



BAY AREA
AIR QUALITY
MANAGEMENT
DISTRICT

BOARD OF DIRECTORS
AD HOC COMMITTEE ON PORT EMISSIONS

COMMITTEE MEMBERS

NATE MILEY – CHAIRPERSON
TOM BATES
LIZ KNISS
TIM SMITH
GAYLE B. UILKEMA

JOHN GIOIA – VICE CHAIRPERSON
SCOTT HAGGERTY
MARK ROSS
PAMELA TORLIATT

MONDAY
NOVEMBER 17, 2008
9:30 A.M.

4TH FLOOR CONFERENCE ROOM
DISTRICT OFFICES

AGENDA

1. **CALL TO ORDER – ROLL CALL**
2. **PUBLIC COMMENT PERIOD** (*Public Comment on Non-Agenda Items Pursuant to Government Code § 54954.3*) Members of the public are afforded the opportunity to speak on any agenda item. All agendas for regular meetings are posted at District headquarters, 939 Ellis Street, San Francisco, CA, at least 72 hours in advance of a regular meeting. At the beginning of the regular meeting agenda, an opportunity is also provided for the public to speak on any subject within the Committee's subject matter jurisdiction. Speakers will be limited to three (3) minutes each.
3. **APPROVAL OF MINUTES OF JULY 2, 2008**
4. **OVERVIEW OF THE PORT OF OAKLAND MARITIME AIR QUALITY IMPROVEMENT PLAN (MAQIP)**
J. Roggenkamp/4646
jroggenkamp@baaqmd.gov
Staff will provide an overview of the Port of Oakland Maritime Air Quality Improvement Plan (MAQIP).
5. **GREEN PORTS INITIATIVE IMPLEMENTATION PLAN**
J. Broadbent/5052
jbroadbent@baaqmd.gov
The Committee will consider recommending Board of Directors approval to the accompanying "San Francisco Bay Area Green Ports Initiative – Program Description and Plan."
6. **DISCUSSION OF COMPREHENSIVE TRUCK MANAGEMENT PLAN**
J. Broadbent/5052
jbroadbent@baaqmd.gov
Staff will discuss developments regarding potential comprehensive truck management plan at the Port of Oakland.

7. **COMMITTEE MEMBER COMMENTS/OTHER BUSINESS**

Any member of the Committee, or its staff, on his or her own initiative or in response to questions posed by the public, may ask a question for clarification, make a brief announcement or report on his or her own activities, provide a reference to staff regarding factual information, request staff to report back at a subsequent meeting concerning any matter or take action to direct staff to place a matter of business on a future agenda. (Gov't Code § 54954.2).

8. **TIME AND PLACE OF NEXT MEETING - AT THE CALL OF THE CHAIR**

9. **ADJOURNMENT**

CONTACT EXECUTIVE OFFICE - 939 ELLIS STREET SAN FRANCISCO, CA 94109

(415) 749-5073
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BAAQMD homepage:
www.baaqmd.gov

- To submit written comments on an agenda item in advance of the meeting.
- To request, in advance of the meeting, to be placed on the list to testify on an agenda item.
- To request special accommodations for those persons with disabilities notification to the Clerk's Office should be given at least three working days prior to the date of the meeting so that arrangements can be made accordingly.
- Any writing relating to an open session item on this Agenda that is distributed to all, or a majority of all, members of the body to which this Agenda relates shall be made available at the District's offices at 939 Ellis Street, San Francisco, CA 94109, at the time such writing is made available to all, or a majority of all, members of that body. Such writing(s) may also be posted on the District's website (www.baaqmd.gov) at that time.

BAY AREA AIR QUALITY MANAGEMENT DISTRICT
939 ELLIS STREET, SAN FRANCISCO, CALIFORNIA 94109
(415) 771-6000

EXECUTIVE OFFICE:
MONTHLY CALENDAR OF DISTRICT MEETINGS

NOVEMBER 2008

<u>TYPE OF MEETING</u>	<u>DAY</u>	<u>DATE</u>	<u>TIME</u>	<u>ROOM</u>
Board of Directors Personnel Committee <i>(At the Call of the Chair)</i>	Thursday	13	10:45 a.m.	4 th Floor Conf. Room
Board of Directors Ad Hoc Cme. on Port Emissions <i>(At the Call of the Chair)</i>	Monday	17	9:30 a.m.	4 th Floor Conf. Room
Board of Directors Budget & Finance Committee <i>(Meets 4th Wednesday of each month)</i>	Wednesday	17	Immediately Following Ad Hoc Cme. on Port Emissions	4 th Floor Conf. Room
Board of Directors Regular Meeting <i>(Meets 1st & 3rd Wednesday of each Month)</i>	Wednesday	19	9:45 a.m.	Board Room
Board of Directors Mobile Source Committee <i>– (Meets 4th Thursday of each Month)</i>	Wednesday	19	Immediately Following Board Meeting	4 th Floor Conf. Room
Board of Directors Climate Protection Committee Meeting <i>(Meets 3rd Thursday Every Other Month) – TO BE RESCHEDULED</i>	Thursday	20	9:30 a.m.	4 th Floor Conf. Room
Board of Directors Legislative Committee <i>(Meets 4th Monday of the Month)</i>	Monday	24	9:30 a.m.	4 th Floor Conf. Room
Board of Directors Budget & Finance Committee <i>(Meets 4th Wednesday of each month)</i> - RESCHEDULED TO MONDAY, NOVEMBER 17, 2008	Wednesday	26	9:30 a.m.	4 th Floor Conf. Room

DECEMBER 2008

<u>TYPE OF MEETING</u>	<u>DAY</u>	<u>DATE</u>	<u>TIME</u>	<u>ROOM</u>
Advisory Council Technical Committee <i>(Meets 1st Monday of every even Month)</i> - CANCELLED	Monday	1	9:30 a.m.	Board Room
Board of Directors Climate Protection Committee Meeting <i>(Meets 3rd Thursday Every Other Month)</i>	Monday	1	9:30 a.m.	4 th Floor Conf. Room
Board of Directors Regular Meeting <i>(Meets 1st & 3rd Wednesday of each Month)</i>	Wednesday	3	9:45 a.m.	Board Room
Advisory Council Air Quality Planning Committee <i>(Meets 1st Thursday Even Month)</i>	Thursday	4	9:30 a.m.	Board Room
Advisory Council Public Health Committee <i>– (Meets 2nd Wednesday Even Month)</i> - CANCELLED	Wednesday	10	1:30 p.m.	Board Room

DECEMBER 2008

<u>TYPE OF MEETING</u>	<u>DAY</u>	<u>DATE</u>	<u>TIME</u>	<u>ROOM</u>
Board of Directors Stationary Source Committee <i>(Meets 3rd Monday Quarterly)</i>	Monday	15	9:30 a.m.	Board Room
Board of Directors Regular Meeting <i>(Meets 1st & 3rd Wednesday of each Month)</i>	Wednesday	17	9:45 a.m.	Board Room
Board of Directors Legislative Committee <i>(Meets 4th Monday of the Month)</i>	Monday	22	9:30 a.m.	4 th Floor Conf. Room
Board of Directors Budget & Finance Committee <i>(Meets 4th Wednesday of each month)</i> AT THE CALL OF THE CHAIR	Wednesday	24	9:30 a.m.	4 th Floor Conf. Room
Board of Directors Mobile Source Committee – <i>(Meets 4th Thursday of each Month)</i> TO BE RESCHEDULED	Thursday	25	9:30 a.m.	4 th Floor Conf. Room

JANUARY 2009

<u>TYPE OF MEETING</u>	<u>DAY</u>	<u>DATE</u>	<u>TIME</u>	<u>ROOM</u>
Board of Directors Public Outreach Committee <i>(Meets 1st Thursday every other Month)</i>	Thursday	1	9:30 a.m.	4 th Floor Conf. Room
Board of Directors Regular Meeting <i>(Meets 1st & 3rd Wednesday of each Month)</i>	Wednesday	7	9:45 a.m.	Board Room
Advisory Council Executive Committee Meeting <i>(Meets 2nd Wednesday Every Other Month)</i>	Wednesday	14	9:00 a.m.	Room 716
Advisory Council Regular Meeting <i>(Meets 2nd Wednesday Every Other Month)</i>	Wednesday	14	10:00 a.m.	Board Room
Board of Directors Regular Meeting <i>(Meets 1st & 3rd Wednesday of each Month)</i>	Wednesday	21	9:45 a.m.	Board Room
Board of Directors Mobile Source Committee – <i>(Meets 4th Thursday of each Month)</i>	Thursday	22	9:30 a.m.	4 th Floor Conf. Room
Board of Directors Legislative Committee <i>(Meets 4th Monday of the Month)</i>	Monday	26	9:30 a.m.	4 th Floor Conf. Room
Board of Directors Budget & Finance Committee <i>(Meets 4th Wednesday of each month)</i>	Wednesday	28	9:30 a.m.	4 th Floor Conf. Room

HL - 11/12/08 (11:15 a.m.)
P/Library/Forms/Calendar/Calendar/Moncal

BAY AREA AIR QUALITY MANAGEMENT DISTRICT

Memorandum

To: Chairperson Miley and Members
of the Ad Hoc Committee on Port Emissions

From: Jack P. Broadbent
Executive Officer/APCO

Date: October 30, 2008

Re: Ad Hoc Committee on Port Emissions Draft Minutes

RECOMMENDED ACTION:

Approve attached draft minutes of the Ad Hoc Committee on Port Emissions meeting of July 2, 2008.

DISCUSSION

Attached for your review and approval are the draft minutes of the July 2, 2008 Ad Hoc Committee on Port Emissions meeting.

Respectfully submitted,

Jack P. Broadbent
Executive Officer/APCO

Bay Area Air Quality Management District
939 Ellis Street
San Francisco, California 94109
(415) 749-5000

DRAFT MINUTES

Summary of Board of Directors
Meeting of the Ad Hoc Committee on Port Emissions
9:30 a.m., Thursday, July 2, 2008

1. **Call to Order – Roll Call:** Chairperson Nate Miley called the meeting to order at 9:42 a.m.

Present: Nate Miley, Chairperson, John Gioia, Vice Chairperson, Tom Bates, Scott Haggerty, Mark Ross, Tim Smith, Pamela Torliatt, Gayle B. Uilkema

Absent: Liz Kniss
2. **Public Comment Period:** There were none.
3. **Approval of Minutes of December 6, 2007:** Director Torliatt moved approval of the minutes, seconded by Director Ross; carried unanimously without objection.
4. **Update on the Bay Area Seaports Air Emissions Inventory:** *The Committee received an update on emission inventories being prepared for the ports of Benicia, Redwood City, Richmond, and San Francisco under a Memorandum of Agreement signed by the Air District, the Bay Planning Coalition, and the Ports.*

Assistant District Counsel Bill Guy provided an update on the Bay Area Seaports Air Emissions Inventory, stating greater geographical detail is needed locally to determine how emissions impact communities. The Port of Oakland completed the inventory which served as the basis for the Health Risk Assessment Inventory and the Bay Planning Coalition and the smaller ports other than Oakland have agreed that a similar level of detail is needed to assess approaches taken. He said an MOU was drafted and signed which sets up a Steering Committee with seats for the Air District and the five Ports. The work has been contracted out to two consulting firms and divided into four phases, with the cost of the initial phase being shared.

Mr. Guy reported that the consulting firms have come close to completing the first two phases and will meet again on July 10, 2008. The initial data confirms that there is a huge difference between the Port of Oakland and other ports, as it is much larger having 10 to 30 times larger vessels and 40 to 1000 times more truck trips.

Mr. Broadbent reported making good progress and results of the inventory work will be reviewed at the next meeting. He said many Ports have already undertaken work, the Committee today will receive a presentation on the Maritime Air Quality Improvement Plan (MAQIP) which is in response to the

inventory and is currently underway and another meeting will be scheduled at the end of the summer or early fall.

Committee Members and staff discussed funding and phases, timelines of the completed data collection, the distance to which emissions were measured, next steps which act as building blocks for additional efforts, establishment of baselines used in 2005 and the concentration on maritime activities versus airports.

5. **Discussion of California Goods Movement Bond Program:** *The Committee discussed and received an update on the Goods Movement Bond program.*

Grants Manager Damian Breen said in November 2006 California voters authorized the Legislature to appropriate \$1 billion in bond funding. The funding was to quickly reduce health risk from freight movement in California trade corridors and comprised of \$25 million in early grants and \$225 million in the main grant. On February 28, 2008, ARB allocated \$140 million for the Bay Area trade corridor and \$3.4 million in early grants to the Air District toward the electrical grid system and 75 truck retrofits with the Port of Oakland. On April 4, 2008, the District applied for the remainder of the \$35 million for the Bay Area Goods Movement corridor, and on May 22, 2008, ARB approved the District's plan to expend funding.

Mr. Breen said \$5 million has been set aside for Port of Oakland and additional funding for the retrofit of 1,000 trucks, which is a significant step toward air quality improvement. There are approximately 2,000 trucks and shorter haul trucks for which the retrofits will not work and those will be addressed in the second year of funding.

Mr. Breen responded to questions from the Committee regarding how I-Bond monies correlate to polluters, emissions and the West Oakland Health Risk Assessment, statewide funding, CARB certification, the cost of retrofitting trucks, short haul trucks and plug-in technology. Mr. Breen reported the Port of Oakland is seeking to raise container fees through adoption of an ordinance, a portion of which will be used for truck replacements/retrofits and Port projects, and the majority to be used toward electrical infrastructure.

Mr. Breen discussed next steps and upcoming workshops, stating that applications are due August 15, 2008. A total of 400 applications have been received to date which will be reviewed and ranked, and the Mobile Source Committee will meet in October.

Committee members discussed the number of applications received, funding for retrofitting, future consideration at the July 9th Mobile Source Committee meeting to secure a consultant to assist in outreach efforts, and new technology for short haul trucks and certification by the ARB. The Committee requested staff identify the amount of emissions removed from the air, by weighted and unweighted tonnage, as a result of the truck retrofit program.

6. **Status Report on Port of Oakland's Maritime Air Quality Improvement Plan (MAQIP)**
Mr. Richard Sinkoff, Director, Port Environmental Planning and Permitting, provided the Committee with a status report on the Port of Oakland's Maritime Air Quality Improvement Plan (MAQIP)

Mr. Sinkoff introduced Port staff present and responsible for working on the MAQIP, he presented the structure and framework by which they define their role(s) and help move projects toward implementation, and said efforts have been organized to be collaborative with the Air District, with the goal of improving the public's health status in the Bay area. Mr. Sinkoff stated that the Ports are working with CARB, environmental organizations and industry in a multi-stakeholder process, stating the program level establishes a policy basis for the plan. They are now identifying elements of the program which include truck retrofits, and he reported their Board had directed staff to prepare the analysis for a user fee to provide matching funds for the infrastructure, environmental projects and also to advance the Comprehensive Truck Management Program measures.

Committee members discussed impacted areas included within the plan, the Port's work in addressing diesel emissions which contributes to problem-solving at a larger regional level, the formation of an inter-agency group working collaboratively to support initiatives of the plan, the user fee structure and its provisions for Port infrastructure and environmental projects, ARB's regulatory scheme which does not address non-Port trucks, and similar goals yet to be established by working collaboratively together with health officials and various cities in their land use planning processes.

Mr. Sinkoff said as part of the Port's ongoing work, they will be continuing inter-agency work and are in conversations with MTC about supporting infrastructure funding. He hopes the work could serve as a model for a broader, regional approach. He discussed the Port being confined to its own jurisdiction and the complexity of being able to be integrated in other counties; however, he noted that the Air District's role is already regional in nature and all Ports will hopefully meet to discuss their individual local impacts.

Mr. Sinkoff then presented MAQIP Goals and 2020 Emissions Targets, regulations, initiatives, the Port's planning, organizing, implementation and monitoring/reporting efforts and identified partners of the program. He noted that the actual presentation was posted on the Port's website under the June 19th Task Force meeting and said next steps include a proposed timeline and taking the program to the Maritime Stakeholder Group in October.

Mr. Broadbent applauded the efforts of the Port and said it would be prudent for a resolution to ensure the Port adheres to its user fee discussion, which he said would be considered at the Board of Directors' July 30 meeting.

Committee members further discussed with staff the Port's budget, possible future grant funding for security-related projects at the Port, and the importance for the Port to meet with public health officials and city/county planning staffs to bridge concerns, which Mr. Broadbent said could be referred to the Board's Executive Committee.

Public Comments:

John Berge, Vice President, Pacific Merchant Shipping Association, spoke in support of the MAQIP process, believes the plan offers a road map in establishing policy direction, monitoring and measuring progress, and he discussed a House Resolution Bill which would lead toward support for pollution ratification, achieving reductions in PM and SO_x in addition to what is targeted by the State which also reduces NO_x emissions.

Ellen Jonck, Executive Director, Bay Planning Coalition, said she is honored to be part of the task force. Their industry caucus has been effective in moving forward advanced thinking on initiatives to meet and exceed emissions goals by 2020. She thanked the Air District and Port for their collective responsibilities and work.

6. **Committee Member Comments/Other Business:** There were none.
7. **Time and Place of Next Meeting:** At the Call of the Chair.
8. **Adjournment:** The meeting adjourned at 11:26 a.m.

/s/ Lisa Harper
Clerk of the Boards

BAY AREA AIR QUALITY MANAGEMENT DISTRICT
Memorandum

To: Chairperson Miley and Members of the
Ad Hoc Committee on Port Emissions

From: Jack P. Broadbent
Executive Officer/APCO

Date: November 6, 2008

Re: Overview of Port of Oakland Maritime Air Quality Improvement Plan

RECOMMENDED ACTION:

Informational report, receive and file.

BACKGROUND

The Port of Oakland established a Task Force to assist the Port in preparing a Maritime Air Quality Improvement Plan (MAQIP or Plan). The MAQIP Task Force has four co-chairs from the Port of Oakland, the West Oakland community, Port-related industry, and the Bay Area Air Quality Management District. The MAQIP is intended to be the Port's master plan for air quality goals and policies for seaport operations. The 35-member Task Force was convened in 2006 and included representatives of key community groups, government agencies, and port-related businesses.

Richard Sinkoff, the Port's Director of Environmental Planning and Programs gave an update on the Plan and the planning process at the Ad Hoc Committee's meeting on July 2, 2008.

DISCUSSION

The Port released the Final Maritime Air Quality Improvement Plan in October 2008 and held the final Task Force meeting on October 31, 2008. The Port intends to present the Plan to their Maritime Committee on November 20, 2008 and then to the Port Board of Commissioners for approval on December 2, 2008. Port staff has also indicated that they intend to present a user fee proposal to the Maritime Committee and the Port Board at the same meetings.

At the November 17th Ad Hoc Committee meeting, Air District staff will provide an update on the MAQIP and next steps.

BUDGET CONSIDERATION / FINANCIAL IMPACT:

None.

Respectfully submitted,

Jack P. Broadbent
Executive Officer/APCO

BAY AREA AIR QUALITY MANAGEMENT DISTRICT
Memorandum

To: Chairperson Miley and Members
of the Ad Hoc Committee on Port Emissions

From: Jack P. Broadbent
Executive Officer/APCO

Date: November 6, 2008

Re: Green Ports Initiative Implementation Plan

RECOMMENDED ACTION:

Consider a recommendation that the Board of Directors approve the accompanying “San Francisco Bay Area Green Ports Initiative – Program Description and Plan” and forward the recommendation and plan for approval by the Board of Directors.

BACKGROUND

The Ad Hoc Committee on Port Emissions and the Green Ports Initiative both had their origins in discussions at the Board of Directors retreat in Berkeley on January 17, 2007. Since that time, much has changed, and District staff is prepared to recommend a course of action that will best utilize District resources and staff to reduce emissions at San Francisco Bay Area ports. This memorandum briefly summarizes the background for the Green Ports Initiative, what has changed, and what staff is proposing in the accompanying Green Ports Initiative document.

At the Board of Directors retreat in January 2007, staff presented information from the District’s Community Air Risk Evaluation (CARE) program that showed high emissions of diesel particulate matter (PM) in West Oakland. Port-related activity was noted to contribute to diesel PM in these areas. District staff indicated that they were working with the California Air Resources Board (ARB) on a West Oakland Health Risk Assessment. Staff also indicated that progress in reducing emissions at the Port of Oakland appeared to lag efforts at the Ports of Los Angeles and Long Beach.

Out of the discussions came a decision to consider a regulatory approach, including grant funding to reduce toxic emissions. In addition, Mark Ross, the Board Chairperson at the time, announced the formation of this Committee to examine approaches to reducing emissions at the ports.

At the time of the Board retreat, substantial regulatory work had long been underway at ARB, but little of this had surfaced. Now, almost two years later, ARB has adopted extensive regulations that cover every source of significance at ports. These regulations will produce very large reductions in emissions and risk at ports. The Green Ports Initiative document discusses this background in detail.

Also since the Board retreat, extensive funding for emission reduction activities at the ports has become available to the Air District through ARB's Proposition 1B Goods Movement Emission Reduction Program.

With these two primary pillars – ARB regulations and Proposition 1B grant funding – the Air District is now in a position to implement the program envisioned by the Board in January 2007, albeit through reliance on ARB regulations rather than Air District regulations.

DISCUSSION

The proposed Green Ports Initiative, as discussed in the accompanying document, “San Francisco Green Ports Initiative – Program Description and Plan,” includes three primary components:

1. Enforcement of California Air Resources Board regulations on port mobile sources;
2. Grants for earlier or greater emission reductions than required by regulations; and
3. Targeting and evaluation of emission reduction efforts through inventories, monitoring, and outreach.

For each component, considerable activity is already underway within other District programs. For example, Air District staff has already begun discussing joint enforcement efforts with ARB. In addition, as the Members of the Committee are aware, the Air District has already accepted applications to retrofit trucks serving the Port of Oakland with diesel PM filters. Through Planning Division programs, District staff has been working on inventories for Bay Area ports other than Oakland, on ambient air monitoring in West Oakland, and on refinements to the West Oakland Health Risk Assessment.

The ARB regulations provide a strong regulatory base for Air District action to reduce emissions at Bay Area ports. The ARB regulations are expected to produce statewide emission reductions of from 66% to 86% from port diesel PM sources. How the ARB regulations will affect emissions at any particular port depends upon the mix of sources at the port. For the Port of Oakland, the ARB regulations are expected to reduce diesel PM emissions by 65% in 2012 and by 81% in 2020 relative to base year 2005.

Enforcement of the ARB regulations is crucial to the success of the effort to reducing diesel PM emissions at ports. The regulations themselves are ambitious: ARB is attempting to accomplish in as little as three years for some sources, emission reductions of a magnitude that, for automobiles, took over a decade. The Air District has a fundamental role to play because state law gives the Air District authority to enforce the ARB regulations.

The additional grant funding available for port diesel PM sources comes at a time when opportunities for reductions beyond those required by regulation are fast diminishing. This is simply a consequence of the aggressive regulatory program, but it will require prompt action by the Air District.

The Air District staff recommends adoption of the Green Ports Initiative program as described in the accompanying document.

BUDGET CONSIDERATION / FINANCIAL IMPACT:

Much of the activity to implement the Green Ports Initiative has already been budgeted for and is already being carried out through existing initiatives. In particular, the inventory for Bay Area ports other than Oakland was already included in the Planning Division budget for FY2008/2009. Current port enforcement activity is already included in the Compliance and Enforcement Division budget. Grant activities are also already budgeted. There may be future needs for additional enforcement resources for port enforcement work, which would be included in future budget proposals.

Respectfully submitted,

Jack P. Broadbent
Executive Director/APCO



BAY AREA
AIR QUALITY
MANAGEMENT
DISTRICT

San Francisco Bay Area Green Ports Initiative
Program Description and Plan
(November 2008)

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I. Introduction

The Green Ports Initiative is a program of the Bay Area Air Quality Management District intended to reduce air pollution from trucks, ships, and other equipment associated with Bay Area port operations. The program has three primary components:

1. Enforcement of California Air Resources Board (ARB) regulations on port mobile sources;
2. Grants for earlier or greater emission reductions than required by regulations; and
3. Targeting and evaluation of emission reduction efforts through inventories, monitoring, and outreach.

The primary focus of the program is to reduce emissions of diesel particulate matter (PM) and thereby reduce the health impacts of port operations on surrounding communities. In producing local reductions of diesel PM, the program will also reduce total regional PM emissions. In addition, it will reduce emissions of other two regional pollutants, nitrogen oxides (NOx) and sulfur dioxide (SO₂). This document describes the Green Ports Initiative, explains the

background for the initiative, and serves as the plan for implementation. This document is a significant revision to an April 2007 version of the document.

The revised Green Ports Initiative takes advantage of the ARB regulatory structure now in place. In April 2007, before the adoption of most of the ARB regulations, the Green Ports Initiative was proposed as a regulatory initiative that would require ports to develop emission inventories and plans to achieve emission reduction goals but would not require emission reductions. However, emission inventories are underway or completed, and ARB regulations establish enforceable requirements rather than goals, thereby making District regulation unnecessary. As a result, the updated Green Ports Initiative focuses on achieving emission reductions under the ARB regulations while funding additional or earlier emission reductions through Air District grant programs.

The Green Ports Initiative is aimed at the five Bay Area commercial seaports and is not intended to address emissions from other maritime or goods movement pollution sources. This focus is a consequence of the potential at the five ports for significant diesel PM emissions from ships and trucks all operating in close proximity to neighborhoods. Though maritime activities not directly associated with the five ports contribute to regional emissions of PM and NOx, these activities have less potential for direct health impacts and are, in any case, addressed by the ARB regulations.

II. Background

The backdrop to the Green Ports Initiative is a decade of activity that began with the identification of diesel PM as a toxic air contaminant. This action led ultimately to a comprehensive and complicated structure of port air pollution regulation, to many and varied efforts by community and environmental groups to push ports to address community concerns, to port programs to address those concerns, and to various Air District efforts at the ports.

A. What are the impacts of diesel PM at ports?

The Green Ports Initiative is intended to reduce diesel PM health risks associated with port operations. Although the exact magnitude of the additional risk posed by port operations cannot be known precisely or directly measured, risk can be estimated using health risk assessment techniques.

Risk assessment involves the use of computer models to simulate real-world exposures to pollutants and to calculate estimated risks based on those exposures. Three primary types of variables have major impacts on the estimated risk: (1) the location and magnitude of diesel PM emissions, (2) the local meteorological conditions that determine how the diesel PM emissions are dispersed, and (3) the length of time of exposure. Risk assessment models calculate the predicted concentration of diesel PM for each point on the map of a study area. Using a cancer potency factor that correlates cancer risk with the amount of diesel PM inhaled, a model can then assign cancer risk to each point within the study area. Cancer risk is generally based on 70 years

of continuous exposure at that point. Non-cancer risks can be assessed by using predicted concentrations of diesel PM and correlations between PM levels and non-cancer health effects.

ARB has conducted a health risk assessment (HRA) to examine the health risks associated with diesel PM emissions from activities in West Oakland¹. The West Oakland study included sources of diesel PM associated with each of three groupings of activities. Emissions from trucks, ships, and other activities at the Port of Oakland were grouped as Part 1. Diesel PM emissions associated with the Union Pacific rail yard were grouped as Part 2. Part 3 included diesel PM emissions from other sources in or near West Oakland, including ships and trucks not associated with the Port of Oakland.

Key findings from the West Oakland HRA are:

- The areas of highest cancer risk (approximately 1500 in a million²) are on Port of Oakland property and along the freeways to the north (I-580) and east (I-980) of West Oakland;
- The average estimated lifetime cancer risk from diesel PM exposure in West Oakland is approximately 1180 in a million;
- Of this total average cancer risk of 1180 in a million, approximately 16% of the risk is attributable to Port of Oakland activities, 3% is attributable to the Union Pacific rail yard, and 81% is attributable to non-port/non-rail yard activities (chiefly diesel trucks on freeways);
- When cancer risk is apportioned to source categories, approximately 71% of total risk comes from trucks (port and non-port taken together), 20% comes from ships and harbor craft, 5% comes from locomotives, and 4% comes from cargo handling equipment;
- Estimated annual non-cancer health effects include 18 premature deaths, 8 hospital admissions for respiratory or cardiovascular causes, and 290 asthma or other lower respiratory symptoms.

Of particular note is the extent to which risks from on-road trucks dominate cancer risk in West Oakland. In the HRA, ARB indicated that there is some uncertainty about the total risk attributable to trucks and about the portion of that risk attributable to port activities³. However, this uncertainty will be of less importance in the future as ARB has already adopted regulations on port trucks and is expected to adopt additional regulations on all other trucks in early 2009. Both regulations will require trucks to have approximately 85% lower diesel PM emissions. Port trucks will have to clean up by 2010, while other commercial trucks will probably have until 2014.

¹ Draft "Diesel Particulate Matter Health Risk Assessment for the West Oakland Community Preliminary Summary of Results" dated March 19, 2008 (ARB, 2008).

² This means that, in a population of 1 million, you would expect 1500 additional persons to get cancer from breathing diesel PM at the expected concentration over a 70-year lifetime. The average lifetime risk of cancer from all causes is approximately 200,000 in a million to 250,000 in a million.

³ The Air District is working with West Oakland community groups to perform more detailed truck counts in an effort to refine these estimates. See discussion under "Air District Port Activities."

In developing emission reduction strategies for Bay Area ports other than Oakland, the Air District will be able to draw on insights gained from the West Oakland HRA. For example, it should be possible to roughly approximate the expected risks of some activities at other ports by comparing activity characteristics (e.g., nature and number of sources, upwind/downwind relationships of receptors and sources, and proximity of receptors to sources) to those for similar activities in West Oakland. The ARB regulations will produce substantial emission reductions for all Bay Area ports, and rough risk approximations may be sufficient to allow the Air District to target supplementary enforcement activities and grant efforts.

B. What are the ARB regulations and why are they important?

The Green Ports Initiative is intended to continue and supplement efforts by ARB that began in 1998 when ARB identified diesel PM as a toxic air contaminant. After identifying diesel PM as a TAC, ARB conducted an assessment of the need for regulation pursuant to Health and Safety Code sections 39658, 39665, and 39666. In 2000, ARB completed this assessment and adopted a *Risk Reduction Plan to Reduce Particulate Matter Emissions from Diesel-Fueled Engines and Vehicles*. The plan included recommendations for the development of control measures for diesel sources. It also established a goal of reducing by 2020 California's diesel PM emissions and associated cancer risks by 85% from 2000 levels.

Because much of the activity at large ports relies on diesel equipment, ports have been a particular focus of ARB diesel PM regulatory activities. To guide these activities, ARB adopted its *Emission Reduction Plan for the Ports and Goods Movement in California* in April 2006. The plan identified strategies for reducing emissions of diesel PM and other pollutants created by the movement of goods through California ports and was part of the broader Goods Movement Action Plan being jointly carried out by the California Environmental Protection Agency and the Business, Transportation, and Housing Agency.

Beginning in late 2005, ARB began adopting regulations on port equipment responsible for diesel PM emissions. By the end of 2007, ARB had adopted stringent regulations on all significant sources at ports. Although enforcement of an ARB rule on ship auxiliary engines adopted in 2005 was enjoined by the U.S. Court of Appeals for the Ninth Circuit, ARB adopted a replacement rule in 2008 that applies to both auxiliary engines and propulsion engines and was drafted to avoid the federal preemption issue that led the court to enjoin enforcement of the earlier rule. Appendix A shows the ARB regulations adopted to date along with a summary of the primary requirements of each regulation.

The ARB regulations will produce large emission reductions, assuming full compliance with the regulations. The table on the next page shows the statewide diesel PM emission reductions expected for each category of sources affected by the ARB regulations.

Statewide Emission Reductions from ARB Regulations

Source Category	Expected Statewide Diesel PM Reductions
Cargo Handling Equipment	40% by 2010 66% by 2015
Commercial Harbor Craft	50% by 2015 70% by 2020
Port Drayage Trucks	86% by 2010
Ships at Berth (Shore Power)	50% by 2014 75% by 2020
Ships at Berth / Underway (Fuel Sulfur Limits)	74% by 2009 83% by 2012

Notes

- Emission reductions estimates are from the ARB staff report prepared for the public hearing on the regulation.
- The reduction estimates for the two ship emission measures are not additive; shore power requirements are expected to further reduce in-port emissions beyond the amounts shown for the fuel sulfur limits, but the interaction of the two rules is complex. The current shore power regulation is applicable to container and cruise ships that visit the Ports of Oakland and San Francisco. ARB staff is expected to propose requirements for other ocean-going vessels in 2009.

Though the focus of the ARB regulations is on reducing diesel PM emissions, the rules are also expected to reduce emissions of two regional pollutants, NO_x and SO₂. For cargo handling equipment, commercial harbor craft, port trucks, and ships at berth, statewide NO_x emissions will be reduced by roughly 50% to 75% by the last compliance date shown in the table above. In addition, emissions of SO₂ by ships using low-sulfur fuel at berth or underway will be reduced by 95%.

How the ARB regulations will affect emissions at any particular port depends upon the mix of sources at the port. A detailed port emissions inventory will permit relatively precise estimates of future emission reductions, although reasonable estimates are possible using a less detailed inventory, particularly for smaller ports with fewer sources and less activity. For the Port of Oakland, a comprehensive inventory has been completed, and inventory projections show that the ARB regulations will reduce diesel PM emissions by 65% in 2012 and by 81% in 2020 relative to base year 2005.

State law gives air districts authority to enforce the ARB regulations. In adopting each of its port regulations (see Appendix A), ARB cited its authority over toxic substances in California Health and Safety Code sections 39650 through 39667. Under Section 39666, air districts are required to enforce all air toxic control measures or, for non-vehicular sources subject to air district

jurisdiction, adopt and enforce equally stringent or more stringent air district requirements. In addition, Health and Safety Code section 42403 gives any attorney for an air district authority to bring an action to recover penalties for violations of ARB rules or of air district rules.

C. Which ports would be subject to the Green Ports Initiative?

There are five ports of significance in the San Francisco Bay Area: Benicia, Oakland, Redwood City, Richmond, and San Francisco. How each port is addressed under the Green Ports Initiative will depend upon two primary factors: (1) the activity levels of sources of diesel PM, and (2) whether those activity levels are likely to impose significant risk on the surrounding community. Where port activities are likely to impose significant risk, the appropriate strategy will be determined by a number of factors, including:

- The manner in which ARB regulations affect the port’s activities;
- What particular types of enforcement efforts would be productive;
- Whether there are significant opportunities to reduce emissions through grant activities;
- What types of opportunities exist to work with the community; and
- What means exist to monitor progress.

Given the unique circumstances of each port, activities under the Green Ports Initiative will be different for each. A basic overview for each of the five Bay Area ports is provided in Appendix B.

Levels of activity vary significantly from port to port. The table on the next page provides 2005 ship and truck trip data for each of the Bay Area ports and, for comparison, for the Ports of Los Angeles and Long Beach

2005 Port Activity Data

Port	Ocean Going Vessel Arrivals	Truck Trips
Benicia	63	2,660
Oakland	1916	2.6 million
Redwood City	167	60,000
Richmond	103	6,000
San Francisco	179	n/a
Long Beach	3166	4.3 million
Los Angeles	2341	5.7 million

Notes

- Data derived from 2005 inventories prepared or being prepared for each port
- 2005 truck data not available for San Francisco
- Richmond data is only for the public terminals at the port

D. What have ports been doing about air pollution?

As information about the health risks from diesel PM became widely known, each of the large ports in California came under scrutiny from community and environmental groups, from local politicians and the Legislature, and from regulators. In response, the large ports began efforts to assess the problems and develop solutions at the same time that ARB was acting to adopt regulations.

In November 2006, the Ports of Los Angeles and Long Beach jointly adopted an action plan, called the San Pedro Bay Clean Air Action Plan, to reduce each port's emissions by 45% to 50% by the end of 2011. The plan predated most of the ARB port regulations and set forth proposed actions that in most respects are mirrored in requirements now found in ARB regulations.

A central element of the plan is a Clean Trucks Program. Both ports have implemented the program by adopting orders requiring port terminal operators to prohibit access to trucks not operating under a concession agreement with the port. The primary difference between the concession agreements at the two ports is that the Port of Los Angeles requires that motor carriers transition away from independent contractor drivers and instead use drivers who are employees of the motor carrier. This requirement is intended to address the concern that many independent contractor drivers lack the financial resources to purchase new trucks or retrofits to comply with Clean Trucks Program requirements. This requirement is currently the focus of a federal lawsuit filed by the American Trucking Association.

The Port of Oakland has also followed, albeit with a later start, the planning path opened by the Ports of Los Angeles and Long Beach. In March 2008, the Port released an emissions inventory that was used by the California Air Resources Board in preparing its West Oakland HRA. Then, in June 2008, the Port of Oakland proposed its draft Maritime Air Quality Improvement Plan (MAQIP), which it hopes to finalize by late 2008. The Port has also been working on a Comprehensive Truck Management Program as one step in implementing the MAQIP. Bay Area community and environmental groups are seeking to have the Port adopt concession requirements similar to those adopted by the Port of Los Angeles.

More detailed descriptions of these activities are found in Appendix C.

E. What has the Air District been doing about air pollution at ports?

The Air District has been working with ports, operators of port equipment, community groups, and technology companies through its planning, grant making, and enforcement programs in order to understand emissions, enforce existing laws and regulations, promote new technologies, and otherwise assist efforts to reduce diesel PM emissions at the ports.

CARE

In 2004, the Air District began its Community Air Risk Evaluation (CARE) program to evaluate and reduce the impacts of toxic air contaminants on Bay Area communities. Through inventory efforts, the program identified diesel PM as responsible for over 80% of the cancer risk-weighted

emissions of toxics in the Bay Area. From the inventory, the Air District developed a series of Bay Area maps showing risk-weighted emissions. The maps showed that areas of highest emissions tended to be associated with freeways and freeway intersections. West Oakland and the northeastern portion of San Francisco were the two areas with highest risk-weighted emissions.

In a second phase of the program, the Air District is performing regional-scale and local-scale modeling to determine what sources of diesel PM and TAC emissions dominate risk-weighted emissions. In one of these efforts, the Air District partnered with the California Air Resources Board (CARB), Port of Oakland, and the Union Pacific Railroad to develop the West Oakland HRA discussed above.

In an effort that grows out of the West Oakland HRA, the Air District is partnering with Pacific Institute and the West Oakland Environmental Indicators Project to conduct a comprehensive traffic count survey, to be carried out in summer and fall of 2008. The objective of the study is to refine the truck data used in the HRA by gathering additional truck location and idling time data and by improving the allocation of trucks to port or non-port service. The results of this effort may allow some refinement of the West Oakland HRA.

Based on these technical analyses, the Air District has developed the CARE Mitigation Action Plan, which focuses risk reduction efforts in the communities most impacted by toxic air contaminants. Mitigation activities in these communities include focusing grants and incentives, community outreach, land use guidance, collaboration with local health departments, and the Green Ports Initiative. Three of the six communities identified in the CARE Mitigation Action Plan – West Oakland, Eastern San Francisco, and Richmond – include ports addressed in the Green Ports Initiative.

Port of Oakland MAQIP

Since early 2007, the Air District's Executive Officer has participated as a co-chair of the task force helping the Port of Oakland develop its Maritime Air Quality Improvement Plan (MAQIP). District staff have attended all MAQIP task force meetings.

Grants

Over the past 10 years the District has been involved, through its incentive programs, in the aggressive reduction of emissions from maritime-related activities at all Bay Area ports. This work has largely centered on the reduction of diesel PM from shipping and working vessels and from on-road trucks. Funding for this effort has come from ARB's Carl Moyer Program and its California Goods Movement Bond program and from the District's Mobile Source Incentive Fund (MSIF) and Transportation Fund for Clean Air (TFCA). By the end of 2009, these programs will have provided:

- \$15 million in funding to replace or repower the engines of harbor craft (ferries, tugboats, workboats and fishing vessels);
- \$12 million in funding to replace, retrofit or repower port drayage trucks; and

- \$4 million to provide grid-based shore power for ocean-going ships at the Port of Oakland (Eagle Marine Terminal) and the Port of San Francisco (Princess Cruise Lines).

It is estimated that these funds will replace over 1,200 diesel engines operating at Bay Area ports resulting in diesel PM emission reductions of 150 tons over the lifetimes of these projects. In fiscal year 2009 to 2010, the District intends to make up to another \$20 million available to replace port drayage trucks in advance of the ARB regulatory deadline, with other funds being allotted for more shore power and harbor craft projects based on demand.

Enforcement

Since 2003, Air District enforcement staff have been enforcing Health and Safety Code section 40720, which restricts idling by port trucks outside terminal gates at the Port of Oakland, the only port in the Bay Area to which the restrictions apply. These restrictions were added to state law in 2002 by AB 2650, authored by Alan Lowenthal, now a State Senator, whose district includes Long Beach.

As part of its effort to enforce the AB 2650 idling restrictions, the Air District began regular meetings with port truckers in 2003. That effort has evolved into a Port of Oakland Trucker's Working Group that meets monthly, generally at the Port of Oakland offices, to discuss a wide range of topics. District staff continue to participate in all meetings of the group.

Air District enforcement staff will also begin enforcing ARB's truck idling regulations that limit idling to 5 minutes throughout California, but exempt idling when queuing, unless it is within 100 feet of a residence. This regulation is expected to reduce idling by port trucks in areas away from terminal gates. ARB and District staff have been working together on this effort, and ARB staff trained Air District inspectors regarding idling enforcement in October 2008.

In September 2008, the Air District also began discussions with ARB regarding enforcement of the ARB regulations on port mobile sources, including the regulations on port drayage trucks, marine vessel fuel sulfur, shore power, cargo handling equipment, and harbor craft. The two agencies expect to reach agreements on how responsibilities will be shared in enforcing the regulations.

Inventories

In early 2007, Air District staff began discussions with the Bay Planning Coalition (BPC) and the five Bay Area ports in an effort to prepare inventories for the ports of Benicia, Redwood City, Richmond, and San Francisco. These discussions led to an agreement signed by the Air District, BPC, and the ports laying out a plan for completing inventories.

Under the agreement, the work is directed by a steering committee composed of representatives from each of the ports and from the Air District. As with the inventory prepared by the Port of Oakland, the initial inventories will rely on 2005 data. The ports and the Air District have jointly funded the compilation of port activity data required to begin inventory calculations. The result will be a baseline 2005 inventory for each Bay Area port that the Air District can use to prioritize

enforcement, grant making, and other activities and that the port can use to measure progress in reducing emissions. As of fall 2008, activity data has been collected for each port and inventory calculation work has begun.

III. Green Ports Initiative – Program Components

The Green Ports Initiative includes three primary program components:

1. Enforcement of California Air Resources Board regulations on port mobile sources;
2. Grants for earlier or greater emission reductions than required by regulations; and
3. Targeting and evaluation of emission reduction efforts through inventories, monitoring, and outreach.

Each program component is discussed in greater detail below.

A. Enforcement of ARB Regulations

The regulatory effort to reduce diesel PM health risks from ports is ambitious. It took the State of California approximately a decade to reduce automobile emissions by 85% and two decades to reduce them by 95%⁴. ARB is now attempting to achieve similar reductions from port sources in, depending upon the source, between 3 years and 12 years. One result of the regulations will be major changes in the way ports are operated. The Air District will work with ARB to coordinate the extensive enforcement activities that will be necessary to ensure a smooth transition to new ways of doing business at the ports. In addition to providing inspection resources, the Air District expects to bring to bear its knowledge and experience from enforcing truck idling restrictions at the Port of Oakland.

Enforcing the ARB mobile source regulations will bring new challenges to the Air District. The District has traditionally regulated stationary sources with fixed addresses and with ownership and operating structures that are generally relatively easy to determine. The ARB regulations, however, affect a disparate array of diesel PM sources owned by many different types of entities that the District has not regulated in the past. For example, cargo handling equipment may be owned by a port or some other entity and leased to terminals or it may be owned by a terminal operator. Marine vessel ownership and operating structures are even more complex: a vessel may be owned by a single-vessel holding company that is controlled by a shipping company, but it may be chartered by another company, operated by a ship management company, and represented by different agents for each port it visits. Port trucking operations are also complicated. A port may be served by hundreds of motor carriers who dispatch from a fleet of thousands of trucks owned by individual owner/operators.

The regulations will also bring new challenges to ARB. Although ARB has long regulated mobile sources, much of this experience has involved ensuring compliance with automobile

⁴ In 1964, the California Motor Vehicle Control Board set hydrocarbon tailpipe standards for 1966 vehicles at 6.3 grams per mile. It took a decade to reduce the standard by 85% and two decades to reduce it by 95%. California's current tailpipe standards are approximately 99% below the 1966 standard.

emission standards at the manufacturer level. ARB has less experience verifying compliance in the field. This effort will require ARB to put more staff in the field and will almost certainly require ARB to work with each air district having one or more ports within its jurisdiction.

In working with ARB on this enforcement effort, the Air District will (1) seek to reach general agreement with ARB regarding how the two agencies will work together, (2) establish Air District enforcement priorities by port and by equipment category based on emissions or health risk from that equipment, (3) work with ARB to develop specific protocols or agreements to guide enforcement for each specific regulation/source category, (4) work with ports to develop compliance agreements for ARB regulations, and (5) monitor compliance efforts and provide reports to the Board of Directors as requested. Each of these components is discussed in greater detail below.

General Agreement with ARB Regarding Enforcement

As noted in the discussion of the ARB regulations, state law gives air districts authority to enforce the regulations. However, the regulations vary in the extent to which they address enforcement issues. For example, some of the rules grant ARB a right of access to facilities affected by the regulation but do not specifically grant such access to air districts. The regulations are silent regarding issues that frequently arise when agencies work together: how are inspection priorities established, do the agencies perform inspections jointly or individually, who files court actions when they become necessary, and how are penalties divided. The Air District will work with ARB to resolve these kinds of issues and, where appropriate, develop any necessary enforcement or delegation agreements. Air District staff met with ARB staff in Sacramento in September 2008 to begin this effort.

Establishing Enforcement Priorities

In working to enforce the ARB regulations, the Air District will prioritize its efforts at Bay Area ports based on the overall level of emissions or health risk associated with each port and, for a particular port, the significance of a particular source category (ships, trucks, harbor craft, or other equipment) as determined from a port inventory or risk assessment.

Developing Inspection Protocols by Source Category or Regulation

The ARB regulations vary widely in structure, content, and requirements. Each regulation will require a different enforcement approach. ARB has begun developing inspection protocols for trucks in order to enforce its truck idling regulation. In October 2008, ARB trained District staff to perform inspections under the rule. Although the idling rule is not specifically a port regulation, it should help establish a working relationship for performing the types of mobile source inspections required to enforce the port regulations. ARB will be developing inspection protocols for all of its port regulations. The Air District will seek to provide comments and work with ARB in developing these protocols.

Compliance Agreements with Ports

All of the port regulations raise issues regarding port access, given federal port security requirements. ARB has discussed these issues with some ports and is starting to work out arrangements to permit port access for inspections.

The Air District will discuss with both ARB and the Bay Area ports the potential for broader agreements that cover more than simply port access. Inspections have some potential to disrupt port business, and the ports therefore have an interest in taking steps to make sure that sources are available for inspection in a manner consistent with the conduct of port business. For example, the Air District and ARB will be conducting inspections of trucks for compliance with the port drayage trucks regulation. Ports may be able to minimize the impact of inspections on port business by establishing truck entry routes, inspection gates, and other mechanisms. These arrangements would then be embodied in a compliance agreement. A compliance agreement might also provide for compliance assistance from the Air District and ARB.

Compliance Monitoring and Reporting

As with all of its enforcement work, the Air District will record and retain compliance information and will be able to provide the Board of Directors with status reports.

B. Grants

As discussed above, the Air District grant programs have already funded significant diesel PM reductions at the Port of Oakland and at other ports. Grants for emission reductions from port equipment will continue to be available to produce earlier or greater emission reductions than required by the ARB regulations. This is a carrot-and-stick approach, with the ARB regulations compelling reductions, and the grant programs offering incentives to move sooner or farther.

Regulations and grants have always been connected through requirements that emission reductions funded by grants be “surplus” to those required by regulation. With the emergence of ARB’s comprehensive port regulations, finding opportunities for “surplus” emission reductions has become more difficult. However, there remain significant windows of opportunity in the near term for the Air District to fund various types of emission reductions. The activities funded by grants must produce “surplus” emission reductions and must comply with guidelines for the ARB programs through which funds come to the Air District. The table on the next page sets forth funding opportunities.

Grant Opportunities by Source Category

Source Category	Grant Opportunities
Cargo Handling Equipment	Limited opportunities to replace or repower some equipment, primarily before 2010
Commercial Harbor Craft	Engine repowers and replacements for Tier 0 engines at least 2 years in advance of regulatory requirements (with applicability dates determined by vessel-specific information)
Port Trucks ¹	Installation of filters: until 6/30/09 Engine replacement w/ 2007 engines: until 12/31/11 ² Purchase of trucks w/ 2007 engines: until 12/31/11
Ships at Berth (Shore Power)	Shore power \geq 25% of ship visits: until 12/31/13 Shore power for \geq 60% of ship visits: until 12/31/16 Shore power for \geq 70% of ship visits: until 12/31/19 Shore power for \geq 90% s of ship visits: 2020 and beyond

Notes

¹ ARB's on-road trucks regulation, which is before the Air Resources Board for adoption on 12/11/08, will add filter retrofit requirements for MY 2004-2006 drayage trucks. There will be additional grant opportunities for installation of filters on these trucks, with dates that depend upon compliance dates in the adopted regulation.

² This is the date for independent owner/operators. The deadline for fleets is 12/31/10.

During fiscal year 2009 to 2010, Air District staff expect to make approximately \$20 million in grant funding available to fund port drayage truck retrofits. In subsequent fiscal years, grant fund availability is difficult to predict and will depend, in part, on the state of the economy, which significantly affects state revenues.

C. Targeting and Evaluation of Emission Reduction Efforts

Ultimately, the progress of the Green Ports Initiative must be measured in the neighborhoods around the ports and particularly in West Oakland, where port impacts are almost certainly much greater than in any other Bay Area community. There are three components to the targeting and evaluation effort: (1) completion of inventories for each of the five Bay Area ports, (2) ambient air monitoring in West Oakland, and (3) dialog between Air District staff and community groups to discuss Green Ports Initiative efforts. The Air District staff will strive to involve the community in all aspects of the initiative.

Emission Inventories

In March 2008, the Port of Oakland completed its 2005 baseline emissions inventory. In the MAQIP, the Port indicated that it would update the inventory on a two or three year cycle beginning with a 2008 inventory.

Air District staff are currently working with the Bay Planning Coalition (BPC) and the ports of Benicia, Redwood City, Richmond, and San Francisco to prepare 2005 baseline inventories. The work is being carried out under a contract between BPC and the consulting firms of Moffatt & Nichol and ENVIRON International Corp. Both firms have extensive backgrounds in port work. The Air District expects to supplement the Bay Area Seaports Emission Inventory with information regarding significant emission sources not covered in the inventory but located on or near port property.

Emission inventories will be used both to target Air District resources and to assess progress. The Port of Oakland inventory and the West Oakland HRA have already revealed much about diesel PM emissions and health risk in that community. The primary conclusions appear to be:

1. A few types of sources (trucks primarily, but also ships at berth) dominate emissions and risk;
2. Reducing emissions from those sources would be the most productive means of reducing overall emissions and risk;
3. Because ARB has already imposed regulations on those sources, ensuring compliance with the regulations should be the highest priority; and
4. Grants should be focused on those sources.

Given preliminary information about the other Bay Area ports, it is likely that the inventories will not show emissions that warrant the same level of concern as for the Port of Oakland. But the same conclusions are likely to apply. With the inventory results, District staff will be able to analyze the options for reducing emissions at each port and, in consultation with community and environmental groups, pick enforcement and grant-making options that most productively use Air District resources.

Ambient Air Monitoring

The Air District will start work on its West Oakland Measurement Study in fall 2008. This study will use ambient air monitoring to assess the results of ARB's *Draft Diesel Particulate Matter Health Risk Assessment (HRA) for the West Oakland Community*. The ARB study used models to predict concentrations of diesel PM in West Oakland and then used the modeled concentrations to predict health effects. Because concentrations of diesel PM cannot be directly measured – since diesel PM is just one component of overall PM captured on monitoring filters – there is no direct way to confirm the HRA results. The Air District study will determine whether ambient concentrations of diesel PM can be derived from measurements of a variety of other pollutants, and if so, whether the concentrations are similar to those predicted by the models used for the HRA. In carrying out the study, the Air District will work with the Desert Research Institute (DRI), which has considerable experience in this type of work.

In the first phase of the study, the Air District and DRI will use a mobile sampling van to conduct a preliminary survey of West Oakland to characterize variation in atmospheric concentrations of NO_x, CO, PM 2.5, ultrafine particles, VOCs, and black carbon. Based on results from mobile sampling, fixed sampling sites will be established in community locations that are likely to have the highest air toxic concentrations. Samples will be collected at the fixed sites during the winter 2008/2009. While samples are being collected at the fixed sites, the mobile sampling van will be used to collect samples near specific types of PM sources, including diesel PM sources like ships and trains, gasoline vehicle sources, and wood smoke sources. Pollutant signatures from this mobile sampling will be analyzed to determine whether measurements of black carbon can be used as a surrogate for diesel PM. The mobile sampling results will also be compared with the fixed location sampling results.

In the final phase of the study, samples will be collected that will then be used to estimate the contribution of diesel PM to ambient levels of PM_{2.5} in West Oakland. To do this, PM 2.5 samples will be collected at sites in the West Oakland community. Using source profiles developed in the earlier work, the PM_{2.5} samples will be analyzed to determine the contributions of diesel equipment, gasoline vehicles, wood smoke, and cooking. The ambient measured concentrations of diesel PM will then be compared to the modeled concentrations from the West Oakland HRA.

This study will only be carried out for a single season. However, the Air District is establishing a permanent monitoring location in West Oakland that can be used to help track risk reduction progress for the West Oakland community.

Community Outreach

An important component of the Green Ports Initiative is community outreach to ensure that Air District efforts are directed in ways that best serve Bay Area port communities most affected by diesel PM. The Air District will (1) continue to collaborate with community groups to develop, focus, and improve Green Ports activities, and (2) continue to collaborate with local health departments and other agencies to find paths for joint action and to support each other's individual activities in the communities.

In West Oakland, the Air District has spent and will continue to spend considerable staff time and resources involving the community in efforts to assess and reduce diesel PM emissions. As noted in the discussion of current Air District activities, the Air District is working with the Pacific Institute and the West Oakland Environmental Indicators Project to conduct a comprehensive truck survey in West Oakland. For the future, the Air District expects to work with these and other community groups to assess inventory and monitoring data and to develop mechanisms for community input on enforcement and grant efforts. For example, a key element of the Green Ports Initiative is enforcement of ARB's port trucks rule. Because community members are quite familiar with trucking operations in West Oakland, the Air District will seek community input in developing enforcement protocols for the rule, including any agreements with the Port of Oakland, and in developing mechanisms for community reporting of problems.

In addition to working with community and environmental groups, the Air District will discuss Green Ports Initiative efforts with representatives from the ports, marine terminals, trucking firms, shipping lines, and other related businesses. In particular, to the extent that efforts include agreements regarding enforcement, the Air District expects to involve any businesses affected by enforcement activities in order to ensure that all know what to expect.

The Air District will continue to work with the inter-agency group formed to work on the Port of Oakland Maritime Air Quality Improvement Plan (MAQIP). The group began meeting in late 2007 and includes ARB, the Alameda County Environmental Health Department, the Alameda County Public Health Department, the City of Oakland, the Port of Oakland, and the U.S. Environmental Protection Agency. The focus of the inter-agency group has been to assist MAQIP development, to coordinate agency resources and efforts to reduce air pollution and its impacts, and to examine relationships between modeled risks and community health.

As inventory data becomes available for other ports, the Air District will participate in community meetings or conduct separate meetings to discuss findings. The Air District already works with a resource team in each Bay Area county composed of representatives from business, community organizations, government, and environmental groups. The Air District will work through this network to set up or participate in community meetings and in meetings with the regulated community.

Appendix A – ARB Regulations on Diesel PM Sources at Ports

DRAFT

Regulation (Adoption Date)	Who's Responsible	Primary Requirements
Cargo Handling Equipment Regulation (12/8/2005)	Any person who sells, offers for sale, leases, rents, purchases, owns, or operates compression-ignition mobile cargo-handling equipment that operates at a California port or intermodal rail yard	<p><u>For yard trucks:</u></p> <ul style="list-style-type: none"> • Effective 1/1/2007, newly purchased, leased, or rented yard truck must meet 2007 or later on-road or Tier 4 off-road requirements • Existing yard trucks: replace or repower with engine meeting 2007 or later on-road standards or Tier 4 off-road standards or retrofit to Tier 4 standards; schedule based on age of existing engine (most pre-2003 to be completed by end of 2010) <p><u>For other equipment:</u></p> <ul style="list-style-type: none"> • Effective 1/1/2007, newly purchased, leased, or rented equipment must meet 2007 or later on-road or, if unavailable, Tier 4 off-road or highest off-road level available with controls installed • Existing equipment: replace or repower with certified on-road engine or Tier 4 off-road or retrofit with highest level verified controls; schedule based on age of existing engine; several alternative compliance options available
Commercial Harbor Craft Regulation (11/15/2007)	Any person who sells, supplies, offers for sale, purchases, owns, operates, leases, charters, or rents a new or in-use diesel vessel that is not an ocean-going or recreational vessel (includes ferries, excursion vessels, tugboats, towboats, push-boats, crew boats, supply boats, work boats, pilot boats, fishing vessels, research vessels, and others)	<ul style="list-style-type: none"> • New harbor craft: Engines must meet EPA standards in effect at time of acquisition • Existing harbor craft: All replacement engines must meet applicable EPA Tier 2 or 3 standards • New ferries: propulsion engines must meet applicable EPA Tier 2 or 3 standards coupled with BACT controls or meet Tier 4 standards • Retrofit requirements for existing ferries, excursion vessels, tugboats and towboats: EPA Tier 1 and earlier engines must be replaced by Tier 2 or 3 engines in accordance with a schedule based on engine model year, with older engines being replaced first • Vessel owner/operators must file an initial report with ARB by 2/28/2008 and maintain engine usage data

Regulation (Adoption Date)	Who's Responsible	Primary Requirements
Port Drayage Trucks Regulation (12/6/2007)	<p>Owners and operators of on-road heavy-duty diesel trucks that operate on or transit through port or intermodal rail yard properties for the purpose of moving cargo</p> <p>(Applies to all Bay Area ports and the following rail yards: BNSF Oakland, Union Pacific Oakland, BNSF Richmond)</p>	<p><u>For truck owners:</u></p> <ul style="list-style-type: none"> • Effective 12/31/2009: A truck in port and rail yard service must have a 1994 or later model year engine that (1) for 1994-2003 model year engines, has an ARB-approved PM filter, or (2) for 2004 or later engines, meets federal or California standards • Effective 12/31/2013: All trucks in port and rail yard service must have a 1994 or newer engine that meets 2007 model year emission standards • Effective 9/30/2009: Drayage truck must be registered in ARB Drayage Truck Registry (DTR) • Must attach truck registry label, maintain engine and controls and keep maintenance log <p><u>For motor carriers:</u> May not dispatch a truck for port or rail yard service that does not comply with the emission standards and registry requirements</p> <p><u>For ports and intermodal rail yards:</u></p> <ul style="list-style-type: none"> • Effective 9/30/2009: Must collect information on trucks not in DTR entering port or rail yard • Effective 4/15/2010: Must begin reporting information on trucks not in DTR to ARB
Shore Power Regulation (12/6/2007)	<ul style="list-style-type: none"> • Any person who owns, operates, charters, rents, or leases a container ship, passenger ship, or refrigerated cargo ship in a fleet that visits California ports* 25 or more times (or 5 for passenger ships) in a year • Any person who owns or operates a terminal at a California port* with more than 50 vessel visits per year involving container, passenger, or refrigerator cargo ships <p>* 6 ports, including only Oakland and San Francisco in the Bay Area</p>	<p><u>For ship operators:</u></p> <ul style="list-style-type: none"> • Effective 1/1/2014: Ship auxiliary engines must be shut down for 50% of a fleet's visits to California ports • Effective 1/1/2017: Ship auxiliary engines must be shut down for 70% of a fleet's visits to California ports • Effective 1/1/2020: Ship auxiliary engines must be shut down for 80% of a fleet's visits to California ports • Alternative compliance option: Using any technology or combination of technologies, reduce at-berth emissions 10% by 2010, 25% by 2012, 50% by 2014, 70% by 2017, and 80% by 2020 • Submit fleet compliance plans and updates for each port** on a schedule based on compliance dates <p><u>For terminal operators:</u></p> <ul style="list-style-type: none"> • Submit initial compliance plan by 7/1/2009 • Submit plan updates in accordance with schedule aligned with compliance dates • Maintain data on vessel visits and associated energy usage <p><u>For ports**:</u> Beginning with 2010 data, must submit vessel visit data annually by April of the following year</p> <p>** Requirements apply only to Oakland and San Francisco in the Bay Area</p>

Regulation (Adoption Date)	Who's Responsible	Primary Requirements
Ship Auxiliary and Main Engine Regulation (7/24/2008)	Any person who owns, operates, charters, rents, or leases an ocean-going vessel that visits a California port	<p>No ocean-going vessel may use fuel with a sulfur content exceeding that listed below within twenty-four miles of the California coast:</p> <ul style="list-style-type: none"> • Upon OAL approval of the regulation: For auxiliary diesel engines, marine gas oil (MGO) sulfur content may not exceed 1.5% and marine diesel oil (MDO) sulfur content may not exceed 0.5% • Effective 7/1/2009: For main engines, MGO sulfur content may not exceed 1.5% and MDO sulfur content may not exceed 0.5% • Effective 1/1/2012: . For all engines, MGO and MDO sulfur content may not exceed 0.1%

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**Appendix B – Descriptions of the Five San Francisco Bay Area
Seaports**

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Appendix B – Description of the Five San Francisco Bay Area Seaports

Benicia

The Port of Benicia is a privately-owned port located along the Carquinez Strait 16 miles from the Golden Gate Bridge. The port property covers 667 acres within the 3,500 acre Benicia Industrial Park. The port is operated by AMPORTS, which imports motor vehicles using roll-on/roll-off (RORO) ships. In addition, Kinder Morgan, Inc. operates a petroleum coke export business at the port. Tugs also use the port to lay over between jobs. Union Pacific Railroad provides on-terminal rail service.

Oakland

The Port of Oakland is the fourth largest container port in the United States (behind the Port of Los Angeles, the Port of Long Beach, and New York City/New Jersey). Terminal facilities at the port cover more than 770 acres.

The port is operated by a department of the City of Oakland, with control and management exercised by the Board of Port Commissioners. The port is a non-operating or landlord port that leases space to tenant marine terminals. There are ten major terminals at the port, all of which serve container ships and all of which operate under leases that grant preferential access to terminal facilities.

Two railroads, the Burlington Northern Santa Fe and the Union Pacific, operate rail yards immediately adjacent to the port that provide intermodal service to move containers to markets throughout the United States. The port is also served by major freeways that allow trucks to move containers to intermodal railheads, distribution centers, and into interstate commerce.

Redwood City

The Port of Redwood City is located 18 miles south of San Francisco. It is operated by a department of Redwood City and managed by the Board of Port Commissioners. It is primarily a bulk import port for commodities used in making concrete and other materials for Bay Area construction projects. The two major tenants are Cemex Aggregates and Cemex Cement. Cemex Aggregates primarily imports aggregates from British Columbia. Cemex Cement primarily imports cement from Indonesia. PABCO Gypsum, a manufacturer of gypsum wallboard, imports gypsum through the port for its wallboard plant in Newark. IMI imports bauxite through the port for the Hanson Permanente cement plant in Cupertino. The only export business at the port is SIMS Group, which exports scrap metal, mainly from crushed automobiles, through the port.

Richmond

The Port of Richmond is located 9 miles from the Golden Gate Bridge. It encompasses five marine terminals owned by the City of Richmond and ten privately-owned terminals all located

along the Richmond Inner Harbor. The city-owned terminals are leased to tenants that handle a wide range of liquid and dry bulk commodities, automobiles, and other cargo.

Private terminals handle bulk liquid, dry bulk materials, metals, and break-bulk cargoes. Half of the private terminals (Pacific Atlantic, IMTT, BP Lubricants, ConocoPhillips, and BP West Coast) handle petroleum products.

The Chevron Richmond Long Wharf, which is also generally associated with the Port of Richmond, is located about two miles west of the other Port of Richmond terminals. Chevron operates the wharf, importing crude oil and intermediate products and exporting various petroleum products. The wharf is covered by the BAAQMD permit issued to the Chevron Richmond Refinery. Emissions from ships at the wharf are included in refinery-wide emissions, which are subject to an emissions cap imposed by the permit.

San Francisco

The Port of San Francisco owns 7.5 miles of San Francisco waterfront stretching from the Hyde Street Pier southward along San Francisco Bay to Berth 96 near Hunters Point. The Port covers more than 1000 acres and is operated as a public enterprise agency of the City and County of San Francisco. The port is managed by a five-member Board of Commissioners.

The Port of San Francisco has over 500 tenants, but most of them have no connection to waterborne commerce. Port tenants include offices, retail shops, parking lots, restaurants, and the baseball park. The primary maritime activities at the port are the cruise ship dock at Pier 35, the cargo terminals from China Basin south to Hunters Point, and a great variety of harbor craft activity.

Appendix C – Description of Port Emission Reduction Efforts

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Appendix C – Description of Port Emission Reduction Efforts

Ports of Los Angeles and Long Beach

The Port of Los Angeles and the Port of Long Beach have worked in tandem to address concerns about pollution from port activities. Each port first prepared an inventory of air emissions in 2001 and updated the inventory in 2005 and 2006. In November 2006, the ports jointly adopted an action plan, called the San Pedro Bay Clean Air Action Plan, to reduce each port's emissions by 45% to 50% by the end of 2011 relative to base year 2001 (Los Angeles) or 2002 (Long Beach). The plan, which was the first such port plan in the nation, sets forth actions to reduce emissions from the trucks, ocean-going vessels, cargo handling equipment, harbor craft, and trains involved in moving goods to, from, and around the two ports. The primary goal of the plan is to reduce the public health risks from port-related air pollution while allowing for continued growth of the ports.

The major initiatives identified in the San Pedro Bay plan are: (1) replacement or retrofit of approximately 16,000 trucks, (2) concession agreements imposing clean truck requirements as well as safety, security, and financial responsibility requirements on truck firms that operate at the ports, (3) development of shore power at all terminals, (4) use of low-sulfur fuel by ocean going vessels, (5) a complete replacement of off-road equipment engines with engines that meet the very low-EPA Tier 4 emission standards, (6) accelerated deployment of low emission locomotives and harbor craft by the railroad and tugboat companies, and (7) a technology advancement program, in partnership with the South Coast AQMD. In most respects, these initiatives are similar to those now mandated by ARB regulations.

A central element of the plan has been the Clean Trucks Program. To implement the Clean Trucks Program, each port adopted tariff amendments requiring all drayage trucks to meet EPA 2007 truck emission standards by 2012. Each port then adopted orders requiring port terminal operators to prohibit access to trucks not operating under a concession agreement with the port. The concession agreements for the two ports are similar in imposing requirements regarding truck company licensing, registration with the port's drayage truck registry, responsibility for drivers, compliance with the Clean Trucks Program, parking, maintenance, safety, port security, radio frequency identification devices for trucks, truck placards, and financial responsibility. The primary difference between the concession agreements at the two ports is that the Port of Los Angeles tariff requires that motor carriers transition away from independent contractor drivers and instead use drivers who are employees of the motor carrier.

Each port included in its tariff a system of charges to be paid by motor carriers. These charges include initial concession application fees and annual administrative fees of \$100 for each truck operating under a concession agreement. In addition, the ports have included a \$35 per twenty-foot container unit charge on containers moved by trucks that do not meet 2007 EPA emission standards.

In July 2008, the American Trucking Association filed a lawsuit against the two ports, alleging that the concession agreements are preempted by a 1994 federal statute that deregulated trucking.

The primary target of the lawsuit is the Port of Los Angeles requirement that motor carriers use employee drivers. In September 2008, a U.S. District Court judge denied ATA's request for a preliminary injunction barring implementation of the Clean Trucks Program. ATA filed an appeal with the U.S. Court of Appeals for the Ninth Circuit, which denied the request for injunctive relief and established an expedited briefing schedule for the case. In October, the federal government filed an amicus brief in the case supporting ATA's effort to reverse the decision of the District Court. The outcome of this case on appeal will determine the extent to which ports can use concession agreements to control the nature of the trucking businesses and trucks that move containers at the ports.

Various community and labor groups would like to see the Port of Los Angeles concession model implemented at all ports as a way to reduce truck emissions while improving the working conditions of independent contractor drivers. These groups are concerned that many independent contractor drivers lack the financial resources to purchase new trucks or retrofits and that subsidy programs may require financial contributions or the assumption of debt that truckers cannot afford.

Port of Oakland

In 2005, the Port of Oakland began preparation of an emissions inventory to provide baseline data for planning activities and for tracking progress in reducing emissions. In March 2008, the Port released the final inventory, the "Port of Oakland 2005 Seaport Air Emissions Inventory." Data from this inventory was used by the California Air Resources Board in preparing its West Oakland HRA.

In June 2008, the Port of Oakland released a draft Maritime Air Quality Improvement Plan (MAQIP). The plan had its origins in discussions with community groups and regulatory agencies in 2006. In early 2007, the Port established a 35-member MAQIP Task Force which met through 2007 and early 2008. The Task Force had four co-chairs, including Jack Broadbent, the Executive Officer of the Air District. The Port intends the plan to be a master plan establishing air quality goals and policies to guide Port efforts to reduce emissions. A central element of the MAQIP is a resolution, adopted by the Board of Port Commissioners on March 18, 2008, committing the Port to an 85% reduction by 2020 in cancer risks from exposure to Port diesel PM emissions. The Air District has commented on the draft MAQIP urging that the plan should include (1) more detail regarding the measures that will be implemented to achieve plan goals, (2) clear descriptions of the means for ensuring that tenants comply with the ARB regulations on which the plan heavily relies, (3) backup measures in the event that plan measures cannot be implemented, and (4) a timeline for implementing user fees to cover air pollution program costs. The Port expects to finalize the MAQIP in late 2008.

The draft MAQIP differs from the plan adopted by the Ports of Los Angeles and Long Beach because it does not include implementation programs and projects within the plan. Rather than include implementation steps in the MAQIP, the Port of Oakland appears to be developing its emission reduction programs as separate efforts. In particular, the Port has been working on a Comprehensive Truck Management Plan since June 2007. In developing the plan, the Port has been following developments with the concession agreements adopted by the Ports of Los

Angeles and Long Beach. Community, environmental, and labor groups have been urging the Port of Oakland to adopt a concession agreement model for truck management.

On July 1, 2008, the Port of Oakland adopted a resolution authorizing Port staff to explore amending the port tariff to impose a container fee of \$12.50 to \$25.00 per twenty-foot container unit. The revenue raised by the container fees would be used to fund programs to reduce air pollution from Port activities.

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BAY AREA AIR QUALITY MANAGEMENT DISTRICT
Memorandum

To: Chairperson Miley and Members of the
Ad Hoc Committee on Port Emissions

From: Jack P. Broadbent
Executive Officer/APCO

Date: November 6, 2008

Re: Discussion of Comprehensive Truck Management Plan at the Port of
Oakland

RECOMMENDED ACTION:

Informational report, receive and file.

DISCUSSION

Staff will discuss developments regarding potential comprehensive truck management plans at the Port of Oakland.

BUDGET CONSIDERATION / FINANCIAL IMPACT:

None at this time.

Respectfully submitted,

Jack P. Broadbent
Executive Officer/APCO