SECTION 10 LOOKING FORWARD

10.1 Anticipated Impacts of Control Programs on Emissions in 2012

Port-related mobile source emissions have continued to decrease over the last several years due in part to the reduced cargo throughput (reflective of global economic conditions) as well as the implementation of the CAAP and regulatory programs. In 2012, the trend in TEU throughput is expected to decrease slightly as evidenced from the TEU throughput levels in the first quarter of 2012. The 2012 EI will reflect the Port’s actual throughput level in 2012 and the net emissions benefits associated with the implementation of CAAP measures and regulatory programs. In addition, consistent with the Port’s EI development process, the latest available emission factors and methods will be incorporated into the 2012 EI.

The following is a brief description of the anticipated impacts of control programs and measures for each source category, which will result in further reduction of emissions from these port-related sources in 2012:

Ocean-Going Vessels
Continued implementation of CAAP measures, including the use of shore power for vessels at berth and the Port’s vessel speed reduction program, will result in significant emission benefits. In addition, CARB’s marine fuel regulation requiring the use of lower sulfur fuel in main and auxiliary engines and auxiliary boilers within 24 nm of the California coastline will continue. Starting on August 1, 2012, the sulfur limit for marine gas oil will be reduced to 1%. This aligns with the date that the 1% sulfur requirement in the North American Emission Control Area begins. Further, the trend toward newer vessels complying with new IMO standards and incorporating emission reduction technologies is expected to continue offering additional emission benefits in 2012.

Harbor Craft
Under the CARB regulation for commercial harbor craft, in-use, newly purchased, or replacement engines in crew boats, commercial fishing vessels, ferries, excursion vessels, tug boats, pilot boats, workboats, and tow boats must meet EPA’s most stringent emission standards per a compliance schedule set by CARB for in-use engines and from new engines at the time of purchase. For harbor craft with home ports in the SoCAB, the compliance schedule for in-use engine replacements began in 2010 with the oldest model year engines (1979 and earlier).
Cargo Handling Equipment
In 2012, the continued implementation of the CAAP measure and CARB’s in-use regulation for cargo handling equipment will result in emissions benefits due to the replacement of existing older equipment with newer and cleaner equipment powered by on-road engines or the cleanest engine available. Retrofitting equipment with diesel particulate filters and other verified technologies will continue to increase.

Locomotives
The 1998 memorandum of understanding (MOU) among the Class 1 railroads (UP and BNSF), CARB, and EPA requires the accelerated introduction of cleaner locomotives in SoCAB. Specifically, the MOU requires BNSF and UP to achieve fleet-wide average emission rates meeting EPA’s Tier 2 line haul emission standards for their locomotives operating in SoCAB by 2010. Additional reductions in subsequent years are anticipated from line haul locomotives due to implementation of the MOU.

Heavy-Duty Vehicles
Under the Port’s Clean Trucks Program, following the first phase of the progressive ban of older trucks operating at the Port (banning pre-1989 trucks from port service) in October 2008, the second phase of the CTP was implemented in 2010. Specifically, as of January 1, 2010, all 1989-1993 model year trucks, as well as the non-retrofitted 1994-2003 model year trucks (i.e., not achieving CARB Level 3 PM reduction plus 25% NOx reduction), were banned from port service. Implementation of the CTP has resulted in significant emissions reductions due to turnover of older trucks with newer. The final ban, which bans all pre-2007 trucks, will come into effect January 1, 2012; will result in significant HDV reductions in 2012.

In addition, as of July 1, 2011, the port banned Class 7 trucks with 2003 engine model or older, from working at the Port. These smaller trucks were not originally part of the Clean Trucks Program. In 2012, the Port will continue the efforts to increase the population of alternatively fueled trucks serving the Port.

10.2 Future Improvements to Emissions Inventory Methodologies
In an effort to improve the annual air emissions inventories, the methodologies to estimate emissions continue to evolve with the development and discovery of new data and information. This subsection describes the proposed improvements to methodologies for estimating emissions in future inventories, by category.
Ocean-Going Vessels

Improvements to the methodology to estimate OGV emissions will be considered in at least two areas: 1) engine modification technologies incorporated into new engines as standard practice and installed as retrofits in existing vessels. The ports will continue to work with engine manufacturers and shipping companies, and through the TWG process, to further refine the emissions benefits associated with slide valves (new engines and retrofits) as well as other technologies being implemented; 2) in an effort to continue to improve the auxiliary engine loads by vessel mode, a new approach will be considered, in consultation with TWG, based on VBP reported auxiliary loads (actual power of the engine used), by vessel class and by mode instead of using the average installed auxiliary engine power adjusted by applying load factor by vessel class and mode. Under the proposed approach, default loads for auxiliary engines by operating mode will be based on the average of loads for each vessel subclass recorded for vessels boarded. Load Factors will no longer be used as installed power, as this is not a scalable variable by vessel owner and class, which may result in potential over/under estimates of auxiliary engine load. Information from CARB surveys, if available, will also be used for filling any data gaps; 3) the proposed CARB boundary change for the OGV Fuel Regulation will be taken into consideration.

In discussions about the propulsion engine low load adjustments with MAN B&W and Wärtsilä, two of the major marine propulsion and auxiliary engine manufacturers, the engine manufacturers have indicated that the values are significantly higher than they would expect to see during normal engine operation at low loads. The LLA issue will be evaluated with the engine manufacturers during the next cycle of the EI and adjustments will be made as appropriate.

Harbor Craft

The Port will work closely with vessel operators that provide activity data for the entire domain to separate out port-related activity, if possible. The Port will also work with CARB to harmonize GHG emission factors for harbor craft. As a part of data collection enhancement, the Port will strive to obtain engine emission certification for the recently purchased or repowered engines that may be available at the time of purchase or repower.

Cargo Handling Equipment

Due to the economic conditions and other factors, the usage (hours per year) of the CHE can vary from year to year. Since the emissions deterioration is a function of cumulative hours and it is calculated by multiplying the hours per year of the calendar year by the age of the engine for that year, a significant high or low usage can artificially increase or decrease the emissions deterioration compared to past years. In order to be consistent from year to year, a methodology to track past calendar year usage should be developed and used for emissions deterioration calculations. The other option is to request tenants, during data collection process, to provide the cumulative hours for each piece of equipment, but this may prove difficult due to data unavailability and additional burden on the tenants' time.
**Locomotives**

The Port expects to receive information from CARB on the Class 1 railroads’ methods of complying with the MOU requiring an average of Tier 2 emissions in 2010 and later years. This information is expected to include the percentage of line haul locomotives in each tier level, the fleet mix, among locomotives arriving and departing the SoCAB; this will allow the emission estimates to reflect local conditions rather than EPA’s nationwide fleet mix assumptions for the calendar year. The information may also include more specifics on the types of switching locomotives in use by the Class 1 railroads.

**Heavy-Duty Vehicles**

As part of the San Pedro Bay Ports’ Clean Trucks Programs, the container terminals have been collecting truck entry data using RFID technology. This data is collected and correlated with truck-specific information contained in the Drayage Truck Registry that has also been established as part of the truck programs. The RFID/DTR will be used in future years in lieu of OCR/DMV data for evaluating the model year distribution of future Port-related fleets.