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.

MAQIP Planning Document
Action: NA
Meeting: 01/30/07
Status: Draft - subject to revision

Prepared by: Port of Oakland
Prepared on: January 28, 2008
Review provided by: Co-Chairs, work team

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).

~~3.Maximize implementation of "paperless gate;" such as RFID in combination with web-based booking systems to prevent gate congestion and idling and use OCR for gate efficiency.~~ (moved to Secondary)

4. Implement standardized mandatory web-based reservation systems~~, giving preference to trucks participating in diesel reduction strategies.~~
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 ~~eligible equipment such as diesel particulate filters (DPF) or diesel oxidation catalysts (DOC) and~~ 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.

7. 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.
8. Provide incentives for early implementation for cleaner trucks. ~~Conversely, institute a penalty for companies that fail to meet the cleaner truck guidelines by a required date.~~ An example incentive ~~or penalty~~ could be a decreased or increased concession fee.
9. Adopt and implement ARB rule to modernize (replace and/or retrofit) private truck fleet.
10. Implement idle reduction education, technology, and policy program with provisions to assure terminal adherence to anti-idling policies and procedures (ref: AB 2650).
11. Install traffic Barriers on streets where trucks are prohibited (City of Oakland)
12. Pass an ordinance prohibiting overnight truck parking in residential areas (City of Oakland).
13. Support acquisition and use of more LNG & CNG trucks. (Moved from Secondary)
14. Provide truck services (fueling, truck repair, food and beverages) at the Port of Oakland. (Moved from Secondary)

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. (moved from Primary above)
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.

~~9.Provide truck services (fueling, truck repair, food and beverages) at the Port of Oakland.~~

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).

~~14.Deploy more LNG & CNG trucks.~~

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.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.*~~
~~4.100% use of cleaner fuels, such as 0.1% S 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 Low Sulfur 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 Low Sulfur Fuel regulation currently under legal challenge but being temporarily enforced)*.~~ Proposal to combine original items 3,4, and 5 and address under item 10 below. Agreed adding "0.1% sulfur to #8
4. Implement additional at-dock (e.g. stack after-treatment) and during voyage (e.g. electrification or scrubbing) emissions reduction options deemed viable.
5. Use of diesel particulate matter (DPM) and/or NOx control devices on auxiliary and main engines on new vessel builds and existing frequent callers.
~~8.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.*~~
6. Create incentives for cold-ironing beyond regulations.

7. Create incentives for all ships to use low sulfur fuel (0.1%) in both vessel main and auxiliary engines.
8. Support ratification of MARPOL Annex 6 for international shipping.
9. Obtain SOx Emission Control Area (SECA) designation or alternative for North America.
10. 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. ~~Standardize~~ 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 ~~might~~ 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 ~~including~~ 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 ~~specified~~ 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 the equivalent of 1998 Railroad MOU for South Coast Air Basin here in Oakland as appropriate.~~

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 biofuels~~ B 20~~ 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. ~~Use~~ Dispense lower-sulfur diesel in 80% of locomotives operating in California by ~~December 2006~~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 ~~and/or biofuel~~ in switchyard and line haul locomotive engines.
7. Implement 2005 Statewide MOU for Rail Yard Risk Reduction.
8. Conduct ~~ARB~~ training on locomotive idling restrictions.

IV. 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).