SECTION 4: CLEAN AIR ACTION PLAN INITATIVES - OVERVIEW

This section presents an overview of the Clean Air Action Plan, which consists of six primary elements:

1. Source category control measures for existing operations
2. Standards for new leases and lease renewals negotiations
3. Requirements for construction equipment
4. Comprehensive Technology Advancement Program initiative
5. Infrastructure and operational efficiency improvements initiative

For the Port of Los Angeles there is an additional element associated with the China Shipping Settlement.

4.1 Source Specific Control Measures

Specific source category control measures were developed from both existing Port air programs and the work completed by the City of Los Angeles' NNI Task Force report and the Port of Long Beach's Green Port Policy. Table 4.1 illustrates how both Ports are considering initial implementation strategies, at this time, for the various measures proposed in the Clean Air Action Plan. The recognition program and voluntary measures will be implemented across all measures. These initial implementation strategies identified in the table are thought by the Ports to be ready for use to initiate the control measures. Depending on the performance of these initial strategies, they will be adjusted, removed, enhanced, or other additional strategies will be utilized in order to maximize timely emissions reductions. In addition, the Ports are looking to what extent strategies like tariff changes can be effectively utilized to expedite emissions reductions.

Table 4.1: Control Measures & Initial Implementation Strategies

SPBP Measure Number	Control Measure	Initial Implementation Strategies
SPBP-HDV1	Performance Standards for On-Road Heavy-Duty Vehicles	Incentive/Lease Req/ Tariff/Impact fees/CEQA
SPBP-HDV2	Alternative Fuel Infrastructure for Heavy-Duty Natural Gas Vehicles	Incentives (Ports & SCAQMD Funding)
SPBP-OGV1	OGV Vessel Speed Reduction (VSR)	Tariff /Incentives Lease Requirements/CEQA
SPBP-OGV2	Reduction of At-Berth OGV Emissions	Lease Requirements CEQA
SPBP-OGV3	OGV Auxiliary Engine Fuel Standards	Lease Requirements Tariff (if applicable)/CEQA
SPBP-OGV4	OGV Main Engine Fuel Standards	Lease Requirements Tariff (if applicable)/CEQA
SPBP-OGV5	OGV Main & Auxiliary Engine Emissions Improvements	Lease Requirements Incentives/CEQA
SPBP-CHE1	Performance Standards for CHE	Lease Requirements CEQA
SPBP-HC1	Performance Standards for Harbor Craft	Incentives Lease Requirements/CEQA
SPBP-RL1	PHL Rail Switch Engine Modernization	Second Amendment to Operating Agreement
SPBP-RL2	Existing Class 1 Railroad Operations	MOU/Lease Req CEQA
SPBP-RL3	New and Redeveloped Rail Yards	MOU/Lease Req CEQA
	Construction Standards	CEQA
	Technology Advancement Program	Incentives
	Infrastructure & Operational Efficiency Improvements Initiative	Incentives
	POLA China Shipping Settlement	Settlement Agreement (Port of Los Angeles Only)

It should be noted that control measures SPBP-OGV1, OGV3, and OGV4 will be evaluated to determine solutions to various logistical issues to ensure effective measure implementation. These issues include: updating the existing radar range capabilities to 40 nm, working with the Marine Exchange and United States Coast Guard (USCG) to resolve issues associated with vessels outside the Coast Guard's administrative area, work with the Marine Exchange to track additional fuel compliance data elements for monitoring and reporting, determine effects of

changing VSR zone on areas inside California waters, but beyond 40 nm from Point Fermin, work to get work gang assignments moved to 40 nm, and to evaluate fuel availability and ship tankage availability associated with operating on cleaner fuels. The evaluations and upgrades to the radar system will be completed before the end of 2007.

4.1.1 Control Measures for Heavy-Duty Vehicles

- **SPBP-HDV1** – Performance Standards for On-Road Heavy Duty Vehicles. The control measure is focused on maximizing the reductions from frequent (7 or more calls per week) and semi-frequent (3.5 to less than 7 calls per week) caller trucks that service both Ports. This control measure sets forth the following "clean" truck definitions:

  - ✓ All frequent caller trucks, and semi-frequent caller container trucks model year (MY) 1992 and older, calling at the San Pedro Bay Ports will meet or be cleaner than the EPA 2007 on-road emissions standard (0.01 g/bhp-hr for PM) and the cleanest available NOx at time of replacement.
  - ✓ Semi-frequent caller container trucks MY1993-2003 will be equipped with the maximum CARB verified emissions reduction technologies currently available.

  The measure then sets target dates by which trucks will either be replaced or retrofitted to meet the above standards. In order to accommodate this massive transformation of the existing truck fleet, Port, SCAQMD, and other public funding will be required. The program also sets forth suggested strategies to maximize the use and emissions reductions of "clean" trucks calling at both ports.

- **SPBP-HDV2** – Alternative Fuel Infrastructure for Heavy-Duty Natural Gas Vehicles. Construct LNG or compressed natural gas (CNG) refueling stations preferably on jointly owned property, after resolution of logistical issues and site considerations. Funding to build at the recommended locations would come primarily from Port incentive funds (for on-port and near-port infrastructure), SCAQMD alternative fuel funds (for on-port, near-port, and basin-wide infrastructure), and potentially from grants from state and federal regulators or others.

4.1.2 Control Measures for Ocean-Going Vessels

- **SPBP-OGV1** – OGV Vessel Speed Reduction (VSR). Currently a voluntary program under which ships are slowed within the SoCAB over-water boundary out to 20 nm from Point Fermin, reducing NOx emissions. The program will be evaluated to determine solutions to various logistical issues to ensure effective

measure implementation. These issues include: updating the existing radar range capabilities to 40 nm, working with the Marine Exchange and USCG to resolve issues associated with vessels outside the Coast Guard's administrative area, determine effects of changing VSR zone on areas inside California waters, work to get work gang assignments moved, and other operational issues. The associated costs would be shared between the San Pedro Bay Ports.

- **SPBP-OGV2** – Reduction of At-Berth OGV Emissions. Under this initiative, each Port will develop the infrastructure required to provide shore-power capabilities to all container and cruise ship berths. On a case-by-case basis, other vessel types like specially outfitted tankers or refer terminals will be evaluated for the application of shore-power.

  In addition, this initiative includes the demonstration and implementation of alternative shore-side technologies that can be used on vessels unequipped for connecting to shore-power that could provide significant emissions benefits while at berth.

- **SPBP-OGV3** – OGV Auxiliary Engine Fuel Standards. As proposed, this measure would phase in the use of ≤0.2% S MGO fuels in auxiliary engines with initial implementation driven by lease requirements and potentially tariffs. This requirement would impact vessels calling at San Pedro Bay Ports, within the VSR boundary (as described in SPBP-OGV1). Initially, similar to SPBP-OGV1, the program would start out at 20 nm from Point Fermin and would be expanded to 40 nm from Point Fermin at the same time as SPBP-OGV1.

- **SPBP-OGV4**– OGV Main Engine Fuel Standards. As proposed, this measure would require ship's main engines to operate using MGO fuels with sulfur content ≤0.2% S in their main engines, while inside the VSR zone (described in SPBP-OGV1). Initially, similar to SPBP-OGV1, the program would start out at 20 nm from Point Fermin and would be expanded to 40 nm from Point Fermin at the same time as SPBP-OGV1. Similar to SPBP-OGV3, this measure would also be implemented through lease requirements and potentially tariffs.

- **SPBP-OGV5**– OGV Main and Auxiliary Engine Emissions Improvements. This measure focuses on reducing DPM, NOx, and SOx emissions from OGV main engines and auxiliary engines. OGV engine standards have not kept pace with other engine standards such as HDVs and CHE. IMO's MARPOL Annex VI is a very weak standard. This measure is coupled with the Technology Advancement Program by incorporating successfully demonstrated technologies or technologies

that have sufficient data that it can be agreed upon by regulatory agencies and the Ports as to what emissions reductions levels can be for a given technology.

4.1.3 Control Measures for Cargo-Handling Equipment

- **SPBP-CHE1** – Performance Standards for CHE. This measure sets fuel neutral purchase requirements for CHE, starting in 2007. The focus is moving the yard tractor fleet to either the cleanest available diesel or the cleanest available alternative fuel engines meeting EPA on-road 2007 or Tier IV PM and NOx standards and for other equipment for which these engines are not available, the installation of the cleanest CARB VDECs. It also requires that by 2010, all yard tractors operating at the ports will have the cleanest engines meeting EPA on-road 2007 or Tier IV engine standards for PM and NOx. All remaining CHE less than 750 hp will meet at a minimum the 2007 or Tier IV standards for PM and NOx by 2012. Finally, the measure calls for the all remaining CHE greater than 750 hp to meet Tier IV standards for PM and NOx by 2014 and prior to that, be equipped with the cleanest available VDEC.

4.1.4 Control Measures for Harbor Craft

- **SPBP-HC1** – Performance Standards for Harbor Craft (HC). This measure continues the various engine replacement programs led by both Ports, CARB/SCAQMD, and others. The focus will be on harbor craft that have not already been repowered/retrofitted (including construction related harbor craft like dredges and support vessels). When candidate vessels are identified, the Ports will assist/require the owner/operator to repower or retrofit propulsion and auxiliary engines. For non-construction related candidates, Ports staff will assist the owners in applying for Carl Moyer Program incentive funding for the cleanest available engine that meets the emissions and cost effectiveness requirements. This measure is fuel neutral. Potential vessel candidates will be identified through the annual emissions inventory process, and the program will be implemented through lease requirements. It should be noted, that several tugs operating at the Port of Long Beach are home-ported on private property (not Port property) and therefore will not be affected by this measure.

4.1.5 Control Measures for Railroad Locomotives

- **SPBP-RL1** – PHL Rail Switch Engine Modernization. A voluntary program initiated by the Ports of Los Angeles and Long Beach in conjunction with PHL to modernize switcher locomotives used in Port service to meet Tier 2 locomotive engine standards and initiate the use of fuel emulsion in those engines. The

program also includes evaluation of alternative-powered switch engines including LNG and hybrid locomotives. In addition, a locomotive DOC and DPF will be evaluated and based on a successful demonstration; DOC or DPF will be applied to all Tier 2 switcher locomotives. Finally, this measure restricts future purchases to the cleanest locomotives available.

- **SPBP-RL2** – Existing Class 1 Railroad Operations. This measure effects only existing Class 1 railroad operations on Port property (SPBP-RL3 effects all new or redeveloped rail yards). The goal of this measure is to secure an agreement (MOU) with the Class 1 railroads, and use other contractual mechanisms, to reduce emissions from their existing operations on Port properties that do not have a CEQA action pending in the next five years (i.e. new or redeveloped rail yard). This measure lays out stringent goals for switcher, helper, and long haul locomotives operating on Port properties. By 2011, all diesel-powered Class 1 switcher and helper locomotives entering Port facilities will be 90% controlled for PM and NOx, will use 15-minute idle restrictors, and after January 1, 2007, the use of ULSD fuels. Starting in 2012 and fully implemented by 2014, the fleet average for Class 1 long haul locomotives calling at Port properties will be Tier III equivalent (Tier 2 equipped with DPF and SCR or new locomotives meeting Tier 3) PM and NOx and will use 15-minute idle restrictors. Class 1 long haul locomotives will operate on USLD while on Port properties by the end of 2007. Technologies to get to these levels of reductions will be validated through the Technology Advancement Program.

- **SPBP-RL3** – New and Redeveloped Rail Yards. Rail facilities include many emission-producing activities, including the operation of switching and line-haul locomotives, idling of switching and line-haul locomotives, loading and unloading of railcars by CHE, and HDVs servicing the yards. New rail facilities, or modifications to existing rail facilities located on Port property, will incorporate the cleanest locomotive technologies, meet the requirements specified in SPBP-RL2, utilize "clean" CHE and HDV, and utilize available "green-container" transport systems. A list of these technologies will be provided for project proponents to consider in developing new facilities or redeveloping existing facilities, and the measures will be formalized in lease requirements.

4.1.6 Integration of Non-Regulatory NNI Measures

Many of the measures proposed in the Clean Air Action Plan advance the requirements and implementation of upcoming regulations, as did several of the NNI measures. Non-regulatory NNI Measures have been incorporated into the Clean Air Action Plan control measures. Regulatory NNI Measures are part of the on-going regulatory

programs implemented by the federal, state, and local agencies and are the responsibility of those agencies. Table 4-2 details how each San Pedro Bay Ports Clean Air Action Plan measure relates to the non-regulatory NNI control measures.

Table 4.2: Integration of NNI Measures

SPBP Measure #	New Control Measure/Program Name	Non Regulatory NNI Measures
SPBP-HDV1	Performance Standards for On-Road Heavy-Duty Vehicles	HDV3, HDV10 HDV12,
SPBP-HDV2	Alternative Fuel Infrastructure for Heavy-Duty Natural Gas Vehicles	HDV-4
SPBP-OGV1	OGV Vessel Speed Reduction (VSR)	OGV2, OGV15
SPBP-OGV2	Reduction of At-Berth OGV Emissions	OGV3, OGV16
SPBP-OGV3	OGV Auxiliary Engine Fuel Standards	OGV4, OGV11
SPBP-OGV4	OGV Main Engine Fuel Standards	OGV9, OGV12
SPBP-OGV5	OGV Main & Auxiliary Engine Emissions Improvements	OGV 7
SPBP-CHE1	Performance Standards for CHE	CHE2, CHE3, CHE4, CHE5, CHE7, CHE8
SPBP-HC1	Performance Standards for Harbor Craft	HC9, HC10
SPBP-RL1	Existing Class 1 Railroad Operations	R5, R6
SPBP-RL2	Operational Controls for Class 1 Railroads	R10, R11
SPBP-RL3	New and Redeveloped Rail Yards	No NNI Equivalent
	Technology Advancement Program	HDV13, HDV14, HDV18, HDV19, OGV7, OGV13, OGV14, HC3, HC7, R7, R9, R12
	Construction Activities	No NNI Equivalent
	POLA China Shipping Settlement	CHE6, HC5

Notes:

OGV 6 – This is already being done by shipping companies and will be documented in the upcoming 2005 emissions inventory update.

HC11 – "AMP™ Staging Areas" is being modified such that all customers that own/operate tugs will be required to AMP™ while they are at their homeport (the area being leased). This provision was not included in HC measures. Through preliminary analysis, staging areas (locations with the Ports where tugs would wait on shore-power between jobs rather than return to their homeports) are infeasible with current security requirements and wharf availability.

SPBP-RL3 – Goes beyond NNI requirements.

4.2 Construction Activity

Construction activity emissions will be assessed through the CEQA evaluation process and control strategies that may be required to meet CEQA mitigation requirements will be incorporated in bid packages for the actual construction work. Construction equipment includes marine sources (primarily dredges, tugs, crew boats, pile-drivers) and land (excavators, cranes, etc.) sources. Land- and marine-based construction equipment will be required to meet the control strategies that may be required as mitigations in the CEQA document.

The Ports, SCAQMD, and CARB will be developing a list of Best Management Practices (BMP) associated with construction activities by the end of 2007. These BMPs will be incorporated in construction contracts.

4.3 Technology Advancement Program

Another significant initiative of the Clean Air Action Plan is the Technology Advancement Program, which will evaluate, demonstrate, pilot, and incorporate new strategies into the suite of control measures that will ultimately result in significant reductions of DPM, NOx, and other criteria pollutants. This initiative builds on the success and synergies of the San Pedro Bay Ports, CARB, SCAQMD, EPA Region 9, tenants, and other stakeholders working together to find joint solutions. Several successful projects have occurred over the years between these entities, and this program would help to build on those early successes. A coordination committee will be established consisting of funding partners that includes both Ports, SCAQMD, CARB, and EPA Region 9. Other stakeholders may become involved in relation to specific projects, as approved by the Coordination Committee.

It is envisioned that the Technology Advancement Program would be the catalyst for identifying, evaluating, and demonstrating/piloting new and emerging emissions reduction technologies/strategies that could then be utilized in future updates to the Clean Air Action Plan as new control measures, alternatives to existing strategies, or as additional mitigation options for new projects. Below is a simplified illustration of how the process would work.

Existing/Emerging Technology → Technology Advancement Program → Implementation

There are four fundamental areas in which the program will focus its initial work:

- Specific control measure requirements (as identified in Section 5)
- "Green-Container" Transport Systems
- Emerging Technology Testing
- Emissions Inventory Improvements

The program will be primarily funded by both Ports and the participating agencies. Projects will be developed and implemented under each of the areas listed above. Successful demonstration projects will then be incorporated into the next annual update of the Clean Air Action Plan as control measures or additional emissions reduction strategies.

4.4 Infrastructure & Operational Efficiency Improvements Initiative

This initiative identifies projects at the San Pedro Bay Ports that improve infrastructure and operational efficiencies that have an added air quality benefit. The initiative includes, but is not limited to:

- Focus on on-dock vs. near-dock rail infrastructure
- Grade separations
- Optical character recognition (OCR) gates at terminals
- Terminal cargo handling/configuration efficiency improvements
- Radio Frequency Identification (RFID)
- Virtual Container Yards

The emissions reduced by these projects would be quantified and reported in emissions inventory updates.

4.5 Port of Los Angeles – China Shipping Settlement

Unique to POLA are the emission reductions associated with the China Shipping Settlement. In February 2003, the Port joined environmental and Harbor-area community groups in a settlement agreement that includes a series of environmental programs designed to improve the area's air quality and quality of life. As part of this settlement, the Port has committed over $20 million over five years to pay for air quality mitigation projects that reduce Port operation emissions that affect the communities of Wilmington and San Pedro. This program is known as the Port Air Quality Mitigation Incentive Program (PAQMIP). In accordance with the settlement agreement, the PAQMIP expends funds for projects and improvements that reduce emissions from Port operations that affect the communities of Wilmington and San Pedro. All emission reductions resulting from funded projects are retired by the Port of Los Angeles for the benefit of the environment, meaning that the reductions cannot be used as offsets or sold as credits.

The PAQMIP is in its third year[5], with the most recent Request for Proposals (RFP) planned for issuance in June/July 2006. The primary purpose of this program is to provide financial incentives to assist in the implementation of projects that will accomplish two objectives: (1)

[5] 3rd time an RFP is issued to solicit projects.

reduction of emissions associated with Port operations in the communities of San Pedro and Wilmington, and (2) research and development of specific technologies that can be applied in the San Pedro Bay Port area to achieve the first objective.