org; (916) 492 - 4698

West Oakland Environmental Indicators Project
providing environmental information for positive neighborhood change

TO: Anne Whitington July 14, 2008
Port of Oakland
530 Water St.
Oakland, Ca. 94607

FROM: Brian Beveridge,
Co-Convener – Mayor's Port Task Force
Co-Director - West Oakland Environmental Indicators Project (WOEIP)
Community Co-Chair – Port of Oakland Maritime Air Quality Improvement Plan
Co-Lead – West Oakland Toxics Reduction Collaborative (WOTRC)
Community Representative, West Oakland Community Advisory Group for Redevelopment of Oakland Army Base (WOCAG)

RE: COMMENTS ON THE PORT OF OAKLAND MARITIME AIR QUALITY IMPROVEMENT PLAN (MAQIP)

It is now a commonly understood fact that the Port of Oakland's Maritime Air Quality Improvement Plan (MAQIP) is not an air quality mitigation plan in the formal sense as defined by regulators and academia, but a broad vision statement now called, the "Master Plan". In essence, it is a framework for planning and not a plan in itself. While the MAQIP process has been an admirable exercise in public engagement, and we at WOEIP are proud to have brought the collaborative model of our Toxics Reduction Collaborative (WOTRC) to the process, it became apparent early on that Port management and staff had no intention of creating a plan for action. Much was offered, by regulators and non-profit science groups, in the way of assistance in creating a meaningful plan. Many methods were put forth to move the document toward a productive approach to real health risk reductions, but all were ultimately rejected in favor of a vision statement painted in the broadest of strokes.

We recognize that the Port of Oakland lacks the capacity to produce and implement a detailed emissions reduction plan. Therefore, Port management must enlist the assistance offered by Federal, State and regional agencies in writing a meaningful plan that will achieve predictable air emissions reductions. The Port must cease its systematic delaying tactics in which it has deflected specifics, protected it business partners and defended its right to do nothing.

PROBLEMS WITH THE "PLAN"

- **No stated intention**. The Master Plan states an admirable goal of 85% reduction in health risk for the residents of West Oakland, but nowhere does it say what the

Port will do to achieve that goal. The Port of Oakland must clearly state its intention to achieve specific air quality improvement targets.

- **The "plan" lacks important components**. The Port's own consultants, Environ, are professionals at writing air quality remediation plans, but even their contributions, rewritten by Port staff, show little in the way of concrete details.

- **No stated role for the Port**. The Master Plan contains many lists of possible actions, lists of possible authority, lists of funding programs and lists of constraints on both actions and authority, however, nowhere does it state a specific action the Port of Oakland will take or authority that the Port intends to exercise to achieve measurable air quality improvements.

  The Port could define its role as a solutions incubator, a funding conduit, a project evaluator, or it could systematically track project success in a transparent public process; but it has defined no such specific role for itself. The Master Plan shows the Port, in essence, as *an interested non-participant hoping for the best*.

- **Overt abdication of authority to its business partners**. The Plan is fundamentally "self-neutering" when in Section 1.2.2 it states: "The Port has neither the authority nor the resources to monitor its tenants and business partners or enforce compliance… called for by current or anticipated regulations."

  This patently false because the Port's own attorney has stated publicly that the Port has the authority, and presumably the resources, to place whatever terms it wishes in its lease agreements with its tenants. The Port can also use concession agreements to set terms of operation and compliance for its contracted vendors. Port-wide tariffs are commonly used to establish even-handed requirements for all tenants and customers.

  The MAQIP representative for the Pacific Maritime Shipping Association stated publicly at a task force meeting that lease terms were a practical approach to setting standards at the ports. Still, the Port of Oakland has not committed to such action in the language of the MAQIP.

- **Inadequate commitment to staffing**. Port management has consistently under-staffed the environmental mitigation and planning departments. More than half-way through the MAQIP process the lead staff person on the Plan was transferred and another staffer, unfamiliar with the Task Forces deliberations, was assigned the task of drafting the final document. This added many weeks to the drafting process.

  Port management has stated that program level work, as appears in the Comprehensive Truck Management Program, is where the real details for community risk reduction will be determined and yet only one planner is assigned

to that process. The Port of Los Angeles by comparison has 20 staff people assigned to its Air Plan development and implementation.

- **Using economics as a constraint on risk reduction and environmental justice**. State guidelines in the Goods Movement Action Plan declare that economic constraints shall not be considered when implementing air quality improvement programs. In spite of this, the Port of Oakland has consistently listed market competitiveness as its number one concern in air quality planning. This sends the clear message that public health and air quality improvements are secondary concerns of this port.

- **"All volunteer" air quality improvement**. The core of the Port's Air Plan is the request that its business partners voluntarily "do the right thing" and the expectation that all concerned will "follow the law." The regulators on the MAQIP Task Force have said both publicly and privately that voluntary measures are not dependable and generally fall short of gains achieved through regulatory pressure. We, the tax-payers of California, have committed billions of dollars to help the goods movement industry clean-up and grow, simultaneously, the Port of Oakland must commit to helping prove we are all getting our money's worth.

- **Port as public trustee**. The Port of Oakland has a legal obligation to use tideland areas for the public good. It follows that the Port must not use those assets to the detriment of the public. The public health risk from port operations has been clearly defined by regulators and academia alike. The US Environmental Protection Agency declared petroleum particulate matter to be a carcinogen and the California Air Resources Board Health Risk Assessment of West Oakland found extremely elevated risk of cancer to residents of our fence-line community. The Alameda Department of Public Health has declared that West Oakland residents face a lifespan that is ten years shorter than that of residents in the near-by Oakland hills neighborhoods. In light of this clearly defined public health crisis, the Port Commission, through the Executive Director, has both the authority and the responsibility to act to assure port-related health risks in the community are reduced as soon as technologically possible.

- **Public asset at put at risk by inaction.** Due to the fact that the Port has accepted Federal funds for expansion projects like the channel deepening, failure to act on emissions reductions may open the agency to a Federal Title VI complaint. Failure to act in the face of this knowledge may violate the Tidelands Trust Doctrine and put control of the Oakland shoreline at risk of State seizure.

NEED FOR ACTION

If financial support for the Port is needed during these difficult economic times, then the Port Commission and Mayor of Oakland must bring their combined power to bear on this critical issue. But first, the MAQIP must be rewritten to clearly declare the City and Port's intention to stop polluting the flatland neighborhoods of Oakland. Both public health and legal liability hang in the balance. The Port of Oakland is an agency of the

City of Oakland, expressed in the Oakland City Charter, and must end its isolationist policy, which attempts to hold the public at bay while defending the interests of business.

The City Council, as Oakland policy makers, also has a vital role to play and possibly a position of legal liability, if its Port does not adequately address the life and death impacts of the freight industry on the people of Oakland.

Sincerely,

BRIAN BEVERIDGE, Co-director
West Oakland Environmental Indicators Project

Athena Applon, resident – West Oakland
Adim. Ass't, WOEIP

WOEIP Coordinating Team
Tim Thomas
Dorothy Paine
James Fine
Swati Prakash

Frank Gallo, resident
San Leandro, CA.

Ray Kidd, resident – West Oakland
West Oakland Neighbors

HEALTHY SAN LEANDRO ENVIRONMENTAL COLLABORATIVE

Davis Street Family Resource Center
3081 Teagarden Street
San Leandro, CA 94577
(510) 347-4620

Anne Whittington, Port of Oakland

Via email: awhittington@portoakland.com

July 10, 2008

Dear Ms. Whittington,

The Healthy 880 communities-Healthy San Leandro, is submitting the following comments on the draft Maritime Air Quality Improvement Plan released on June 13, 2008. Our organization is working with communities living along the 880 Freeway covering, East Oakland, San Leandro, s San Lorenzo and Hayward cities. We are interested in seeing the Port develop a comprehensive and rigorous Maritime Air Quality Improvement Plan because the considerable efforts over the years by Statewide environmentalists, public health, and community organizations, in addition to recent efforts by the California Air Resources Board (CARB), South Coast Air Quality Management District (SCAQMD), and the Ports of Los Angeles and Long Beach, have all demonstrated the necessity and timeliness of the port air quality improvement plan.

In April 2006 I participated in the Governor's Goods Movement Action Plan, CARB estimated that pollution from California ports and goods movement activities causes 2,400 premature deaths and over 1 million school absences every year, costing the state approximately $200 billion by 2020.1 With growing evidence of greater health impacts from air pollution, CARB recently updated those estimates, noting that diesel-powered freight transport in California each year causes over 3,700 premature deaths and many thousands of hospital admissions, missed workdays and missed days of school.2 It is very clear that a strong air quality plan is needed to protect public health and the environment along the 880 corridor as we are South of Port of Oakland Maritime activity. We have mapped and counted this activity

1 CARB Goods Movement Emission Reduction Plan at 2, April 2006. (hereinafter "CARB ERP").
2 www.arb.ca.gov/Research/Health/pm-mort/pm-mortdraft.pdf

twice in 2007-2008. The diesel-powered freight transport business has increased in San Leandro and other cities

along the 880 corridor. The mapping and counting was done in October 2007, and February 2008 the increase was approximately 43 percent difference. We are gravely disappointed with the lack of specificity and commitment in the MAQIP. Plan fails to make any new commitments to reduce air pollution, and no commitment to the communities that continue to be impacted and compromised with their lives.

BROAD OBSERVATIONS:

1) While it was encouraging to see the passage by the Port's Board of Commissioners on March 18th a Policy Statement that sets clear, health risk reduction goals, this is seriously undermined by the equivocating language and pessimistic tone found throughout the draft MAQIP. There is a conspicuous absence of even a single affirmation of commitment or intent on the part of the Port to take action to reduce emissions. This raises serious questions about the value and purpose of this document as an actual master plan or even as a policy statement. The draft clearly states that the emission reduction goals set forth are only "potentially achievable," and has the net effect of lowering expectations to such depths as to make emission reductions from the Port appear to be an insurmountable task. This overemphasis on challenges and constraints rather than possibilities and leadership strengthens the observation that this is not an air quality plan. [1]

2) The draft MAQIP is not an air quality improvement plan, as usually defined by air quality planners. The only element of a plan that this document includes is a clear, quantitative goal, However, the rest of what typically constitutes and air quality plan is missing: a commitment to meeting the goal, clearly defined strategies for meeting the goals, a description of how strategies will be implemented, tracked, monitored and / or enforced, and a budget.

3) We are disappointed that the Port has changed the parameters of the MAQIP mid-course and engaged in a unilateral drafting process. The section in the introduction presenting the Port's planning continuum, and defining the plan as a "master plan" with less detail, more vision, and more stakeholder participation, is very useful and certainly puts this end product in perspective. However, we can't help but wonder why now, at the end of 15 months of planning and MAQIP task force meetings, this is the first time the task force is seeing this planning continuum. While we are aware of the changing nature of planning processes, we are disappointed that the Port has taken so much time of so many task force members during the planning process, only to change the parameters of the end product mid-course, and have gone into a unilateral drafting process to produce a document that can hardly be recognized as an air quality improvement plan.

4) It is disturbing and inappropriate that the primary message of the MAQIP document is that the Port has far too little authority, and far too many constraints to realistically require or leverage significant reductions in emissions from its customers and tenants. This message is contrary to the description of the Port's legal authority presented by the Port's own lawyer in public meetings, and contrary to the actions taken by the Ports of Los Angeles and Long Beach to reduce their emissions. We are concerned that the Port has chosen not to pool or leverage the authority of and cooperating with those agencies that do have the authority to require and enforce emission reductions.

5) The draft MAQIP undermines the efforts of State regulatory agencies in several instances, while at the same time relying on the full implementation and compliance with State regulations to meet its stated goals. The plan has a confusing and contradictory relationship to the implementation of State regulations for reduction emissions. Even though the projected emission reductions described in the plan, and the strategies for attaining plan goals rely heavily on the assumption that State regulations will be implemented and complied with in a timely fashion, the draft plan expresses a deep and contradictory pessimism about the "feasibility" of these regulations being implemented. In fact, section 6.3, the detailed description of the many challenges faced by the Port's air quality improvement goals, goes so far in describing the challenges facing the timely implementation of CARB regulations as to have the effect of severely undermining the regulatory efforts of this State agency. "New emission reduction regulations adopted and proposed by CARB. . . are extremely aggressive. . . Technological, economic, or legal factors may result in suspension or postponement of certain requirements or deadlines," and "experience tells us that 100% compliance is rarely achieved." There is also no clear statement that the Port will cooperate with or coordinate in any way the implementation of state regulations.

The recent health risk assessment (HRA) done by CARB for West Oakland indicates a new urgency that air pollution from the Port of Oakland must be addressed. This assessment showed elevated cancer risks of 190 per million directly from Port of Oakland operations and countless other health impacts including hundreds of asthma and respiratory illnesses.3 We in the Healthy 880 Communities feel that Port of Oakland's operation fell short with the HRA. Not all operations (Air Cargo, jet Fuel) were inventoried to assess the impacts South of West Oakland. We need to know the health impacts, where can we get the data that reflects what the air pollution in doing to the neighboring communities. This is just the tip of the iceberg in terms of health impacts from Port of Oakland pollution, since this assessment only looked at impacts of diesel PM, excluding other pollutants such as nitrogen oxides and other air toxics. Additionally, we believe pollution from trucks

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3 CARB, Diesel Particulate Matter Health Risk Assessment for the West Oakland Community, March 2008.

serving the Port of Oakland was misallocated, vastly under-estimating impacts from the Port.

Given the pressing health concerns from Port of Oakland operations, the significant increases in container traffic slated for the coming decade, and the fact that measures to reduce Port pollution are readily available, we urge the Port to commit to discrete actions to reduce air pollution from its operations in addition to those actions occurring outside of the Port's control. This Plan must be strengthened to achieve maximum pollution reductions, with the ultimate objective of preventing all negative health impacts from Port of Oakland activities. As one of the largest ports in the nation, the Port of Oakland must take responsibility for the impacts of its operations on nearby communities and accelerate mitigation of air pollution to the maximum extent feasible. Our recommendations for improving the Plan are laid out below with more detailed comments to follow separately.

The current draft does appear to be a useful background document or statement of purpose for the Port's preparation and planning of programs and projects. However, it cannot be accurately described as an air quality improvement plan, a "master plan", or even a policy statement. A Statement of Potential Goals and Constraints would be a far more accurate and fair description. Unless significant changes will be made to the final plan.

Sincerely,

Wafaa Aborashed

Executive Director

Port of Oakland
Maritime Air Quality Improvement Plan (MAQIP)

COMMENT SHEET

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ENVIR. PLANNING DEPT.

Please use this form for comments on the draft MAQIP document and send to Anne Whittington, Port of Oakland, 530 Water St., Oakland, CA 94607. E-mailed comments to awhittington@portoakland.com (510-627-1559) are also welcome; please include the information below in your email.

Submitted by: Kent Lewandowski, Sierra Club Date: 6/19/08
510-625-5831 kentlewan@yahoo.com

	Section no.	Page and paragraph no.	Comment	Comment type 1. typo/factual 2. specific content 3. general remark
1.	6-3	6-4	"The Port would not wish..." - not a strategic comment - transmits sense	2
2.			of fear by the Port, encourages lawsuits	
3.	[redacted]	9-1	Document is missing a comprehensive	3
4.			legal overview of the Port's rights as landowner in enforcing new regs.	
5.	9-3	9-3	I would have hoped this section	2/3
6.			would outline which alternatives are recommended for action.	
7.	9.5.1	9-9	Would like more extensive study	2/3
8.			of container fee and potential to leverage ARB funding (SB974)	
9.	—	—	Would have liked to see habitat/	3
10.			wetlands improvement measure studied by this document.	
11.	9.1	9-2	"One size fits all" nature in this sentence is duplicated.	1
12.				
13.				

Diane Bailey et al.
Health and Environment Program
Natural Resources Defense Council
111 Sutter St, 20th Floor
San Francisco, CA, 94104

Via Email and U.S. Mail

July 14, 2008

Ms. Anne Whittington
Port of Oakland
530 Water St.
Oakland CA 94607

Re: Comments on the Port of Oakland Maritime Air Quality Improvement Plan

Dear Ms. Whittington,

On behalf of the undersigned groups, we write to comment on the Port of Oakland Maritime Air Quality Improvement Plan (MAQIP or the Plan). We are pleased that the Port of Oakland together with the Bay Area Air Quality Management District (BAAQMD) and other stakeholders has progressed on a plan to address port pollution; however, we are gravely disappointed with the lack of specificity and commitment in the MAQIP.

Considerable efforts over the years by environmental, public health, and community organizations, in addition to recent efforts by the California Air Resources Board (CARB), South Coast Air Quality Management District (SCAQMD), and the Ports of Los Angeles and Long Beach, have all demonstrated the necessity and timeliness of the port air quality improvement plan. In April 2006 as part of the Governor's Goods Movement Action Plan, CARB estimated that pollution from California ports and goods movement activities causes 2,400 premature deaths and over 1 million school absences every year, costing the state approximately $200 billion by 2020.[1] With growing evidence of greater health impacts from air pollution, CARB recently updated those estimates, noting that diesel-powered freight transport in California each year causes over 3,700 premature deaths and many thousands of hospital admissions, missed workdays and missed days of school.[2]

It is abundantly clear that a strong air quality plan is needed to protect public health and the environment, especially given the fact that the Port of Oakland container throughput has grown by more than fifty percent over the past ten years.[3] While much attention has been focused on

[1] CARB Goods Movement Emission Reduction Plan at 2, April 2006. (hereinafter "CARB ERP").
[2] www.arb.ca.gov/Research/Health/pm-mort/pm-mortdraft.pdf
[3] http://www.portofoakland.com/maritime/facts_cargo.asp

the Ports of Los Angeles and Long Beach, these ports already adopted a far reaching Clean Air Action Plan in November 2006. The recent health risk assessment (HRA) done by CARB for West Oakland indicates a new urgency that air pollution from the Port of Oakland must be addressed. This assessment showed elevated cancer risks of 190 per million directly from Port of Oakland operations and countless other health impacts including hundreds of asthma and respiratory illnesses.[4] This is just the tip of the iceberg in terms of health impacts from Port of Oakland pollution, since this assessment only looked at impacts of diesel PM, excluding other pollutants such as nitrogen oxides and other air toxics. Additionally, we believe pollution from trucks serving the Port of Oakland was misallocated, vastly under-estimating impacts from the Port.

Given the pressing health concerns from Port of Oakland operations, the significant increases in container traffic slated for the coming decade, and the fact that measures to reduce Port pollution are readily available, we urge the Port to commit to discrete, measurable actions to reduce air pollution from its operations in addition to those actions occurring outside of the Port's control. This Plan must be strengthened to achieve maximum pollution reductions, with the ultimate objective of preventing all negative health impacts from Port of Oakland activities. As one of the largest ports in the nation, the Port of Oakland must take responsibility for the impacts of its operations on nearby communities and accelerate mitigation of air pollution to the maximum extent feasible. Our recommendations for improving the Plan are laid out below with more detailed comments to follow separately.

Recommendations

I. ***Health Protective Goals:*** In order to ensure adequate health protections in surrounding communities, provide reductions in criteria pollutants, and prevent an over-reliance on HRAs to gauge air quality and public health, the Plan's goals must include clear, measurable targets to reduce health risk from toxic air contaminants and criteria pollutants. These goals must be at least as ambitious as those articulated by CARB, and should include: (1) reducing the health risk from diesel PM by 70%, as compared to 2000 levels by 2010; (2) reducing the health risk from diesel PM by 85%, as compared to 2005 levels by 2020; (3) reducing NOx emissions by at least 30% by 2015; and (4) further reducing NOx emissions by 50% by 2020.

While the second health risk reduction goal was already adopted by the Port Board of Commissioners in a March 2008 policy statement, we see no evidence of support for the remaining goals outlined above. Further, it appears that the Port relies solely on CARB regulations to meet the goals stated in the Plan, rendering the Plan unhelpful at best. The Plan appears to elaborate in great detail on the challenges in merely complying with state regulations. The Port would be better served shifting the voluminous details of challenges into efforts towards removing barriers to achievement of greater emission reductions. The Port must include commitments to health protective goals, including the measures and concrete steps that the Port will take to meet these goals.

[4] CARB, Diesel Particulate Matter Health Risk Assessment for the West Oakland Community, March 2008.

In addition, any HRA's conducted as part of CEQA or under the MAQIP should assess the level of cancer risk, as well as non-cancer risks from port operations, and evaluate cumulative risk. We also urge the Port to embrace the ultimate goal of "no risk" from port operations. Lastly, the MAQIP should include assurances that any future expansion projects will include reductions in criteria pollutants above and beyond what CEQA requires to maintain compliance with air quality standards and health protective emissions levels.

II. ***Initiatives and Control Measures:*** The MAQIP must include discrete commitments to control measures and emission reduction programs by:

- Providing clear commitments, time lines and implementation schedules for each of the control measures necessary to meet the above goals.
- Providing for each control measure, the percentage of participation/compliance by the targeted source and compliance dates.
- Estimating the emission reductions from every control measure and disclosing all assumptions made to reach the emission reductions reported.
- Providing backstop measures in the event that the Port is unable to meet expected emission reduction targets.
- Utilizing lease-based approaches to maximize early emission reductions and ensure compliance with all measures.

III. ***Emissions Inventory:*** The current emission inventory significantly underestimates the emissions from port trucks and thus significantly underestimates the Port of Oakland's total contribution to regional air pollution. The Port must rectify the omission of vast amounts of truck related pollution from its emission inventory, as urged by many stakeholders previously.[5]

For each source of pollution, the Port should graph estimated emissions over time that clearly highlight and differentiate the emission reductions expected from current regulations, natural turnover (if any) versus MAQIP measures.

IV. ***Global Warming Impacts:*** The absence of any discussion or commitment to address the Port's contributions to global warming impacts demonstrates an alarming lack of leadership and comprehension of the gravity of climate change. It is incumbent upon the Port, which fundamentally bases its business on global warming pollution producing fossil fuel, to recognize global warming as one of the greatest challenges currently facing humanity, and incorporate measures to reduce global warming pollution in all Plans.

Climate change already had and will continue in greater severity to negatively impact the Bay Area as well as the rest of the world. Not only will the direct health impacts of

[5] See: Coalition for Clean and Safe Ports, Seaport Emissions Inventory comment letter addressed to Omar Benjamin, August 20th, 2007.

global warming be severe, hotter temperatures and altered climate patterns will also lead to significant increases in air pollution. A projected sea level rise of up to 3 feet or more by 2100 will create turmoil in the Port's day-to-day operation. Thus it stands to reason that the Port would have every incentive, both economic and for health justice principles, to include measures to reduce greenhouse gas (GHG) emissions in the MAQIP. Finally, it is highly likely that measures will be developed to require GHG reductions from ports under California's Global Warming Solutions Act of 2006, AB 32. The Port of Oakland should take a proactive approach to meeting AB 32 goals.

V. ***Port Responsibility and Legal Authority:*** As the "fourth busiest" container port in the nation,[6] the Port of Oakland must take responsibility for pollution from its operations and assert its authority to mitigate this pollution. The Ports have the legal authority to require control measures through tariffs to maximize emissions reductions under the Plan. Because tariffs can be used to implement uniform rules applicable to all tenants, they can achieve emissions reductions faster than other approaches, and can serve as "backstop" measures in the event that lease-based measures, incentives, or voluntary programs fail to provide the reductions needed.

VI. ***Funding:*** Improving air quality and protecting public health should remain the central goals of this Plan. Financial predictions and constraints are irrelevant to this process. The Port must take responsibility to ensure that any necessary funding is in place to support the goals of this Plan, including container or cargo fees whether Port initiated, or required by the state.

VII. ***Enforcement:*** Without proper enforcement, it cannot be assumed that the health goals will be met, despite best intentions. A clear enforcement plan is missing from the MAQIP and must be added to ensure real emission reductions.

VIII. ***Land-Use Policies:*** In order to maximize reductions in health risk on and off port lands, the Port must commit to adopting CARB health-protective land-use policies in its lease agreements and CEQA projects.[7]

IX. ***Public Process:*** The Port must fully consider comments by the public and provide responses to these comments in a revised Plan. Additionally, the public must be provided sufficient time to review a revised Plan before agency action is taken. The Port should release frequent progress reports on the implementation of the plan. Moreover, the Port should continue the MAQIP stakeholder group on an ongoing basis to discuss future revisions to the Plan.

In closing, we agree with the following assertions made by CARB on the effectiveness of this Plan:[8]

[6] http://www.portofoakland.com/maritime/factsfig.asp

[7] See: CARB, Air Quality and Land Use Handbook: A Community Health Perspective, April 2005. http://www.arb.ca.gov/ch/handbook.pdf

- Emissions related to activities at the Port are significant and contribute to adverse public health impacts in nearby and surrounding communities.

- Voluntary measures are [*not*] sufficient to meet public health protection goals.

- The Port [should]…instead adopt *firm* commitments to actions that have interim goals and specific time-frames in the MAQIP.

- Actions can be taken sooner than ARB regulations require that will result in emission reductions prior to the 2020 time-frame.

- …The Port…[should] review this List [of initiatives in the MAQIP] and select those that will result in *real* emission reductions.

- Once [effective measures are] chosen, we recommend the Port establish a *firm* commitment to these initiatives…

We thank all of the members of the MAQIP as well as Port and Air District staff for their hard work on this Plan. However, it appears that the draft Plan fails to incorporate many important recommendations made by MAQIP members or to utilize the extensive technical resources of many members and stakeholders. Thus, we strongly urge the Port to remediate this flawed Plan to address the many concerns raised here. We appreciate this opportunity to comment and would welcome any follow up conversations to clarify our concerns more with you or your staff.

Sincerely,
Diane Bailey
Senior Scientist
Natural Resources Defense Council

Candice Kim
Program Associate
Coalition for Clean Air

Rupal Patel
Director
Communities for Clean Ports

Nicole Lee
Project Director
Ella Baker Center

Christine G. Cordero
Community Health Program Coordinator
Center for Environmental Health

[8] Robert Fletcher, CARB, Letter to Delphine Prevost, Port of Oakland, January 7, 2008. *Emphasis added.*

John Kaltenstein
Marine Program Manager
Friends of the Earth

Kent Lewandowski
Chair, Executive Committee
Sierra Club, Northern Alameda County Chapter

Vivian Chang
Executive Director
Asian Pacific Environmental Network

Andy Katz
State Government Relations Director and Director of Air Quality Advocacy
Breathe California

Suzanne Murphy
Executive Director
Worksafe

Brian Beveridge, Co-Chair
Athena Applon
West Oakland Environmental Indicators Project

Ray Kidd
Board Member
West Oakland Neighbors

Teri Shore
Program Director
Turtle Island Restoration Network

Frank Gallo

Cc: Port of Oakland Maritime Air Quality Improvement Plan Co-chairs
Omar Benjamin, Port of Oakland
Jack Broadbent, Bay Area Air Quality Management District
Brian Beveridge, West Oakland EIP
Andy Garcia, GSC Logistics

MAQIP Task Force members, including representatives of:
Mayor Ron Dellums
Assemblymember Sandre Swanson
Senator Don Perata
Congresswoman Barbara Lee

City Councilmember Nancy Nadel
County Supervisor Nate Miley
County Supervisor Keith Carson
Swati Prakash, Pacific Institute
Ray Kidd, West Oakland Neighbors
Doug Bloch, Change to Win
Kent Lewandowski, Sierra Club
Athena Applon, West Oakland Environmental Indicators Project
Jamie Fine, University of San Francisco
Sharon Cornu, Alameda Labor Council

PACIFIC
INSTITUTE
Research for People and the Planet

Anne Whittington, Port of Oakland
Via email: awhittington@portoakland.com

July 14, 2008

Dear Ms. Whittington,

Please accept the following detailed comments on the draft Maritime Air Quality Improvement Plan released on June 13, 2008, submitted by The Pacific Institute.

BROAD OBSERVATIONS:

1) **The policy statement affirmed by the Port of Oakand's Board of Commissioners setting clear, health risk reduction goals for the Port is seriously undermined by the equivocating language and pessimistic tone found throughout the draft MAQIP**. There is a conspicuous absence of a single affirmation of commitment or intent on the part of the Port to take action to reduce emissions. This raises serious questions about the value and purpose of this document as an actual master plan or even as a policy statement. The draft clearly states that the emission reduction goals set forth are only "potentially achievable," and has the net effect of lowering expectations to such depths as to make emission reductions from the Port appear to be an insurmountable task. This overemphasis on challenges and constraints rather than possibilities and leadership strengthens the observation that this is not an air quality plan.

2) **This draft of the MAQIP is unacceptable as an air quality improvement plan at all but simply a statement of goals and constraints. This draft does not meet four out of five of the criteria in the "Key Components Checklist" provided in January by several MAQIP task force participants.** (See Attachment A). This draft air plan is not what the MAQIP task force signed up to help create. The only element of a plan that this document includes is a clear, quantitative goal. However, the rest of what typically constitutes and air quality plan is missing: a commitment to meeting the goal, clearly defined strategies for meeting the goals, a description of how strategies will be implemented, tracked, monitored and / or enforced, and a budget. In fact, the plan as currently drafted may do more harm than good. The overall impact after reading the plan is to perceive the author as an institution incapable of defending its own stated concepts and principles, which has the net effect of undermining any public confidence in the Port whatsoever.

   It is also of great concern that there is tremendous specificity as to what the Port will not do in pursuit of emission reductions, with no corresponding specificity as to what it will do. This undermines the description of this draft plan as a Master Plan (section 1.2.1) that sets forth policy direction and establishes a framework for future action, rather that providing specific details as to how the goals will be reached. If this document is indeed a Master Plan, then there would appear to be no place for statements such as "The Port would not wish to pursue

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action that is certain to result in litigation," (section 6.3) "the Port has neither the authority nor the resources to monitor its tenants and their business partners," (section 1.2.2) and, in reference to Port-wide emission reduction requirements, "for a variety of reasons, this tactic is not desirable" (section 9.1).

3) **It is deeply disappointing that the Port has changed the parameters of the MAQIP mid-course and engaged in a unilateral drafting process.** The section in the introduction presenting the Port's planning continuum, and defining the plan as a "master plan" with less detail, more vision, and more stakeholder participation, puts this end product in clear perspective that should have been provided at the beginning. It is demoralizing that the MAQIP task force is only seeing this planning continuum, at the end of 15 months of planning and MAQIP task force meetings. While we are aware of the changing nature of planning processes, we are disappointed that the Port has taken so much time of so many task force members during the planning process, only to change the parameters of the end product mid-course, and have gone into a unilateral drafting process to produce a document that can hardly be recognized as an air quality improvement plan.

4) **It is disturbing and inappropriate that the primary message of the MAQIP document is that the Port has far too little authority, and far too many constraints to realistically require or leverage significant reductions in emissions from its customers and tenants.** This message is contrary to the description of the Port's legal authority presented by the Port's own lawyer in public meetings, and contrary to the actions taken by the Ports of Los Angeles and Long Beach to reduce their emissions. The fact that the Port has chosen not to pool or leverage the authority of and cooperating with those agencies that do have the authority to require and enforce emission reductions, as many task force members encouraged them to do throughout the process, is very disappointing. The current draft does appear to be a useful background document or statement of purpose for the Port's preparation and planning of programs and projects. However, it cannot be accurately described as an air quality improvement plan, a "master plan", nor even a policy statement. A Statement of Potential Goals and Constraints would be a far more accurate and fair description.

5) **The draft MAQIP undermines the efforts of State regulatory agencies in several instances, while at the same time relying on the full implementation and compliance with State regulations to meet its stated goals.** The plan has a confusing and contradictory relationship to the implementation of State regulations for reduction emissions. Even though the projected emission reductions described in the plan, and the strategies for attaining plan goals rely heavily on the assumption that State regulations will be implemented and complied with in a timely fashion, the draft plan expresses a deep and contradictory pessimism about the "feasibility" of these regulations being implemented. In fact, section 6.3, the detailed description of the many challenges faced by the Port's air quality improvement goals, goes so far in describing the challenges facing the timely implementation of CARB regulations as to have the effect of severely undermining the regulatory efforts of this State agency. "(N)ew emission reduction regulations adopted and proposed by CARB. . . are extremely aggressive. . . Technological, economic, or legal factors may result in suspension or postponement of certain requirements or deadlines," and "experience tells us that 100% compliance is rarely achieved." There is also no clear statement that the Port will cooperate with or coordinate in any way the implementation of state regulations.

Detailed comments

1) Introduction

- Section 1.2.2 "Opportunities and Challenges" – briefly describes (4 sentences) the benefits of creating a MAQIP, and then spends three paragraphs describing challenges. These include the statement that "reaching those goals is only possible with strong statewide – and preferably national and international – regulations. This plan counts on the benefits of regulations to reduce emissions to levels close to the MAQIP goals." This raises the question of why we should be creating a master plan if we can just rely on regulations to achieve our goals? The sentiment expressed in this paragraph, of needing strong regulations, is undermined several times later in the document when the authors repeatedly cite the likelihood that regulations will not meet 100% compliance.

- This section also reads in several places like a justification for non-action rather than an air quality improvement plan. The sentence "The Port has neither the authority nor the resources to monitor its tenants and their business partners" sets a tone of low expectations that is reinforced throughout the document.

- The description of the process presents a procedural history that makes it seem as if the Port came up with the process on its own. There should be some acknowledgement of the leadership of impacted community residents in creating the community co-chair method.

2) Port of Oakland and its Seaport Operations

- This section is long and seems marginally relevant. Why are there five pages dedicated to this book report-style description?
- There is no description of what this plan is actually focused on, which is air pollution from seaport operations.
- The tone of this section continues the dispiriting theme that runs throughout this document, "Although the Port of Oakland would really really like to reduce diesel pollution, we just can't commit to doing because things are really hard for us."
- This would be an appropriate place to acknowledge why the Port is developing this plan: the impacts (health and otherwise) of Port operations on local and regional communities.

3) Technical and regulatory background

- This section provides a summary and laundry list of state regulations related to goods movement, but does not commit the Port to cooperating to implement these regulations, or even set a goal of making sure these regulations are met.

4) Port of Oakland Baseline Emissions and Health Risk

- This section does not acknowledge that the Seaport Emissions Inventory has been soundly criticized for not accurately estimating emissions from Port trucks. It is simply not accurate to refer to section 3 of their Health Risk Assessment as "non-Port sources."
- Page 4-4 presents "key findings from CARB's study" which includes the CARB finding that elevated cancer risk from all sources of diesel pollution is 1200 in a million, and

provides a frame of reference that "the expected cancer rate from all causes, including smoking, is about 200,000 to 250,000 per million." Nowhere in CARB's documents do they include the reference to smoking as a background cause of cancer. The reference to smoking is misleading and is falsely attributed to CARB.

5) Port of Oakland Future Emissions and Health Risk

- It is great to see that this section discusses the development of weighting (aka "incremental risk") factors that account for the fact that sources of pollution that are closer to where people live and breathe contribute more to health risk, than sources of pollution that are further away. This section acknowledges that "on-road trucks generate the greatest potential cancer risk per ton of diesel PM emissions," and give on-road trucks a weighting / incremental risk factor of 2.1 excess cancer cases in a million, per ton of PM emissions, as compared to ocean-going vessels at berth, which have a factor of 0.9. However (see notes for next section), the fact that these incremental risk factor are then essentially discarded in the creation of actual air quality improvement goals is extremely disappointing.

- The projection of future emissions relies on the assumption that Federal and state regulations related to goods movement will be implemented, although later in the document the author expresses clear pessimism that these regulations will in fact be implemented and receive full compliance. In other words**, in this section the Port takes credit for full implementation of regulations, and in a later section the Port undermines the goal of full implementation.** At the very least this suggests that the Port should project out future emissions assuming that some regulations will not in fact be complied with.

6) Air Quality Improvement Goals

- The useful calculation that was presented in the previous section, of a weighting or incremental risk factor for different sources of diesel pollution, is completely ignored in this section. Despite having done the work to actually come up with the weighting factor, the report author states "the Port assumed a one-to-one correspondence between emissions and risk." (Note that this section falsely states that the Task Force also made this assumption, despite a clear memo presented at the December 10 meeting by a substantial number of task force members calling attention to the fact that "a 1:1 relationship between emissions reduction and risk reduction should not be assumed."[1])

- The presentation of diesel PM reduction goals (section 6.2.1) is prefaced as "The following goals are ambitious , but potentially achievable." This is not even setting a goal, let alone making a commitment to meeting that goal. It is a way of sending a loud and clear message of extremely low expectations and preparation for failure.

- Section 6.3, Challenges, is bizarre, out of place, excessively detailed and inappropriate for this, or indeed any section of this document.

[1] "Sample Outline of a Comprehensive Maritime Air Quality Improvement Plan, December 10, 2007. Presented by Swati Prakash, Pacific Institute.

- It begins with a declaration that CARB regulations are not likely to be complied with in a timely fashion. **For a semi-public entity like the Port of Oakland to directly and in writing undermine the efforts of another public agency like the Air Resources Board in this detailed manner is astonishing.** This declaration is also tantamount to the Port declaring that it may not cooperate with the implementation of these regulations, as they expect that "technological, economic, or legal factors may result in suspension or postponement of certain requirements or deadlines," or that some of the CARB regulations "may be contested" through the legal system. This section also undermines the statement in section 1.2.2 that reaching the goals of the MAQIP is only possibly with strong regulations.

- The document states that "The Port would not wish to pursue action that is certain to result in litigation," which is tantamount to telling external stakeholders that the threat of a lawsuit is all that is needed to stop any potential action by the Port to reduce air pollution emissions associated with Port operations.

- Taken as a whole, **this sub-section codifies the Port's commitment to low expectations, and has the effect of rendering this draft plan actually worse than no plan at all.**

- This section does acknowledge that the CARB Health Risk Assessment "indicates that even more ambitious emissions reductions may be needed to reach the MAQIP risk reduction goals." However, this observation is just depressing given that it is squeezed between so many statements indicating that even the modest emission reduction goals set forth in the MAQIP may be impossible to achieve in light of the many challenges.

7) Emission Reduction Strategies

- This section references "examples" of emission control strategies that "can potentially be applied to Port-related sources of diesel emissions." This is not a description of what strategies *will* be used to reduce emissions, which is what a standard air plan would have. It is more of a laundry list appropriate for book report style writing, and in no way defines what strategies the Port intends or expects to pursue.

- This section states that "achieving the intended emissions reductions benefits will require enforcement by regulatory agencies including CARB and BAAQMD, with cooperation from the Port." This sentence seems out of place considering the implications in the previous section that the Port is reluctant to cooperate.

8) Air Quality Improvement Initiatives

- If the list of "selected initiatives" had been collaboratively selected, defined and designed, this section would be the closest thing to the commitment to specific emission reduction measures that many task force members have been asking for in this MAQIP. In other words, section 8.3 is the closest thing to an actual air plan, yet it lacks the following traits of a collaboratively developed air plan:

- The initiatives were not really selected with input from community stakeholders
- There is no estimation of expected emission reduction benefits
- There is no actual commitment to implementing any of the programs or plans.

9) Implementation

- The language and tone in this section continues the theme of "why the Port of Oakland can't actually do very much to effect pollution emission reductions." In describing lease provisions, the document states that "success depends largely on market and competitive conditions," which seems like another obvious but internal observation, not something to include in an air quality improvement plan.

- Similarly, the document states clearly that imposing "emission reduction requirements or projects by the Port, if and when necessary. . . is not desirable." This statement, which is effectively a public promise not to impose such requirements, does not belong in this document.

10) Monitoring and Reporting

- The section describing a goal of updating CARB's West Oakland health risk assessment as a way to track progress towards diesel PM cancer risk reduction is a good addition. This subsection is more in line with how air plans are typically written.

- There is a sub-section on "adaptive management," which is a term first put forward by some task force members (Pacific Institute, EPA) to describe the possible need to correct course during the process of implementing the MAQIP, if it seems that the implementation is not likely to lead to achieving the goals of the plan. In this sub-section, this common understanding of what adaptive management means is turned inside-out to refer instead to a process of managing down to meet low expectations, rather than managing up to attain goals: "(A)n adaptive management approach could dictate changes that range. . . to canceling a project entirely."

In closing, I would like to extend my appreciation to all of the staff at the Port of Oakland, and to all the participants on the MAQIP task force, who worked hard for many many hours over the past year and a half to pull together an air quality improvement plan. As one of the MAQIP task force participants, I also have to express my deep disappointment in the Port as an institution which has chosen to produce a draft of an air plan that few people would be proud of. I believe that the Port is capable of much more, and that the hundreds of hours of time that has gone into this product will not have been a waste. If the Port's overriding consideration at this point is that an air quality plan with any more substance than this draft will result in a massive loss of customers (a contention that is backed only with rhetoric and has yet to be substantiated with any data whatsoever), then perhaps it should consider reframing and retitling this document as something other than a Maritime Air Quality Improvement Plan. But to attempt to portray this document as a plan to protect community health, a plan that is worthy of public acceptance is completely unacceptable.

Sincerely,

Swati Prakash
Program Director, Community Strategies for Sustainability & Justice

Attachment A
Evaluation of June 2008 Draft MAQIP against "Key Components Checklist"

1. **Goals**. Does the plan set clear, quantitative goals and timelines, and commit to meeting them?
    a. Does the plan define clear quantitative goals (emissions, risk, dates)? Yes
    b. Is there a clear commitment to meet the goals? No.

2. **Strategies**. Does the plan clearly define how the goals will be met? No. The plan presents possibilities, but no clear definition of how goals will be met.
    a. Does the plan clearly define what specific measures** will be implemented to meet the goals? No. The plan describes "examples" of emission control strategies that "can potentially be applied," and presents air quality improvement initiatives that "have been selected for further study and probably implementation," but does not clearly define what measures will be implemented, not even to affirm that regulatory measures will be implemented.
    b. Does the plan clearly define strategies / measures for each sector of Port activity, and for new projects? Yes, strategies and measures are described, but without any commitment to implementation.
    c. Does the plan define the process in which additional measures will be considered and incorporated in the future? (What will trigger consideration of additional measures; what criteria will be used; who will decide?) No.
    d. Does the plan include a technical demonstration that the strategies will attain the goals, including a projection of emissions reductions that come about as a result of implementing the measures adopted in the plan? No.

3. **Implementation**
    a. Does the plan clearly describe how each strategy will be implemented? No. The plan describes the general process for developing emission reduction strategies, and refers to the development of programs and projects as the appropriate levels at which these strategies will be designed, including an implementation plan. The document does have a section on "implementation" which does describe a broad and generic implementation approach. This section devotes more lines to defining limits of authority than to describing anticipated methods for implementing actual pollution reduction measures / strategies.

4. **Tracking, monitoring and reporting**.
    a. Measures: Does the plan define how implementation of each measure will be tracked, including:
        - ✓ What recordkeeping will be required? No
        - ✓ What indicators of compliance and progress will be required? No
        - ✓ Who will do this, and what are the key compliance dates? No

It appears that the plan refers to the development of programs and projects as the appropriate levels of planning at which these questions are answered.

    b. Tracking: Does the plan clearly define how progress towards, and attainment of, the goals will be tracked? (What indicators are tracked, reported to whom, when?) Yes.

c. Plan revision / adaptive management: Does the plan describe adaptive management measures and what corrective actions will be taken should there be a shortfall in progress? Partial yes. While a short adaptive management strategy is described, it appears oriented towards managing feasibility constraints, rather than addressing the question of what corrective actions will be taken should there be a shortfall in progress. (How will the plan be revised, by whom, on what timeline? What are the consequences for failure to meet the goals, or failure to correct the plan? This question is not answered.)

d. Plan budget: Does the plan include estimates of adopting plan strategies and measures, No and lay out strategies for generating sufficient income / revenue to fund the plan? Partial yes. There is a section on funding strategies, but these are not quantified, and do not answer the question of whether sufficient revenue will be raised to fund the plan.

5. **Enforcement**.

Does the plan clearly spell out, for each measure, the enforcement responsibilities and mechanisms? (Who will oversee and determine whether each measure is being complied with? Who has enforcement and penalty authority?) No. Appendix E does appear to be a matrix of agency responsibilities, but this appendix is not referenced in the body of the document.

---

* The reader/reviewer of the plan should be able to say where in the plan each of the questions are answered. If the answers are located in other documents, how are those documents referenced/incorporated in the plan?

** The terms "strategies" as used here is interchangeable with "measures", and are applicable to specific sources, source categories, or new projects.

July 14, 2008

Port of Oakland
530 Water Street
Oakland, CA 94607

Attn: Ann Whittington
Delivered Via Email

Regarding: Port of Oakland "Maritime Air Quality Improvement Plan"

On behalf of the Pacific Merchant Shipping Association (PMSA) and its members we appreciate the opportunity to provide comments on the contents of the Port of Oakland's Maritime Air Quality Improvement Plan ("MAQIP"). PMSA represents the ocean carriers and terminal operators that operate in West Coast Ports moving approximately 90% of the containerized cargo that moves through California and Washington, including most of the tenants and customers operating at the Port of Oakland.

We broadly and generally support the end goal of the Policies, which is to improve air quality through the reduction of emissions impacts by mobile sources operating at the Port while not compromising the Port's competitiveness and economic viability. We have been proud to work as a member of the stakeholder process that has been ongoing for some time and appreciate the commitment that the Port has made to maintaining the development of the MAQIP in a fair, open and collaborative forum.

We preface our comments today be reminding the Port that, while there is certainly still much to be done, PMSA member companies and the Port of Oakland have already exceeded the clean air efforts of most other ports in North America. Our efforts to date are a great example of the progress that can be made to improve our trade and environment concurrently when we are able to harness the maritime industry's ability to work together cooperatively and voluntarily with California's landlord ports.

We generally believe that by partnering together, through the use of voluntary and incentive based improvements, that we can achieve the Port's MAQIP goals. This confidence stems from our existing and previous partnerships together through voluntary programs, incentives, and commercially-feasible lease negotiations made in good faith between the Port and its tenants, which have already markedly improved air quality around the ports. We look forward to more partnerships in the future.

Pacific Merchant Shipping Association
250 Montgomery St., Suite 700, San Francisco, CA 94104 (415) 352-0710 fax (415) 352-0717

Some of these voluntary projects already undertaken by PMSA members in California that are Port of Oakland tenants include:

- Use of low sulfur fuel in vessels' main and auxiliary engines
- Retrofitting of Cargo Handling Equipment with after combustion technology
- Purchasing on-road certified equipment for terminal operations
- Installing clean air injectors (slide valves) into existing vessel engines
- Use of cleaner fuels including emulsified diesel (Proformix), ethanol blended diesel (O2 Diesel) and ultra-low sulfur diesel in advance of regulatory requirements.
- Liquefied Natural Gas (LNG) Yard Tractor demonstration projects
- Liquefied Petroleum Gas (LPG/propane) Yard Tractor demonstration and implementation
- Use of appointment systems to spread out the volume of truck traffic and terminal operations to reduce congestion and emissions resulting from truck idling and gate congestion
- Demonstration and feasibility projects with alternative shore-power technologies
- Construction of vessels capable of using shore-power
- Planning to introduce dockside shore-power projects
- Construction of vessels that have fuel tanks and fuel delivery systems that enable the use of cleaner fuels

In addition, on the regulatory front we have also supported:

- CARB's Cargo Handling Equipment Regulation which went into effect on January 1, 2007
- Assembly Joint Resolution 8 (Canciamilla), sponsored by PMSA, adopted by the California State Legislature supporting the Ratification of IMO's Annex VI to MARPOL 73/78 and the designation of a North American Sulfur Emission Control Area (SECA)
- The US EPA delegation's proposal at IMO to amend stricter fuel use limits into MARPOL Annex VI along with the World Shipping Council

All of these existing, past and ongoing efforts have been accomplished with the participation of the industry groups affected and have resulted in meaningful and feasible measures to reduce emissions.

In addition, PMSA and our members have also consistently supported regulatory efforts that can be applied in a uniform manner that will not result in competitive issues or conflicting enforcement. It is for that reason that we are pleased with the action by the IMO Marine Environmental Protection Committee (MEPC) forwarding very stringent regulations for approval in October of this year. More importantly, the U.S. Senate and House of Representatives have recently passed the necessary implementation legislation for the U.S. to enforce the provisions of Annex VI of MARPOL. This historic legislation, that now only needs the Presidents signature, will allow the U.S. to be a full partner in the international community in reducing emissions for vessels. PMSA suggests that future drafts of the MAQIP be modified to reflect the benefits of Annex VI.

Underlying our shared goal of reducing emissions and improving quality of life, we believe the Port has done the right thing by starting the MAQIP process with the establishment of goals that acknowledge consideration of the business and environmental needs of the Port of Oakland. By requiring consideration of the legal, business and financial implications of strategies in the formation

of the MAQIP, we hope that the Port will be able to maintain sustainability and balance as it moves down the path of developing cleaner operations while growing throughput and trade.

This balance is especially important given the fact that the MAQIP is principally built around the expectation that the industry will make substantial investment in procuring equipment, paying for infrastructure, and incurring increased operational and maintenance costs, that are not included in current costs, through the imposition of regulations, user fees and partnership on incentive programs.

Given this commitment to balance, we are pleased that we need not remind the Port that they are a discretionary gateway for most major importers and nearly all intermodal cargo. For non-discretionary cargo, represented by the majority of the Port's export shippers, this trade is primarily in commodities which are extremely low-margin products generally priced by worldwide marketplaces, leaving them no ability to share or pass-along costs. This position, given the current fiscal situation at the Port, its flat growth in overall volumes, and the ongoing development of competitive, alternative gateways for intermodal cargo, only reinforces our appreciation for the consideration of balance in the MAQIP and the goals under which it was developed.

In addition to the above general comments, please find our additional, and more extensive formal comments attached.

In conclusion, PMSA and our members support your goals of reducing air emission impacts on the local communities and the region while simultaneously growing trade. Based on the positive efforts to-date of the Port and its tenants to reduce air emissions we believe that our members have demonstrated their willingness to address this issue and have had considerable success in the past. While we recognize that much remains to be done, we applaud the economic and environmental balance goals of the MAQIP and its ambitious vision for the future of the Port of Oakland.

If you have any questions regarding these comments, please feel free to contact me at (415) 352-0710, or via e-mail at jmclaurin@pmsaship.com.

Sincerely,

John McLaurin
President

cc: Members, Board of Port Commissioners, Port of Oakland
Omar Benjamin, Executive Director, Port of Oakland
James Kwon, Maritime Director, Port of Oakland

COMMENTS ATTACHED

PMSA Comments To June 2008 MAQIP Draft

As noted in the draft, there is no executive summary. This needs to be completed and include a summary of the guiding principles.

Page 1-2
The box on page 1-2 states that the "input" should come from the Steering Committee Advisory Group. This is a misnomer as Section 9 of the Draft Plan lays out the participation of a Maritime Stakeholder Advisory Group, which should be advisory to port staff.

Page 1-8
It should be noted that the guiding principles were signed off on by all Task Force members.

Table 3-1
Expand the discussion of IMO for large marine engines and add SOx as a Pollutant Most Effected. Also note that the US ratified MARPOL Annex VI.

<u>NOx Engine Standards</u>

- Tier 1 – 17.0 g-NOx/kW-hr, vessels 1990 - 2010
- Tier 2 – 14.4 g-NOx/kW-hr January 1, 2011 , 15% reduction from 2005 level
- Tier 3 – 3.4 g-NOx/kW-hr January 1, 2016, 60% reduction from 2005 In ECA, Tier 2 outside ECA

<u>Global Sulfur Cap</u>

- 4.5% reduced to 3.5% in 2012
- 0.5% as early as 2020 but no later than 2025*

* based on fuel availability study to be done in 2018.

<u>SECAs to ECAs</u>

- 1.5% sulfur reduced to 1.0% on March 1, 2010, 60% SOx reduction from 2005*
- 0.1% on January 1, 2015 . 96% SOx reduction from 2005P

<u>PM Reductions under an ECA</u>
30% reduction in PM in 2010 from the 2005 levels*
83% PM reduction in 2015 from 2005 levels*

*Using the CARB sulfur average of 2.5% sulfur

The list of proposed or adopted regulations does not include the thermal refrigeration union (TRU) regulation that was adopted and enforced by the end of 2008.

Section 5
The growth scenario's and estimates are probably overly optimistic.

Page 6-3 and 6-4
Modify the DPM, SOx and NOx reduction goals to be consistent with the proposed amendments of Annex VI.

Page 6-4
The challenges laid out here are valid. We have already heard from marine terminal operators that they are having difficulty getting orders filled for new Cargo Handling Equipment (CHE).

Include the need for CARB to work with the U.S. EPA in designating an ECA that will include California, and hopefully, the entire North American continent.

Page 7-1
With regard to LNG powered CHE as an emission control technology, it should be noted that on-road LNG engines are having difficulties meeting state standards for off-road duty cycles.

Page 8-18
To Programs add compliance with Annex VI
To Projects for ships include the slide valve and fuel emulsification project by APL and the voluntary use of 0.2% distillate fuel in the MAIN engines by Maersk.

Page 9-12
Update the Timeline for 2010 and later under SHIPS to reflect the amendments to Annex VI

Appendix E:
Update the MARPOL Annex VI discussion to reflect the MEPC pending amendments and the recent activity of the U.S. Congress.

THE CALIFORNIA RAILROAD INDUSTRY

July 14, 2008

Richard Sinkoff
Manager, Port Environmental Planning & Permitting
Port of Oakland
530 Water Street
Oakland, CA 94607

Re: Freight Railroad Comments on Draft MAQIP

Dear Mr. Sinkhoff:

On behalf of the Association of American Railroads and its Class 1 member freight railroads operating in California (BNSF Railway and Union Pacific Railroad, or the Railroads), we appreciate the opportunity to comment on the Draft Maritime Air Quality Improvement Plane released on June 13, 2008.

While we do not have specific comments at this time, we will continue to participate in ongoing stakeholder meetings and may submit written comments at a later date. If you have any questions or concerns, please call me at 415-415-4213 x12 or Darcy Wheeles at 415-602-4213.

Sincerely,

Kirk Marckwald
Principal, California Environmental Associates
On behalf of the California Railroad Industry

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION IX
75 Hawthorne Street
San Francisco, CA 94105-3901

JUL 14 2008

Richard Sinkoff, AICP
Director of Environmental Programs
Port of Oakland
530 Water St., #3
Oakland, CA 94607

Dear Mr. Sinkoff:

The U. S. Environmental Protection Agency (EPA) is pleased to have the opportunity to provide comments on the June 2008 Port of Oakland's Draft Maritime Air Quality Improvement Plan. The Draft plan falls below our expectations of an air quality improvement plan. It lacks firm commitments, specifically regarding strategies, milestones and enforcement. At a minimum we recommend implementing the 2006 CARB Emission Reduction Plan for Ports and the State's Goods Movement Action Plan and, where possible, considering going beyond these two state-wide plans.

We had hoped that the draft plan would include a clear embodiment of a shared commitment by the Port and other agencies in an integrated effort to enforce the full suite of available regulations and other measures. While the plan includes the Interagency Matrix listing regulations under the agencies' jurisdiction, there is not a clear statement in the Draft plan to include these measures and commitments from the Port (see Appendix E, "Summary of Existing and Upcoming Regulations").

We do, however, want to recognize the Port for establishing a multi-stakeholder Task Force to advise the preparation of the plan. The Task Force's co-chair structure, which included representatives of the community and industry, as well as the Port and the Bay Area Air Quality Management District, was the kind of open approach needed to ensure the involvement of key stakeholders. The Interagency Group was a valuable addition midway through the planning process and we would like to continue our involvement in the future. We also remain committed to carrying out measures under our jurisdiction.

We look forward to the completion of this phase of the planning process, and are supportive of requests that there be an opportunity for comment and full Task Force discussion of the final draft plan before it is submitted to the Maritime Committee or the Board of Commissioners.

Thank you for this opportunity to provide comments. If you have any questions, please feel free to contact me or to call Mike Bandrowski, Chief of our Air Toxics Program, at 415-947-4194.

Sincerely,

Deborah Jordan
Director, Air Division

From: <kidd@att.net>
Sent: 10/15/2008 5:01:02 PM
To: Anne Whittington
CC:
BCC:
Subject: Fw: MAQIP comments

Hi Anne
I hope this one has a better fate than the one in July. Please let me know if this one came through so I'll know if the address is ok. Thanks.
Ray
----- Original Message -----
From: kidd@att.net
To: anne whittington
Cc: becky@concurinc.net ; kathy kuhner ; johnnygatlin@yahoo.com ; ray kidd
Sent: Monday, July 14, 2008 4:53 PM
Subject: MAQIP comments

July 14, 2008

Anne Whittington

Port of Oakland

Dear Ms Whittington:

We, the Board of Directors of West Oakland Neighbors, are sick at heart over the most recent draft(June 2008) of the Maritime Air Quality Improvement Plan. After so much time, effort and thoughtful discussion by so many qualified stakeholders and observers, the product that resulted is hollow of the substantive steps and procedures needed to clean up the air we breath in our neighborhoods. The goal of 85% reduction in diesel particulate matter from Port related activities by 2020, is worthy, but it becomes a deceptive facade when there's nothing behind it that allows it to be brought into being. We were hoping the Port, having dealt with WON and the community in recent years about air quality issues, and with its admirable commitment to the MAQIP process, would have understood the kinds of commitments and actions that are necessary to undo the harm that is being done every day to our communities. We will not try to detail all the deficiencies of this plan, this is done very competently in submissions from the West Oakland Environmental Indicators Project, the Pacific Institute, the Natural Resources Defense Council and others, and we subscribe to those critiques. We are just very disappointed that the Port would squander the communities' resources and its own on this effort that leaves us searching to find some way we are better off than when we started 15 months ago. With this plan it is impossible to see how the Port will play any significant role whatsoever in cleaning up the pollution that continually streams thru West Oakland and then thru the rest of Oakland and points east, and the Port should be deeply ashamed and embarrassed by this. We are making these comments with the hope that the Port can still voluntarily take the corrective action that will be right for itself, right for the community, and right for the environment. We try to be good neighbors, and we expect no less from the Port.

Sincerely,

Kathy Kuhner

Johnny Gatlin

Ray Kidd

West Oakland Neighbors Board of Directors
<<File: TEXT.htm>>
<<File: Mime.822>>

APPENDIX K

Proposed Near-Term Implementation Plan from MAQIP Interagency Group
November 19, 2008

November 19, 2008

Omar Benjamin, Executive Director
Martime Committee
Port of Oakland
530 Water Street
Oakland,CA 94607

Dear Director Benjamin and Port of Oakland Maritime Committee:

The members of the Maritime Air Quality Improvement Plan (MAQIP) Interagency Group are pleased to submit to you the attached document, entitled, “Proposed Near-Term Implementation Plan”.

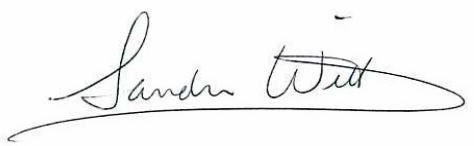
We would like to take the opportunity to congratulate the Port Board of Commissioners for establishing a goal of 85% reduction in health risks by 2020. We appreciate that the Port created a multi-stakeholder task force to assist with the development of the MAQIP and the revised version of the MAQIP reflects many recommendations that the taskforce members contributed.

Our Interagency group feels it is very important for the Port Commission to take some additional concrete steps to make the MAQIP a plan that clearly demonstrates the Port’s strong commitment to improving air quality and the health of Oakland residents who live near the Port. The attached document outlines concrete actions and specific timelines that the Port can take to reduce or eliminate negative health impacts. These are actions that we believe are critical to ensuring the MAQIP attains its stated goals. The Interagency Group would like the Near-Term Implementation Plan to accompany the MAQIP. It is our hope that this proposal will be discussed during the Port’s Maritime Committee meeting, scheduled for November 20, 2008 and as a result, moved forward to the full Board for review, discussion and approval.

The Interagency group of the MAQIP is comprised of representatives from California Air Resources Board, Bay Area Air Quality Management District, Environmental Protection Agency, City of Oakland, Alameda County Public Health Department, Alameda County Environmental Health Department, Alameda County Board of Supervisors, and the Port of Oakland. If you

should have any questions concerning our proposal please contact Dr. Sandra Witt (Alameda County Public Health Department) at 510-267-8018.

Sincerely,



Sandra Witt
Alameda County Public Health Department

Cynthia Marvin
California Air Resources Board

Jean Roggenkamp
Bay Area Air Quality Management District

Amy Zimpfer
US Environmental Protection Agency

Supervisor Keith Carson
Alameda County Board of Supervisors

Supervisor Nate Miley
Alameda County Board of Supervisors

Pamela Evans
Alameda County Environmental Health

Proposed Near-Term Implementation Plan for
PORT OF OAKLAND MARITIME AIR QUALITY IMPROVEMENT PLAN

Summary of Concrete Actions to be Taken by the Port
to Help Reduce the Health Risk from Diesel Particulate Matter from Seaport Sources 85% by 2020

The MAQIP (Table 9-3) includes an expansive list of primary and secondary air quality initiatives to cut emissions and health risk, increase efficiency, and reduce community impacts. These initiatives rely on possible future actions by the Port and its partners (including other agencies and the Port's tenants and customers) to successfully implement them.

The Port of Oakland is demonstrating its leadership and commitment to the MAQIP by itemizing the concrete actions the Commission and staff will take to expedite the Port's own emission control measures (Table 8-2) in several key areas. The most significant actions the Port can take in the near-term to achieve the goals of the MAQIP are: (1) to establish a source of continued funding for early action incentives, (2) to transition the fleet of port drayage trucks to much cleaner models by the end of 2009, and (3) to embrace and promote the use of shore-based power for ships at dock. Longer-term, the Port will also vigorously pursue efficiency improvements that can provide concurrent economic and environmental benefits. Accomplishing these major tasks in a timely fashion will build public confidence in the effectiveness of the MAQIP and the Port's ability to deliver on its promises.

OBJECTIVES AND PORT ACTIONS	**RESPONSIBLE ENTITY**	**TIMEFRAME FOR ACTION**
Near-Term Objective: Generate substantial new funding for incentives to accelerate pollution reduction programs		
• Adopt a user fee of $12.50/TEU ($25/container)	Commission	December 2008
• Establish Port policy to dedicate at least the first 3 years of fee revenue to air quality projects to reduce the existing health risk (for port trucks, for shore power and other projects)	Commission	December 2008 – March 2009
• Begin collection of fee	Staff	October 2009

OBJECTIVES AND PORT ACTIONS	RESPONSIBLE ENTITY	TIMEFRAME FOR ACTION
Near-Term Objective: Quickly clean up the fleet of 2,000 diesel trucks that frequently serve the Port to cut pollution in West Oakland and neighboring communities		
• Establish Port policy to move the clean truck strategy ahead of the pending comprehensive truck management plan to support compliance with the 2009 deadline in the Air Resources Board's (ARB) rule, ensure trucks are available to legally carry cargo to and from the Port without disruption, and maximize the Proposition 1B funding available for this purpose	Commission	December 2008
• Amend the existing Memorandum of Understanding (MOU) with the Bay Area Air Quality Management District (District) to allow the Port's $5 million in committed funds to be used for truck replacements after demand for retrofits is exhausted	Commission BAAQMD	December 2008 - January 2009
• Develop and implement a financing mechanism to leverage the first 3 years of user fee revenues to make the funds available in 2009 for clean truck projects	Commission Staff	December 2008 January - June 2009
• Develop an expanded MOU with the District to provide advance funds in 2009 from the user fees to leverage new commitments in 2009 in State, District and regional funding for cleaner trucks	Commission Staff BAAQMD	December 2008 January-February 2009
• Negotiate and establish bulk purchase prices for new trucks (like the Ports of Los Angeles and Long Beach)	Commission City Staff	January 2009 February – June 2009
• Consider amendments to Prop 1B Guidelines to allow truckers who get retrofit funds to also apply for replacement funds	ARB	January 2009
Interagency group will pursue other sources of funding for the clean truck strategy including but not limited to economic development grants, economic stimulus funds, Transportation, West Coast Collaborative, small business grants and loans, and others.	Interagency group	December 2008-February 2009

OBJECTIVES AND PORT ACTIONS	RESPONSIBLE ENTITY	TIMEFRAME FOR ACTION
Near-Term Objective: Take the leadership role in bringing shore-based power to all cargo ship berths to dramatically cut ship pollution at dock		
• Establish a Port policy to promote and enable the use of shore power at all cargo ship berths to comply with ARB's rule to reduce emissions from ships at dock	Commission	December 2008 – January 2009
• Provide staff report to the public and the Commission on proposed funding sources for shore-side infrastructure, including State monies (directly or through the District), a tariff on the terminal operators, lease requirements, and/or other means	Staff	January – May 2009
• Work with marine terminal operators, carriers, Pacific Gas and Electric and others to design a plan for installation of shore power at marine terminals and modification of ships to accept that power (compliance plans are due to ARB by July 2009 under State regulation).	Staff	January – June 2009
• Develop an incentive-based program to increase the usage of low-sulfur marine fuels in ocean-going vessels that visit the Port. The incentives will target fuels with sulfur content below the level required by ARB's regulation. Establish a Port policy to implement the fuel incentive program if the California Air Resources Board's fuel regulation for ocean-going vessels is rescinded, overturned or otherwise not enforced.	Commission, Staff Shipping Lines	January – June 2009 for program development

OBJECTIVES AND PORT ACTIONS	RESPONSIBLE ENTITY	TIMEFRAME FOR ACTION
Mid-Term Objective: Increase operational efficiency to reduce emissions of air pollutants and support Port growth		
• Provide staff report to the public and the Commission on recommended Port strategies to increase efficiency at sea, on Port property, and along transportation corridors	Staff	Mid-2010

APPENDIX L

Maritime Air Quality Improvement Plan (MAQIP)
Supplement No. 1
April 7, 2009

Port of Oakland

Maritime Air Quality Improvement Plan[1] (MAQIP) Supplement No. 1

Subject: Amendment of Control Measures and of Port Funding Sources
Date: April 7, 2009

Summary

The Port of Oakland's (Port's) Maritime Air Quality Improvement Plan (MAQIP), inclusive of Supplements, is the master plan of air quality goals and policies that covers all seaport-related development and operations at the Port. Subsequent to preparation of the Revised Final MAQIP (April 2009), but prior to the Board of Port Commissioners' (Board's) approval of the plan, Port staff met with the MAQIP Interagency Group, and agreed to incorporate into the MAQIP feasible actions from the Interagency Group's "Proposed Near-term Implementation Plan for Port of Oakland Maritime Air Quality Improvement Plan" (November 19, 2008)[2]. Therefore, the MAQIP's Section 8.4.1 ("Details of Control Measures and Strategies") is amended through this Supplement to include:

- A control measure that explicitly states the Port's support for drayage truck clean-up: "Support of CARB's Drayage Truck Regulation";
- Additional actions for some existing control measures, as proposed by the Interagency Group; and
- Additional detail on the current implementation schedule and approach for all control measures, where available, as provided by Port staff.

The MAQIP's Section 10.6.2 ("Port Funding Sources") is also amended through this Supplement to clarify the availability of Port funding.

Role of MAQIP Supplements

Proposed amendments (i.e., material changes) to the MAQIP plan itself, such as policy direction and new, revised or deleted control measures, are in the form of MAQIP Supplements, subject to Board consideration and approval.

As air quality programs and projects are further developed in support of the MAQIP's emissions reduction control measures, more details regarding timelines, implementation, emissions reduction benefits, resources, etc. will become available. Updates of this project-specific information will be provided to the Board and public periodically through status reports, as described in MAQIP Section 11.

Background

While the MAQIP is a master plan guiding the Port's long-term air quality strategy through 2020, it also includes more detailed components, such as the initiatives, programs and projects, that provide a roadmap for the Port to follow in achieving its 2020 health risk reduction goal. Two

[1] This MAQIP Supplement No. 1 reflects revisions made by the Board of Port Commissioners (Board) on April 7, 2009 when the MAQIP was approved, and reflects the Board's commitment of Port funds to a truck retrofit program on that date. All amendments included in this Supplement No. 1 are fully incorporated in the text of the Final MAQIP, as approved by the Board.
[2] MAQIP, Appendix K.

Sections in the MAQIP are amended through this Supplement: Section 8.4.1 and Section 10.6.2.

The control measures outlined in the MAQIP in Section 8.4.1 ("Details of Control Measures and Strategies"), as amended in this Supplement, represent the most effective opportunities for the Port to fulfill its three-fold emissions reduction strategy:

- Target emissions reductions earlier than required by regulations ("early actions")
- Support enforcement of regulations
- Target emissions reductions above and beyond those required by regulations.

This Supplement encompasses updates for the control measures in Section 8.4.1, based in part on the "Proposed Near-term Implementation Plan for Port of Oakland Maritime Air Quality Improvement Plan" (November 19, 2008)[3] proposed by some members of the MAQIP Interagency Group. The Interagency Group is comprised of representatives of the public agencies and elected officials that participated in the MAQIP development (CARB, EPA, BAAQMD, City of Oakland, Port of Oakland, Alameda County Public Health and Environmental Health Departments, Offices of Mayor Ron Dellums of Oakland and Alameda County Supervisors Nathan Miley and Keith Carson). The November 19, 2008 Interagency Group proposals that are not feasible, such as those recommending infeasible financing mechanisms, or measures that the Port cannot currently fund, such as incentive payments, are not included in this Supplement.

The MAQIP's Section 10.6.2 ("Port Funding Sources") is amended through this Supplement to clarify the availability of Port funding.

Amendments

The following sections replace the entire Section 8.4.1 and the entire Section 10.6.2, respectively, in the Revised Final MAQIP (April 2009). Amendments are shaded; additional levels of detail and schedule are not shaded.

[3] MAQIP, Appendix K.

Section 8.4.1: Details of Control Measures and Strategies

More detailed descriptions and target dates[1] of the Port's control measures and other strategies in the MAQIP's Table 8-2 are provided in this section. As specific air quality programs and projects are developed for these control measures, more details regarding timelines, implementation, emissions reduction benefits, resources, etc. will become available. Updates of this project-specific information will be provided to the Board and public periodically through status reports. Proposed amendments (i.e., material changes) to the MAQIP plan itself, including control measures and policy direction, will be in the form of Supplements, subject to Board consideration and approval.

In MAQIP Supplement No. 1 (April 7, 2009), an expanded measure was added to reiterate the Port's support of CARB's drayage truck regulation, in response to a recommendation by the MAQIP Interagency Group. Other actions proposed by the Interagency Group were added to some existing control measures, and additional detail on the current implementation schedule and approach was provided where available.

Early Action Retrofit and/or Replacement of Port Drayage Trucks

The Port will cooperate with BAAQMD and CARB in a program to retrofit port drayage trucks according to the following schedule:

By December 31, 2009: Retrofit model year 1994 through 2003 trucks with available BAAQMD and CARB grant funds and with Port funds. The BAAQMD may use some of the funds to target truck replacements (meeting 2007 engine standards). The Port will apply for grant funds, where feasible, in cooperation with the BAAQMD.

2009-2013: Promote early implementation of 2007/2010 truck engine standards.

Support of CARB's Drayage Truck Regulation

The Port is committed to an achievable plan for diesel truck clean-up that ensures that trucks serving the Port are in compliance with CARB regulations[2].

To implement the plan, the Port will: (i) pursue funding mechanisms and other programs (e.g., federal and state grants and loan assistance) to assist drayage truck owners, (ii) implement a truck registry, (iii) conduct outreach, and (iv) complete the CTMP as follows:

March 2009 – December 2013: Pursue funding programs to assist drayage trucker owners in retrofitting, repowering or replacing trucks to meet the drayage truck regulation deadlines for 2010 and 2014. A potential funding source that the Board may consider is a user fee.

May/June 2009: Present the final Comprehensive Truck Management Program (CTMP) report to the Maritime Committee of the Board and to the full Board for approval.

March 2009 – December 2009: In coordination with City of Oakland staff, investigate the potential to negotiate quantity purchase prices for new trucks (similar to efforts at the Ports of Los Angeles and Long Beach).

September 2009 – December 2009: Implement a truck registration process[3].

[1] Dates may be subject to change.
[2] See MAQIP, Appendix E for a description of the regulation.
[3] Truck registry and tracking are subject to availability of funding on the order of $4 million.

December 2009 – July 2010: Install truck tracking technology.

By December 31, 2009: Notify truck owners of upcoming regulatory requirements and the initial compliance deadline through an education campaign.

January 1, 2010: CARB drayage truck regulation (Phase 1) takes effect. The Port will support enforcement of the regulation.

January 1, 2014: CARB drayage truck regulation (Phase 2) takes effect.

Compliance with CARB's "Shore Power" Regulation

The Port will support and promote identification and development of future projects to assist regulated Port customers to comply with CARB's shore power regulation according to the following schedule of deadlines:

Ongoing: Meet with terminal operators and/or carriers to request their approaches to compliance with the shore power regulation.

By June 30, 2009: "Shore Power" Program to:

- Meet with terminal operators and/or carriers to share information about potential investments in infrastructure and/or equipment and otherwise prepare for compliance with the shore power regulation.
- Pursue early implementation of the regulation, subject to feasibility.
- Work with marine terminal operators, carriers, Pacific Gas and Electric and others, as necessary, to assign responsibilities and design plans for installation of shore power at marine terminals and modification of ships to accept that power.
- Port staff will report to the public and the Board on proposed funding sources for shore-side infrastructure, including State funds (directly or through the BAAQMD), a user fee, lease requirements, or other means.

By July 1, 2009: Terminal operators must submit terminal compliance plans to CARB, pursuant to the shore power regulation. Vessel owners also submit plans by this date, if not selecting the "Reduced On-Board Power Generation" compliance option (i.e. grid power)

January 1, 2010: CARB regulation in effect for Equivalent Emissions Reduction compliance option (non-grid power)

By December 2010: Design infrastructure[4]

2011 – 2013: Construct infrastructure for grid power option

January 1, 2014: CARB regulation in effect for Reduced On-Board Power Generation compliance option (grid power)

[4] The schedule and scope of shore power design and construction are subject to planning and feasibility analysis (underway). Preliminary estimate to construct grid power infrastructure for entire Port marine terminal area is $200 million.

Design and Operational Efficiencies

The Port and its tenants will design terminal layouts, security systems and other goods movement infrastructure so greater efficiencies can be achieved. Improvements in technology, yard layout, traffic patterns and gate configuration can result in faster cargo processing, with shorter waits for trucks in line or inside the terminal. Less waiting means less truck idling and reduced emissions. The Port will continue to negotiate with current and prospective tenants on incorporating improvements into projects.

Mid-2010: Report to the public and the Board on potential government and industry strategies to increase efficiency at sea, on Port property, and along transportation corridors. Collaborate with terminal operators, carriers and other ports on preparation of the report.

Participate in Pilot and Verification Projects for NOx and DPM Reduction Strategies

In partnership with its tenants and customers and with regulatory agencies, the Port will seek to participate in pilot and CARB verification projects to test equipment used in the maritime industry. The priority will be for projects targeted to NOx reduction, with a secondary emphasis on DPM reduction, since strategies to control NOx are not as well developed as those targeting DPM. The expected schedule is:

By July 1, 2009: Contact tenant and customer groups to inform them of the Port's interest in coordinating participation in pilot and equipment verification projects.

By July 1, 2009: Contact CARB, industry groups and other ports to solicit opportunities to participate in pilot and equipment verification projects.

Early Action Construction Emissions Reduction

The Port plans to continue its Early Action pilot program to reduce construction equipment emissions through available mechanisms, including financial incentives, if available, and by including the program in project specifications.

2008: Initiated Early Action construction emissions incentive program.

Support Enforcement of Regulations by CARB and BAAQMD through Coordination with Tenants

Through either informal or formal agreements, the Port will cooperate with CARB and BAAQMD in their enforcement of seaport-related emissions reduction regulations. Support will include coordination on protocols, tenant and customer group workshops, courtesy reminders to tenants and customers of reporting and other deadlines, and similar measures.

By April 1, 2009: Schedule a meeting with CARB and BAAQMD to discuss the nature of the assistance that is needed from the Port.

Accountability, Monitoring and Reporting

To ensure the Port's accountability on progress towards the MAQIP health risk and emissions reduction goals, to provide opportunities for community participation, and to communicate regularly with the Port's stakeholders, the Port will:

- Convene a maritime stakeholder group, which will serve as a forum for sharing the status of projects during development and execution and discussing issues associated with projects.
- Prepare a written status report to stakeholders on MAQIP projects at least annually.
- Present periodic air quality status reports to the Board of Port Commissioners or one of its committees; the reports will be made available to the community on the Port's website.
- Present MAQIP Supplements to the Board for consideration and approval, as needed, to incorporate amendments (i.e., material changes such as control measures and policy direction) to the MAQIP plan itself.
- Prepare periodic emissions inventories with health risk updates based on CARB's 2008 report.
- Continue to meet regularly with tenants and customers to educate them on air quality regulations and community concerns; request updates from tenants on their programs and projects to include in status reports.
- Continue to participate in agency-only discussions on air quality and health risk via an Interagency Group.
- Reconvene the MAQIP Task Force in five and ten years to review progress toward the plan's goals and reconsider strategies if they need modification.

Section 10.6.2: Port Funding Sources

Historically the Port's principal funding sources for maritime environmental improvement activities have been operational revenues and bond funding secured by such revenues. Because these revenue sources are insufficient to meet the needs of the MAQIP for the foreseeable future, the Port is evaluating new funding and financing mechanisms, including but not limited to user fees. A user fee could be used to fund key infrastructure and environmental projects and generate matching funds for Proposition 1B grants. It is important to note that because projects funded through a user fee may have to be financed on a pay-as-you-go basis, the timing of any fee collection may be directly related to the scope and pace of project implementation. The Port may not borrow to pay for facilities it does not own, such as trucks, but may borrow to pay for Port-owned electrical generation facilities[1].

[1] The Charter of the City of Oakland provides that the Port may finance Port facilities and issue revenue bonds for harbor, airport, property and equipment of the Port. See Sections 706(24) and 718(2).

The Maritime Air Quality Improvement Plan is also posted on the Port's Website: www.portofoakland.com

To order additional copies of the Port of Oakland Maritime Air Quality Improvement Plan,
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