



**Environmental  
Management Program  
*White Papers***

*Prepared for:*



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## Executive Summary

As the Port of Hueneme's (Port's) mission statement states, the Port is committed to providing the maximum possible economic and social benefits to the people and communities served by the Port. This commitment includes a responsibility to address the environmental impacts of Port operations. At the request of the Port, E2 has prepared six white papers in order to help the Port build an environmental management program. The white papers address the following six focus areas:

- Community Engagement
- Water Quality
- Marine Resources
- Air Quality
- Soil and Sediment
- Sustainability

Each white paper was developed by defining the focus area, summarizing the regulatory setting, evaluating industry standards at other marine ports, documenting Port of Hueneme's accomplishments, and defining goals and metrics.

Common to each of the white papers were accomplishments already achieved by the Port of Hueneme. Provided below is a select list of some of these accomplishments:

- Active participation in community events and activities
- Applying for and obtaining a \$4.5 million shore side power grant for air quality improvements
- Implementing Phase I of a Stormwater Improvement Plan
- Partnering with the US Navy and USACE to construct the Confined Aquatic Disposal Cell
- Actively monitoring water quality to mitigate impacts to marine life
- Replacement of conventional diesel fueled maintenance vehicles with low emission propane-fueled trucks

With these accomplishments the Port has established a foundation for an environmental management program, though there is more work to be completed. The white papers have identified short and long-term goals and metrics for tracking goals. The most effective way for the Port to advance an environmental management program is by developing implementation or action plans for each of the focus areas identified above.

As defined in the goals and metrics, the proposed action plans will emphasize short and long term strategies, identify resource and budget requirements, evaluate funding strategies, and refine metrics for success in order to move from isolated accomplishments to a more sustainable operation. In moving toward responsible environmental operation and stewardship the Port will be able to share its successes with tenants, operators and the surrounding community.

# Port of Hueneme

## Community Engagement Focus Area White Paper

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## 1.0 Focus Area Overview

As the Port of Hueneme's (Port's) mission statement states, the Port is committed to providing the maximum possible economic and social benefits to the people and communities served by the Port. This commitment includes a responsibility to address the environmental impacts of Port operations. In December 2011, the Oxnard Harbor District Port of Hueneme (Port) formally adopted an environmental policy framework based on the following environmental policy statement.

*"The Oxnard Harbor District shall fully comply and adhere to the California Environmental Quality Act (CEQA), as well as, other applicable local, state, and federal regulations related to the District's operations. The District is committed to managing resources and conducting its business in such a manner as to be both environmentally and fiscally responsible. The District will strive to manage the environmental impacts of port operations on the local community, consistent with CEQA and other regulations, through the implementation of pollution prevention measures and by partnering with vendors and customers that have shared environmental goals."*

The environmental policy framework also contains a set of guiding principles, program goals and a series of focus areas. Community engagement is one of the six focus areas identified in the policy framework.

Community engagement at the Port entails educating and informing the local community about Port operations and the economic and environmental impacts associated with goods movement. Celebrating this commitment to environmental stewardship and the Port's role as an economic engine for the region is an important component of the Port's outreach activities. Community engagement also adds a level of transparency that local communities have come to expect from public agencies and is frankly a part of being a valued neighbor.

Community engagement plays a key role in the Port's ability to successfully operate and develop facilities. Sharing the Port's history as well as economic and environmental goals goes a long way in building relationships with stakeholders. Without local support for Port operations, it is difficult to modernize infrastructure and expand the services offered by the Port. Actively promoting the Port's environmental stewardship efforts is a proven way to build support and trust from the local community and is why community engagement is a component of the Port's environmental policy framework.

The Port actively engages the local community in a variety of ways. These include the sponsorship of community events and associations, providing Port tours, presenting to various community and student groups, and by promoting industry outreach efforts. The following information is intended to highlight the community engagement activities taking place at seaports across California, celebrate the Port's outreach accomplishments and identify goals and metrics for building upon the Port's outreach efforts.





## 2.0 Industry Standards

While there are no industry-recognized regulatory drivers forcing California ports to pursue outreach programs, community engagement plays a pivotal role in a port's ability to achieve both operational and environmental objectives. Recent trends in community engagement may be observed by examining the activities taking place at several California ports. Below are specific examples of these outreach initiatives, including regional- and community-based programs. While it is recognized that many of the ports listed below have different operational drivers and environmental issues to address, each has demonstrated a commitment to educating and informing local communities and stakeholders about port operations. Outreach efforts at these other ports have begun to create a 'new normal' for marine port engagement with neighboring communities.

The following examples begin with ports that share similarities in operational characteristics and size with that of the Port. In addition, a discussion on the outreach activities taking place at the larger California ports is included. These examples are intended to provide a general understanding of the trends in community outreach and highlight the guiding principles in place at the different ports.

### 2.1 Port of San Diego

#### *Trends:*

**Green Port Program** – This program takes a multi-faceted approach to aligning sustainability goals into six key areas: energy, waste management, sustainable development, water, air and sustainable business practices. The Port of San Diego sets annual measurable goals for each area. Through this program, the Port of San Diego was awarded funds to install a cruise ship terminal shore power system.

**Copper Reduction Program** – This program is designed to mitigate the Shelter Island Yacht Basin high copper levels and provide community education opportunities related to alternative hull paints.

**Sustainable Business Practices** – The goal of this program is to give equal weight to environmental, economic and social concerns in the decision-making process. The objective is to increase opportunities for employees and the public to participate in the Green Port Program to learn about ways to be more sustainable, thereby providing numerous outreach possibilities.

#### *Guiding Principles:*

Provide leadership by minimizing environmental impacts from operations on tidelands and ensure a thriving community where people and the environment prosper. To effectively administer the Green Port Policy, the Port of San Diego will strive to:

- Minimize, to the extent practicable, environmental impacts directly attributable to operations on San Diego Bay and the tidelands.



- Strengthen the District's financial position by maximizing the long-term benefits of energy and resource conservation.
- Prevent pollution and improve personal, community, and environmental health.
- Exceed applicable environmental laws, regulations and other industry standards, when possible.
- Ensure that the balance of environmental, social and economic concerns is considered during planning, development and operational decisions.
- Define and establish performance-driven environmental sustainability objectives, targets and programs.
- Monitor key environmental indicators and consistently improve performance.
- Foster socially and environmentally responsible behavior through communications with employees, tenants, stakeholders and the community.
- Collaborate with tenants to develop an integrated, measurable, Bay-wide environmental sustainability effort.

## 2.2 Port of Stockton

### *Trends:*

**Community Open House, Asparagus Festival, Cleanup Day and Tree Planting Programs** – These programs are designed to showcase the Port of Stockton's commitment to environmental initiatives.

**Habitat Preservation and Restoration** – During the last 5 years, the Port of Stockton has invested nearly \$4 million annually in environmental programs such as waterway debris removal, the sponsorship of educational centers, the preservation of refuge areas, and the establishment of permanent habitat.

**Facility Sharing** – At the Port of Stockton, visitors may observe baseball teams practicing in warehouse facilities, the local chapter of Sea Scouts practicing maneuvers, or volleyball teams holding tournaments. The Port of Stockton supports these community programs by donating the use of these facilities.

**Air Quality Program** – This program is designed reduce pollution resulting from maritime and industrial activities at the Port of Stockton. Activities include replacement of older gasoline-powered equipment, operating electric powered dredge, visible emissions monitoring and retrofitting cargo handling equipment with new emissions control technology.

**Water Quality Program** – This program is designed to improve the quality of the local and regional waterways through education, outreach and, when necessary, enforcement.





**Energy Conservation** – Through its Energy Conservation program, the Port of Stockton has begun to produce clean, renewable energy for use by the Port of Stockton and its tenants. Part of this program includes conducting energy audits and recruiting cargo that promotes clean energy technologies.

**Green Tenants** – The Green Tenants program seeks leaseholders that are actively pursuing both financial and environmental sustainability.

### ***Guiding Principles:***

The Port of Stockton is committed to environmental stewardship and enhancement of the Delta and surrounding communities. The Port of Stockton is dedicated to improving the region's quality of life by balancing environmental enhancement with the economic benefits of Port of Stockton activity. These commitments are reflected in the Port of Stockton's Delta Environmental Enhancement program, which aims to enhance air quality, water quality, and wildlife habitats in the Delta and surrounding communities.

## **2.3 Port of Humboldt Bay**

### ***Trends:***

**Conservation Program** – Comprised of a variety of collaborative efforts from fisheries research and wildlife area management to oil-spill co-op coordination and database development, these efforts may foster community education and appreciation for Port of Humboldt Bay programs.

**Adopt-the-Bay** – A program facilitated by the Harbor District, where any individual or group may adopt unique bay habitats and assist with the enhancement and preservation of natural resources. This is a means by which concerned citizens and civic organizations can become a part of enhancing and preserving Humboldt Bay's natural resources and is also a great way to promote civic responsibility while teaching children and adults a sense of pride in the community.

**Member agency of the Statewide Wetlands Monitoring Workgroup** – Over the past 20 years, billions of dollars have been invested in the protection and restoration of wetlands; this group seeks to provide sustainable comprehensive monitoring programs to inform decisions, interpret data, develop a consistent approach and provide a common framework.

### ***Guiding Principles:***

To serve all the people of Humboldt County by promoting harbor use, enhancing recreational opportunities and protecting bay and tidal environments.

The Port of Humboldt Bay website states that a careful balance is required for the Humboldt Bay Harbor District to promote commerce, fisheries, navigation and recreational uses of the bay and protect Humboldt Bay's vast natural resources. The Humboldt Bay Management Plan provides a comprehensive framework for balancing and integrating conservation goals and economic opportunities in a cooperative manner for the management of Humboldt Bay's resources. This Plan serves as a



management guide, planning tool, policy strategy, and reference document to help guide new projects around the Bay. It is a long-term strategy to provide direction, facilitate partnerships and promote stewardship of Humboldt Bay.

## 2.4 Port of Oakland

### *Trends:*

**Breathmobile Support** – Provide financial support to a program like the Breathmobile, an asthma clinic on wheels, which visits local schools to provide convenient and free asthma services.

**Health Risk Assessment Responsibility** – An Environmental Supervisor at the Port of Oakland has been designated the health risk assessment coordinator for the Port of Oakland. The current assigned staff person holds graduate degrees in public health and, as a Certified Industrial Hygienist, is experienced in analyzing and communicating health risks.

**Participate in Public Air Quality Policy and Funding Forums** – Continue participation in established forums that share information on maritime air quality issues, technologies, policies, programs and funding.

**Energy Rebate Program** – Funded by sales revenue, this program finances solar and photovoltaic rebates for the public.

**Truck Replacement Project** – Port of Oakland-provided funds replaced older drayage trucks with new lower emission powered vehicles.

**Habitat Restoration and Park Development** – A number of wetland projects have been completed under this program creating a number of educational and recreational spaces for the surrounding community to enjoy.

**Clean Water Program** – This project collaborates with tenants and other stakeholders to provide awareness about water pollution problems.

### *Guiding Principles:*

While the Port of Oakland did not have a readily available mission statement, they do have a division called Social Responsibility. The Social Responsibility Division is responsible for balancing Port of Oakland economic development and social justice by implementing policies, programs and collaborative efforts in the local community. There are three core areas that support this vision:

- Providing the local community with access to business and workforce opportunities;
- Ensuring that Port of Oakland contractors, vendors and tenants fulfill their regulatory compliance requirements (i.e., federal, state and local mandates); and
- Ensuring that the Port of Oakland is engaged with its community.



## 2.5 Port of San Francisco

### *Trends:*

**Community Advisory Groups** – In San Francisco, successful outcomes are founded on open dialog and diverse partnerships with the many people, organizations and agencies that share a deep interest in improving the Port of San Francisco waterfront for the public. The Port of San Francisco has set up several Advisory Committees made up of community stakeholders for all areas along the waterfront. The Advisory Committees meet regularly and provides a public forum for interested citizens to participate. Anyone can participate by contacting the Port of San Francisco staff member listed for the Advisory Committee to request a notice of future meetings and events.

**Stormwater Management** – Targeted for the areas draining directly in to the Bay, the Stormwater Management Plan provides best management practices.

**Wetland Restoration** – The Wetland Restoration project was implemented to enhance, expand and preserve the local wetlands.

**Heron's Head Park** – The renovation of Pier 98 provides the locals and visitors Heron's Head Park, an educational and recreational area attracting thousands of people each year.

**Pier 94 Wetlands** – This area provides rare and valuable habitat in a highly industrialized portion of San Francisco's shoreline.

### *Guiding Principles:*

The Port of San Francisco embraces environmental and community stewardship of the San Francisco Waterfront while promoting the infrastructure development necessary to maintain and expand the Port of San Francisco's operations. To meet this commitment, the Port of San Francisco has dedicated a staff of professionals to manage environmental and land use planning activities. All Port of San Francisco projects incorporate broad community outreach to solicit public input on how policies and development should occur along the waterfront.

## 2.6 Port of Long Beach

### *Trends:*

**The Green Port Policy** – The Green Port Policy was adopted in January 2005 and serves as a guide for decision making and established a framework for environmentally friendly Port operations. The Green Port Policy is an aggressive, comprehensive and coordinated approach to reduce the negative impacts of Port operations.

**Mitigation Grant Programs** – As part of a comprehensive strategy to offset the impacts of Port of Long Beach-related operations in the community, primarily air pollution risks for vulnerable groups such as children and seniors, eligible projects include air filtration systems at schools, daycare centers, and



educational programs at senior health-care centers. Funding is currently in place for these and additional greenhouse gas-reduction projects.

**Wildlife** – This program provided funding towards Bolsa Chica wetland restoration project, which is a major educational and recreational area attracting visitors from throughout the region.

**Education** – A dedicated partner in the community and strong supporter of education, the Port of Long Beach has established a number of diverse programs for students of all ages, from tours and activities for elementary school students to scholarships for college students majoring in international business. This comprehensive program provides educational curriculum, activities, field trips, internships, and classroom guest speakers.

### ***Guiding Principles:***

The Port of Long Beach’s mission is to remain an innovative provider of premier seaport facilities that enhance economic vitality and improve quality of life and the environment. To this end, one of their goals is to engage three key stakeholders – the community, international trade industry and government agencies. The Port of Long Beach will endeavor to create specific outreach programs to build positive relationships that foster mutual understanding.

## **2.7 Port of Los Angeles**

### ***Trends:***

**Community Newsletter** – Published by the Public Affairs Division, the Main Channel, a quarterly newsletter serving neighboring communities, keeps the locals up to date on projects, programs, planned development, community meetings, and features key information for stakeholders.

**Points of Interest Map and Podcast** – Visitors can explore the Port of Los Angeles at their own pace with a map indicating points of historic interest and listen in to a podcast.

**Speakers Bureau** – Speakers are available on a variety of topics for adult groups.

**Summer Concerts on the Waterfront** – Every Thursday from June to September, the public can enjoy an evening of free music and entertainment.

**Public Art Program** – As the Port of Los Angeles moves forward with one of the most significant community revitalization efforts in its history – development of a vibrant L.A. Waterfront – its public art program is envisioned as integral to these local enhancement and beautification efforts.

**Port Community Advisory Committee** – The purpose of the Community Advisory Committee is to assess the impacts of Port of Los Angeles developments on harbor area communities and to recommend suitable mitigation measures. In addition, the committee also reviews past, present and future environmental documents in an open public process and makes recommendations. The committee also makes recommendations to assist the Port of Los Angeles in taking a leadership role in creating balanced communities in Wilmington, Harbor City and San Pedro to preserve the quality of life.



**TransPORTer** – This 53-foot mobile museum makes appearances at select community events. A fully-contained mobile exhibit, the TransPORTer features ship to shore computer simulation, an interactive map of ship and goods movements, electronic games, video-taped oral histories and “sounds of the port.”

**Educational Programs** – From the roaming TransPORTer educational exhibit, to sponsorship of in-school curriculum programs, school boat tours, sailing programs and educational events, the Port of Los Angeles provides resources and experiences that broaden students’ view of the Southern California region, international commerce and their future career possibilities.

### ***Guiding Principles:***

The Port of Los Angeles is committed to facilitating global trade while protecting the environment. Achieving this balance requires far-reaching vision and 24/7 commitment. From controversial but revolutionary initiatives like the Clean Truck Program, to numerous efforts to reduce fossil fuel consumption and greenhouse gas emissions, the Port of Los Angeles is a leader in environmental management strategies. While operations and the capacity to conduct outreach programs at the Port of Los Angeles are on a different scale than at the Port of Hueneme, the following programs illustrate an ongoing commitment to informing its stakeholders.

While many of these programs may not be appropriate for the Port, they provide value as a baseline by which other ports engage their respective communities. Although the operational scale is different from that at the Port, these ports are essentially driving towards the same goal – to educate and inform their stakeholders.



## 3.0 Accomplishments

The Port is an active participant in a number of community events and activities. The Port demonstrates its commitment to community engagement by conducting a wide range of outreach activities. The following outlines several events and actions taken by the Port to educate and inform its community and stakeholders about Port operations.

### 3.1 Waterfront Promenade

The Shore Protection Repair and Waterfront Access Project was a cooperative endeavor between the Port and the City of Port Hueneme/Surplus Property Authority to repair the revetment and improve pedestrian access along the Port's southern waterfront. The Port contributed approximately \$5 million to this important community access project. The 3,000-foot pedestrian and bike path connects existing paved pathways at Hueneme Beach to the lighthouse on the point at the water's edge near the entrance to the Port of Hueneme.

### 3.2 Partnership with Oxnard Union High School District

The Port is currently working with the Oxnard Union High School District (OUHSD) to develop a program to provide mentoring and job skills training for students. The program goal is to assist the students in enhancing their education as well as developing their skills and awareness regarding the jobs skills necessary for the goods movement industry. The program also seeks to educate and inform students about the relevance and value of international trade and logistics. The program presents a hands-on approach to learning with a mix of classroom and field activities. The program is also intended to create a broader perspective on the value of international trade to our community.

### 3.3 Sponsorships

Sponsorships are a major vehicle for the Port to actively participate in the community events. Examples range from membership in local associations to hosting events and tours. The following is a list of events and associations the Port actively supports.

***Beach Festival*** – Sponsor and vendor

***City of Oxnard Downtown Merchant Association Summer Concert Series*** – Sponsor

***Chamber of Commerce Military Appreciation Mixer*** – Sponsor and host

***Neighborhood for Learning Committee – Port Hueneme/Oxnard*** – Sponsor

***Oxnard Chamber of Commerce*** – Member

***Port Hueneme Chamber of Commerce*** – Member





***Military Appreciation Dinner*** – Sponsor

***State of the City Presentation*** – Sponsor

***Chamber Installation Gala*** – Sponsor

***Oxnard Economic Outlook Presentation*** – Sponsor

***Oxnard Chamber Business Expo*** – Sponsor

### 3.4 Tours and Visitors

From elementary-school students to working professionals, the Port is actively leading visitor groups on in-depth tours of Port operations. In 2011, more than 450 individuals visited and toured the Port property. The Port has prepared and made available via their website a variety of educational materials including Port operational glossaries and creative vocabulary quizzes focusing on specific Port goods. The educational programs are particularly designed to expose students to goods movement careers and create a sense of appreciation within those students and their families. The groups that regularly tour the Port include:

- Elementary schools
- High Schools
- Ventura Community College
- California Lutheran University MBA Class

### 3.5 Speaking Engagements

Port staff is available to speak about Port operations at local events and luncheons. Presentations are regularly held for groups such as the Kiwanis, Lions and Rotary clubs. The Port also actively engages a number of school groups and Home School Associations.

### 3.6 Industry Outreach

The Port also supports the efforts of its industry partners to engage the local community. Many of the Port's partners participate in events and notable projects that serve to increase awareness and foster relationships between the community and industry. The following outlines several examples:

- In 2000, the local individual longshoremen made Christmas a very special time of year for 17 children at Nueva Vista. Nueva Vista is a school for students struggling within traditional school environments. The longshoremen purchased Christmas gifts from request lists, wrapped the gifts and treated the students to a local restaurant-sponsored lunch.
- The Port has been recognized for its partnership with the U.S. Navy and the U.S. Army Corp of Engineers on a Confined Aquatic Disposal project to clean sediment within the harbor.



- In 2009, the Port held a welcoming celebration and toured a delegation from its sister port in Qinhuangdao, China throughout the Port.
- In 2007, officials from the Oxnard Harbor District and City of Port Hueneme held a groundbreaking dedication ceremony initiating construction on the Shore Protection Repair & Waterfront Promenade Project connecting Hueneme Beach and the Hueneme Lighthouse.



## 4.0 Goals and Metrics

The information presented above is intended to provide the necessary background and context for building upon the Port's outreach accomplishments by establishing clear, attainable, and measurable goals related to this focus area. Clearly defined goals and metrics are critical to advancing environmental programs and community engagement activities at the Port.

### 4.1 Community Engagement Action Plan - Short Term Goals

#### 1) Create a Communication and Outreach Strategy

Develop a communication and outreach strategy to educate and inform the community about Port operations.

The metric used to evaluate progress toward this goal:

- Community opinion survey

The following identifies a path to achieving this goal:

- Expand the use of existing tools (i.e. press releases, media events, publications, etc.)
- Solicit community feedback via a community survey
- Expand the Ports presence at local events
- Develop Budget

#### 2) Activate Port Website

Activate the Port's website by updating it weekly with current and future events. The Port is already doing a number of things that could be advertised and celebrated. Ensuring the community is aware of the Port's participation is an important aspect of the community engagement program.

The metric used to evaluate progress toward this goal:

- Measure website traffic and analyze trends

The following identifies a path to achieving this goal:

- Redesign/modernize Port website
- Regularly update homepage with news and events



- Celebrate successes and partnerships
- Post photos and details about outreach activities to illustrate the ports active community engagement.
- Make website a resource for information

### 3) Develop a Social Media Strategy

Develop a social media strategy to better connect with students, community groups and industry stakeholders. Social media tools like LinkedIn, Twitter, YouTube, and Facebook are proven and cost effective.

The metric used to evaluate progress toward this goal:

- Attendance at events promoted via social media
- The number of stakeholder subscribing to the port accounts

The following identifies a path to achieving this goal:

- Identify social media tools
- Develop plan that includes who will actively post and monitor sites and how information will be generated for the sites

### 4) Formalize Participation in Community Programs

The Port participates in and supports a wide variety of activities in an effort to have direct contact with the community and the stakeholders it serves. The Port should consider leveraging the marketing and promotional opportunities available from event sponsorships and association memberships. These engagements are educational opportunities for students, citizens and industry stakeholders.

The metric used to evaluate progress toward this goal:

- Track the number of attendees at sponsored events and association functions.
- Track the number of events attended
- Track website activity

The following identifies a path to achieving this goal:

- Identify what type of events are most relevant and meaningful for the Port to participate in



- Identify a network of events the Port should participate in
- Leverage volunteers to increase presence
- Consider developing an internship program

## 5) Community and Stakeholder Engagement

Community and stakeholder engagement is about building relationships and ensuring strong support for port programs and initiatives.

The metric used to evaluate progress toward this goal:

- Community support for Port programs and events

The following identifies a path to achieving this goal:

- Develop a community stakeholder task force
- Solicit community feedback via a community survey

## 4.2 Community Engagement Action Plan - Long Term Goals

### 6) Develop an Open House Style Event

Similar to the Oxnard Salsa festival, or the Port of Long Beach Green Port Festival, develop a strategy to create an open house for the Port. This could also be accomplished by partnering with the Beach Festival event.

The metric used to evaluate progress toward this goal:

- Event attendance

The following identifies a path to achieving this goal:

- Identify event scope
- Identify funding source and potential partners

### 7) Develop a Technology Advancement Program

Explore opportunities to develop a technology advancement program. The program could help evaluate and even demonstrate new technologies that help reduce air emissions. The program would serve as an incubator for new ideas, programs and technologies that support the environmental and economic goals of the Port.



The metric used to evaluate progress toward this goal:

- Industry and stakeholder support

The following identifies a path to achieving this goal:

- Identify funding sources
- Identify potential partners
- Develop program scope





## 5.0 Conclusion

The Port plays a valuable role in the health and viability of the local and regional economies. The Port takes very seriously its role as an active community partner and as an environmental steward. Promoting the Port's environmental stewardship efforts is a proven way to build support and trust from the local community and is why community engagement is a component of the Port's environmental policy framework.

# Port of Hueneme

## Air Quality Focus Area

### White Paper

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## 1.0 Focus Area Overview

As the Port of Hueneme's (Port's) mission statement suggests, the Port is committed to providing the maximum possible economic and social benefits to the people and communities served by the Port. This commitment includes a responsibility to address the environmental impacts of Port operations. The Port, along with the goods movement industry, regulatory agencies and community, must work together to manage and reduce the air pollutants associated with port operations.

In 2009, the Port voluntarily prepared an Air Emissions Inventory (EI) based on the Port's 2008 activity levels. In quantifying the air quality impacts from the Port's maritime operations, the EI identifies ocean going vessels (OGVs), harbor craft, heavy-duty drayage trucks, on-road mobile sources, and cargo handling equipment (CHE) as the major emission sources associated with the Port's operations.

OGVs calling at Port terminals are the largest emissions sources at the Port. Types of OGVs visiting the Port include auto carriers, RoRo (roll on/roll off vessels), reefer (refrigerated vessels), tankers, and general cargo vessels. Marine fuel combustion in the onboard OGV propulsion engines, auxiliary engines, and auxiliary boilers is the source of the emissions generated in OGVs.

Harbor craft are commercial vessels that operate mostly within or near a port. Harbor craft working in the Port include tugboats, commercial fishing vessels, charter fishing vessels, as well as crew and supply boats. The harbor craft use both propulsion and auxiliary engines in routine operations. Exhausts from onboard main (propulsion) engines, auxiliary engines, and auxiliary boilers are the source of the emissions associated with harbor craft.

Heavy-duty drayage trucks are diesel-fueled trucks that transport marine cargo, containers, or transport chassis. The Port's maritime operations create demand for truck trips transporting cargo between marine terminals, local distribution centers and the nearby US-101 freeway. Refrigerated trailers, built to accommodate the transfer of refrigerated cargo, are the most common type of tractor trailers at the Port. Diesel fuel combustion in truck engines is the source of emissions generated in heavy-duty drayage trucks.

Other on-road mobile sources at the Port include stevedore vans used to shuttle employees within Port property, vehicle distribution center vans used to shuttle drivers to/from auto rolling stock and vehicle distribution facilities, and employee vehicles driven to and from the Port. Combustion of fuel in these gas-fueled vans and passenger automobiles generate criteria pollutant and greenhouse gas (GHG) emissions.

Cargo handling equipment is off-road equipment used to transfer goods or perform maintenance and repair activities. The majority of the equipment operating at the Port includes cranes, forklifts, lift trucks, top picks, and tractors. Cargo handling equipment can be diesel, gasoline, alternative fuel, or electrically powered. Fuel combustion is the source of emissions from this equipment. Although this



equipment is not a large emissions source in the Port, these emissions are generated in proximity to workers and the local community.

The following section describes the regulatory setting for Port operations and summarizes regulations applicable to the major emissions sources at the Port. The regulatory setting is followed by a review of Industry Standards being set by other California ports. Next, the Port's air quality related accomplishments are discussed followed by a review of goals and metrics for this focus area.



## 2.0 Regulatory Setting

The responsibility for regulating port-related air emission sources is shared among federal, state and local regulatory agencies. While the United States Environmental Protection Agency (EPA) retains federal authority by means of an oversight role, the California Air Resources Board (CARB) has been delegated the authority to implement many of the federal programs and is responsible for establishing and reviewing California's air quality standards. CARB also regulates mobile emissions sources in California, such as construction equipment, ships, trains, trucks, and automobiles, and oversees the activities of local air quality management districts. The Ventura County Air Pollution Control District (VCAPCD) is the CARB-appointed regional agency with jurisdiction over the Port, and it is responsible for bringing the area into compliance and/or maintaining air quality within federal and state air quality standards.

A summary of the key applicable regulations or treaties specific to the Port's emission sources are presented in the following sections.

### 2.1 Ocean-Going Vessels

International, federal, and state agencies are addressing emissions from marine engines in two ways, fuel standards and emission limits.

#### *International Maritime Organization Standards to Reduce Emissions from OGVs*

The International Maritime Organization (IMO) is a United Nations specialized agency that promotes maritime safety and maritime pollution prevention. In 1997, the IMO adopted Tier 1 standards for nitrogen oxide (NO<sub>x</sub>) and sulfur oxide (SO<sub>x</sub>) emissions from marine vessels in Annex VI to the International Convention for the Prevention of Pollution from Ships (MARPOL). The Tier 1 standards entered into force in May 2005 and apply retroactively to specified marine engines already installed on vessels.

In 2008, IMO adopted the 2008 Annex VI Amendments, which introduce Tier II and Tier III NO<sub>x</sub> emissions standards for new engines and new fuel quality requirements beginning in 2010. The Tier II NO<sub>x</sub> standards apply globally to new or retrofitted marine engines built from 2011 to 2015, while the Tier III standards only apply to NO<sub>x</sub> Emission Control Areas (ECAs) for new or rebuilt marine engines built in 2016 or later. The amended Annex VI also establishes global limits on marine fuel sulfur content that will reduce the current limit of 4.5 percent to 3.5 percent by 2012, and further reduce limits to 0.5 percent by 2020 or 2025 (this will be decided by a technical review in 2018). On March 26, 2010, the IMO officially designated waters off North American coasts (out to 200 miles) an ECA, in which stringent ECA emission standards and fuel requirements become enforceable to OGVs. In the ECAs, sulfur content was limited to 1.0 percent in 2010, and will be reduced to 0.1 percent in 2015.





## *EPA Regulations to Reduce Emissions from OGVs*

The EPA has established tiered emission standards for new and rebuilt marine diesel engines. Tier I emission standards for Category 3 (at or above 30 liters per cylinder) marine diesel engines built in 2004 became effective in 2004. In 2010, the EPA adopted more stringent Tier II and Tier III emission standards for newly built Category 3 marine diesel engines, which is equivalent to the IMO standards. The Tier II standards were applied to newly built and rebuilt engines beginning in 2011 and the Tier III standards will apply to newly built and rebuilt engines beginning in 2016 to achieve an 80 percent reduction in NO<sub>x</sub> emissions below the Tier I levels.

**Table 1 Tiered Emissions Standard**

Tier	Date	NO <sub>x</sub> Limit, g/kWh		
		n < 130	130 ≤ n < 2000	n ≥ 2000
Tier I	2000	17.0	45 · n <sup>-0.2</sup>	9.8
Tier II	2011	14.4	44 · n <sup>-0.23</sup>	7.7
Tier III	2016†	3.4	9 · n <sup>-0.2</sup>	1.96

† In NO<sub>x</sub> Emission Control Areas (Tier II standards apply outside ECAs).

## *CARB Regulations and Programs to Reduce Emissions from OGV*

### **Cold Ironing**

In 2007, CARB adopted the At-Berth Ocean-Going Vessels Regulation. The regulation seeks to reduce at-berth emissions from diesel auxiliary engines on container vessels, passenger vessels, and refrigerated cargo vessels by 80 percent by 2020. The regulation provides vessel fleet operators two options to reduce at-berth emissions from auxiliary engines:

- Turn off auxiliary engines and connect to an alternative source of power (i.e. grid-based shore power)
- Use alternative control techniques that achieve equivalent emission reductions

### **Marine Fuel Regulation**

In 2008, CARB adopted a marine fuel regulation to reduce diesel particulate matter (DPM), NO<sub>x</sub>, and SO<sub>x</sub> emissions from OGVs. The regulation requires the use of low sulfur marine distillate fuels for OGV propulsion engines, auxiliary diesel engines, and auxiliary boilers within 24 nautical miles (nm) of the California coastline. This low sulfur fuel regulation consists of a Phase I fuel requirement that required the use of marine diesel oil (MDO) at or below 0.5 percent and sulfur or marine gas oil (MGO) at or below 1.5 percent sulfur beginning on July 1, 2009. The Phase I fuel requirement will further reduce the MGO sulfur content limit to 1.0 percent beginning in August 2012. Per amendments to this regulation in June 2011, the Phase II fuel requirement of this regulation requires reducing both MDO and MGO sulfur limits to 0.1 percent beginning on January 1, 2014.



**Table 2 Fuel Limits**

Fuel Requirement	Effective Date	Percent Sulfur Content Limit
Phase I	July 1, 2009 <sup>1</sup>	Marine gas oil (DMA) at or below 1.5% sulfur; or Marine diesel oil (DMB) at or below 0.5% sulfur
	August 1, 2012 <sup>2</sup>	Marine gas oil (DMA) at or below 1.0% sulfur; or Marine diesel oil (DMB) at or below 0.5% sulfur
Phase II	January 1, 2014 <sup>3</sup>	Marine gas oil (DMA) or marine diesel oil (DMB) at or below 0.1% sulfur

## 2.2 Harbor Craft

### *EPA Emission Standards for Harbor Craft Engines*

The EPA has established tiered marine diesel engine standards for Category 1 and 2 diesel engines rated over 50 horsepower (hp) used for propulsion in most harbor craft. Tier 1 standards were phased in from 2004 to 2006; while the Tier 2 standards were phased in from 2004 to 2007 for new and rebuilt engines. In March 2008, the EPA released its final rulemaking for new and rebuilt marine engines that are used primarily in commercial harbor craft. This regulation sets the Tier 3 and Tier 4 emission standards for Category 1 and 2 marine diesel engines. The Tier 3 standards are phasing in from 2009 to 2014, while the Tier 4 standards with an emphasis on the use of emission after-treatment technology will be phased in beginning 2014.

**Table 3 Category 1 and 2 Marine Diesel Engine**

Tier	Phase-In Period
1	2004-2006
2	2004-2007
3	2009-2014
4	Starting from 2014

### *CARB Regulation to Reduce Emissions from Diesel Engines on Commercial Harbor Craft*

In 2007, CARB approved a regulation to reduce DPM and NOx emissions from diesel engines on commercial harbor craft vessels operating within 24 nm of the California coastline. This regulation, effective in 2009, requires that all newly acquired or replacement engines must meet the applicable EPA Tier 2 or Tier 3 standards (or Tier 4 in certain cases). Existing engines on ferries, excursion vessels, tugboats, and towboats (and crew and supply, barge, and dredge vessels per amendments to this regulation in 2010) are also required to meet the EPA Tier 2 or Tier 3 standards per a compliance



schedule set by CARB. In addition, the regulation requires installing the best available control technologies (BACT) on the propulsion engines on all new ferries that have a specific capacity and are acquired after January 1, 2009.

In 2004, CARB established a low sulfur diesel fuel requirement for harbor craft. The sulfur content limit of 15 parts per million (ppm) went into effect in the South Coast Air Quality Management District in January 2006, and applied to harbor craft in the rest of the state from January 2007.

### **2.3 On-Road Heavy-Duty Trucks**

In 2001, CARB adopted EPA's stringent emissions standards for any post-2006 on-road heavy-duty vehicle, which will ultimately reduce the NO<sub>x</sub> and DPM emissions by 90 percent. In order for retrofit technologies (i.e. diesel particulate filters) to operate effectively, CARB promulgated the low sulfur fuel regulation in 2003. This regulation requires use of ultra-low-sulfur diesel fuel in any on-road and off-road diesel engines (excluding locomotive and marine diesel engines) beginning in 2006.

As the increasingly stringent emissions standards for diesel engines requires sophisticated emission controls, CARB adopted a regulation in 2005 to require manufacturers of heavy-duty engines to employ on-board diagnostic technology to ensure that emission controls are functioning properly. This regulation phases in beginning with the 2010 model year and full implementation is expected by 2016.

In addition, CARB approved the Heavy-Duty Vehicle Idling Emission Reduction Program in 2005 to further reduce emissions of toxics and criteria pollutants by limiting idling of new and in-use registered sleeper berth equipped diesel trucks. The regulation consists of new engine and in-use truck requirements and emission performance standards for idle reduction technologies. The new engine requirements require 2008 and newer model year heavy-duty diesel engines to be equipped with a non-programmable engine shutdown system that automatically shuts down the engine after five minutes of idling or optionally meet a stringent oxides of nitrogen idling emission standard. The in-use truck requirements require operators of both in-state and out-of-state registered sleeper berth equipped trucks to manually shut down their engine when idling more than five minutes at any location within California beginning in 2008.

In an effort to reduce air emissions associated with goods movement, CARB adopted the Drayage Truck Regulation in 2008 and set emission standards for in-use, heavy-duty diesel-fueled vehicles that transport cargo to and from California's ports and intermodal rail facilities. This regulation requires drayage truck owners to ensure that their trucks meet certain emission standards in order to reduce air pollutant emissions, and in particular, to reduce DPM emissions by 85 percent. In addition to completing truck upgrade actions by certain deadlines, all drayage truck owners had to register in the CARB Statewide Drayage Truck Registry by September 30, 2009.

After adopting the Drayage Truck Regulation, CARB also adopted its Truck and Bus Regulation in 2008 for existing on-road diesel vehicles operating in California. The regulation establishes phase-out deadlines for all heavy-duty diesel trucks, comparable to the deadlines in the Drayage Truck Regulation.



Although the Statewide Truck and Bus Regulation targets primarily non-drayage trucks, it does establish two deadlines for drayage trucks of engine model years 2004-2006, an age group not addressed in the earlier Drayage Truck Regulation.

## 2.4 Other On-Road Mobile Sources

### *EPA Emission Standards for On-Road Mobile Sources*

In order to reduce harmful air pollution from passenger vehicles, the EPA adopted tiered exhaust emissions standards and sulfur fuel standards for this emission source. In 2000, the EPA adopted the Tier 2 Vehicle and Gasoline Sulfur Program that requires new passenger vehicles to meet more stringent emissions standards. The Tier 2 emission standards apply to all light vehicles, regardless of whether they run on gasoline, diesel, or alternative fuels. Additionally, this program requires gasoline refiners and importers to reduce the sulfur content of gasoline sold in the U.S to ensure the effectiveness of low-emission control technologies in vehicles

### *CARB On-Road Vehicle Regulations*

To reduce emissions from on-road motor vehicles, CARB adopted the Low Emissions Vehicle regulation (LEV I) in 1990 and its amendment (LEV II) in 1998 to establish progressively more stringent exhaust emissions standards for passenger cars, light-duty trucks, and medium-duty passenger vehicles. As of December 2011, CARB is considering amendments to this regulation (LEV III) providing more stringent tailpipe and GHG emission standards for new passenger vehicles. In regards to fuel regulations, CARB has adopted and implemented three phases of reformulated gasoline requirements (CaRFGs) from 1991 to 1999. This regulation sets stringent standards for California gasoline that produced cost-effective emissions reductions from gasoline-powered vehicles.

## 2.5 Cargo Handling Equipment

To reduce DPM and NO<sub>x</sub> emissions from off-road diesel equipment (including CHE), the EPA and CARB established a series of increasingly cleaner and more stringent emission standards for new off-road diesel engines. The Tier I, Tier II, and Tier III emissions standards had been phased in by 2008. The Tier IV standards, which include a 90 percent reduction in PM and 60 percent of NO<sub>x</sub>, are being phased in from 2008 to 2015.

Besides heavy-duty trucks, cargo handling equipment vehicles are also subject to the ultra-low-sulfur fuel regulation adopted by CARB in 2003. In addition, CARB approved a regulation in 2005 to reduce emissions from mobile cargo equipment vehicles operating at California's ports, and intermodal rail yards. This regulation, effective January 2007, calls for the replacement or retrofit of existing engines with ones that use best available control technology, to reach 2007/2010 on-road or Tier 4 non-road emission standards.



## 3.0 Industry Standards

To ensure compliance with federal, state, and local regulations, California ports have developed and implemented a wide variety of air quality programs and emissions control measures to promote air quality within the ports. In an effort to evaluate air quality programs at similar California ports (e.g., benchmarking), brief descriptions of programs implemented at the Port of San Diego, Port of Richmond, and Port of Stockton are presented in the following sections. In addition, a summary of air quality programs underway at larger California ports is also provided below.

### 3.1 Port of San Diego

The Port of San Diego serves as a transshipment facility for the San Diego Bay, located about 96 nm southeast of Los Angeles and just north of the United States-Mexico border. The Port of San Diego oversees two maritime cargo terminals, a cruise ship terminal, 17 public parks, various wildlife reserves and environmental initiatives, a Harbor Police department, and the leases of more than 600 tenant and sub-tenant businesses around San Diego Bay. The two marine cargo facilities administered by the Port of San Diego are the National City Marine Terminal, which is a 125-acre, seven berth facility that mainly handles vehicles; and the Tenth Avenue Marine Terminal, which is a 96-acre, multi-purpose eight berth facility that handles inbound cargo including refrigerated commodities, fertilizer, cement, break bulk commodities, and forest products.

One of the Port of San Diego's responsibilities is to protect the bay and its resources. In 2006, the Port of San Diego voluntarily conducted an EI and identified that the two main port-related contributors to air pollution were OGVs (cruise and cargo vessels) and heavy-duty drayage trucks. Subsequently, the Port of San Diego developed the Clean Air Program that addresses air pollution generated at the port-operated cruise ship terminal and the two cargo marine terminals. Under the Clean Air Program, the Port of San Diego implemented four control measures:

- 1) Shore power for OGV that enables ships to turn off the diesel engines and connect to electric power when at berth;
- 2) Truck replacement/retrofits program that implements replacement or retrofitting of older trucks and a ban of trucks not in compliance with the state's emissions requirements;
- 3) Replacement or retrofits of cargo handling equipment program; and
- 4) A voluntary vessel speed reduction (VSR) program that asks cruise and cargo vessels entering or leaving San Diego Bay to observe a slower speed, where their engines run most efficiently.

The first shore power system at the Port of San Diego was installed in December 2010, and over 23 tons of emissions have been reduced during the 2010 cruise season as a result. This serves the same





environmental benefit to the region as removing 400 cars from the road each day when a ship is connected. Since 2011, 97 percent of the trucks visiting the cargo terminals have been in compliance with the state's emission requirements. To date, 59 percent of cruise ship and cargo vessel calls to the Port of San Diego have participated in the VSR program, which results in an 11 to 14 percent reduction in air pollutants from these vessels. The Port of San Diego also continues to implement the tenant-owned cargo handling equipment retrofit and/or replacement program that maximizes available/potential funding. In 2008, the Port of San Diego developed a Green Port Program to set measurable goals and evaluate each resource area (including air quality) on an annual basis. With the Commuter Assistance Program, the Port of San Diego also encourages air emission reductions by providing employees full reimbursement for public transportation.

### 3.2 Port of Richmond

The Port of Richmond is located approximately 9 miles from the Golden Gate on the east shore of San Francisco Bay and is easily accessible by the Richmond Harbor Channel. The Port of Richmond encompass five city-owned terminals and ten privately owned terminals that handle a wide range of cargo including liquid and dry bulk commodities, metals, automobiles and break-bulk cargoes. Today, the Port of Richmond ranks number one in liquid bulk and automobile tonnage among ports on San Francisco Bay.

Based on their EI developed in 2005, the Port of Richmond finalized a Clean Air Action Plan (CAAP) in 2010 to develop and recommend feasible, cost-effective strategies and programs to reduce air emissions and health risks from the port operations. The Port of Richmond has identified and is currently evaluating several potential emission reduction measures including: 1) vessel speed reduction program that request vessels to slow down from 15 knots to 12 knots; 2) application of the Advanced Maritime Emissions Control System (AMECS) that capture and treat vessel exhaust emissions; 3) replacement/retrofit program that achieves 2007 emission standards through the replacement and /or retrofitting of older trucks; 4) onsite renewable energy generation systems that utilize solar and other renewable energy for the use by the port and its tenants; 5) employee transit and alternative transportation program that promotes ridesharing and the use of public transit.

In implementing their CAAP, the Port of Richmond commits to tracking emissions reduction progress and ensuring regulatory compliance by periodically updating port-wide emissions inventories and regularly contacting CARB regarding proposed regulations pertaining to the Port of Richmond. While evaluating the potential emissions reduction measures for possible implementation at the port, the Port of Richmond will pursue Proposition 1B grant funding through both the California Transportation Commission and CARB or Bay Area Air Quality Management District (BAAQMD) for freight handling improvements.

### 3.3 Port of Stockton

The Port of Stockton is located on the Stockton Deepwater Ship Channel, 75 nm (120 kilometers [km]) due east of the Golden Gate Bridge. The Port of Stockton is 1 mile from Interstate 5 and all



interconnecting major highway system, and has its rail services provided by two transcontinental railroads. It owns and operates a diversified and major transportation center that encompasses a 2,000-acre operating area. The Port of Stockton has berthing space for 17 vessels, 1.1 million square feet of dockside transit sheds and shipside rail trackage, 7.7 million square feet of warehousing for both dry bulk and general cargoes, including steel.

As the Port of Stockton is located in San Joaquin County, which has been identified as a “non-attainment” area for several air pollutants, it is continuously looking for ways to reduce air emissions associated with its maritime operations. As part of the Healthy Air Living Campaign to achieve daily emission reduction, the Port of Stockton has teamed with the San Joaquin Valley Air Quality Management District (SJVQMD) to develop and implement strategies including: energy audit to improve energy efficiency and onsite food service, dry-cleaning pick-up service, and video conferencing to minimize port staff’s vehicle trips. The Port of Stockton has replaced four older gasoline powered trucks with new, zero-emission electric vehicles for use on the docks.

The Port of Stockton is also working with tenants and the SJVQMD to re-power and/or retrofit existing equipment with lower emitting engines for improved air quality. For dredging activities, the Port of Stockton’s contractors have switched to operate an electric rather than diesel-powered dredge. It has also finalized its Truck Traffic Control Plan to ease traffic congestion and reduce emissions at the Port of Stockton. As ongoing activities, the Port of Stockton regularly sends staff to training for certified visible emission reading so that they can assist with regulatory compliance and enforcement by monitoring vessel emissions and identifying violators. Lastly, through education and outreach to tenants and vessel operators, the Port of Stockton encourages proper maintenance, operational controls, and the use of alternative fuels.

### 3.4 Other Ports

In addition to the three ports discussed above, larger California ports are also committed to maintaining environmentally sound maritime practices and developing environmentally-friendly port operations. These ports work closely with local jurisdictions, local communities and other interests to promote air quality improvements through new technology research and development and public education. In addition, they have developed a number of effective emissions reduction programs and measures to ensure port operations meet or exceed compliance with federal, state, and local regulatory requirements.

Jointly, the Ports of Long Beach and Los Angeles adopted a Clean Air Action Plan in 2007 that outlines a comprehensive approach to mitigating the air quality impacts of goods movement activities. To reduce emissions from OGVs, the Ports of Long Beach and Los Angeles have implemented four control measures, which include a vessel speed reduction program, shore power generation project, and low-sulfur fuel incentive programs for vessel main engines, auxiliary engines, and auxiliary boilers. To further reduce emissions from OGVs, the Ports of Long Beach and Los Angeles are currently working with technology vendors and shipping industry to develop additional control measures: preferential deployment and technology/operational changes for existing fleet. The two ports have implemented





Clean Trucks Program, Diesel Emission Reduction Programs, and other replacement/retrofit programs to reduce emissions from drayage trucks and cargo handling equipment. To further improve air quality at the ports, the two ports have developed green port lease requirements that incorporate environmental measures into all new leases, and maximize clean fuels and low-emission construction equipment used at the ports. Furthermore, the Port of Long Beach conducts vessel excessive smoke citations to minimize or eliminate incidences of excessive smoke from vessels at berth.

The Port of Oakland is also actively committed to emissions reductions with its Clean Air Program and Maritime Air Quality Improvement Plan. The plan includes programs for trucks, container terminal equipment, tugboat re-powering programs, a voluntary low sulfur fuel program, low emissions construction equipment, and alternative fuel programs. In addition, the Port of Oakland is also pursuing the development of shore-side power operations and conducting liquefied natural gas (LNG)-fueled mobile shore-side power technology testing for alternative fuel shore power.



## 4.0 Port of Hueneme Air Quality Accomplishments

The Port has taken several steps to improve air quality in and around the Port. The Port has also invested in better understanding the emissions that occur from typical Port activities. The following outlines several recent actions taken by the Port to improve air quality.

### 4.1 Cargo Handling Equipment

A variety of cargo handling equipment is used to load and unload vessels at the Port. As the terminal operator at the Port of Hueneme, Port's America owns and operates the cargo handling equipment used to move the bulk, container, and project cargo that enters the Port. This equipment includes: fork lifts, heavy fork lifts, yard tractors, a top pick, and terminal trucks.

There are currently 36 electric fork lifts operating at the Port. These are primarily used to move bananas and other bulk cargo. Electrifying this equipment has resulted in emissions reductions on dock.

### 4.2 2008 Air Emissions Inventory

In 2009, the Port voluntarily prepared an Air EI based on the Port's 2008 activity levels. The EI was prepared for the purpose of identifying and quantifying the air quality impacts from the Port's maritime operations. The EI will help in air quality planning and will assist the Port in targeting appropriate air quality control measures. The EI identifies OGVs, harbor craft, heavy-duty drayage trucks, on-road mobile sources, and cargo handling equipment as the major emission sources associated with the Port's operations.

The EI highlights the Port's commitment to improving its understanding of the nature, location, and magnitude of emission from its various sources. The Port is committed to operating in the most sustainable and environmentally responsible manner. The emissions inventory serves to provide a better understanding of air emissions that occur from typical Port activities and will enable the Port to better address the impact of Port activities on air quality. The main objectives of the inventory are to:

- Establish a baseline for evaluating changes in Port emission as air pollution control regulations are phased in.
- Provide a technical basis for setting priorities and evaluation the cost-effectiveness and potential benefits of air pollutant control measures.
- Provide air quality background information to be used in future environmental documents and special studies.
- Inform local, state, and federal regulatory decision-makers in their effort to reduce air emissions from Port-related sources and improve air quality.



#### 4.3 2011 Proposition 1B Shore Power Grant

In 2011, the Port applied and was awarded up to \$4.5 million for the installation of shore power infrastructure. The funding will be used to implement the Port's CARB-approved terminal plans. The Port will own, install, and operate the grid-based shore power system at the Port for the benefit of the public and for use by the Port's customers/tenants who operate vessels regulated by the CARB's Ships at Berth programs. Terminal plans have been submitted to CARB by two of the Port's tenants: NYKCool and Del Monte. The NYKCool Terminal Plan covers its use at Berths 1 and 2. The Del Monte Terminal Plan covers its use at Berth 3.

It is expected that this project will result in 2,730,000 pounds of NO<sub>x</sub> reductions and 46,833 pounds of DPM reductions over the term of the grant agreement.

#### 4.4 2011 Propane Maintenance Vehicle

In 2011, the Port replaced two of its five maintenance trucks with propane fueled trucks. These trucks are used in day-to-day operations at the Port. Compared with vehicles fueled with conventional diesel and gasoline, propane vehicles can produce significantly lower amounts of some harmful emissions and the GHG carbon dioxide (CO<sub>2</sub>).

The emissions performance of modern propane vehicles is far superior to that of previous generations. A major reason for this is the strict EPA emission requirements for converted vehicles. The EPA calculated the potential benefits of propane versus gasoline based on the inherently cleaner-burning characteristics of propane. The EPA's findings include:

- Potentially lower toxic, CO<sub>2</sub>, carbon monoxide (CO), and nonmethane hydrocarbon (NMHC) emissions
- Rich calibration shows high NMHC and CO emissions, but lower NO<sub>x</sub> emissions
- Lean calibration shows slightly higher NO<sub>x</sub> emissions, but lower CO and NHMC emissions



## 5.0 Goals and Metrics

The information presented above is intended to provide the necessary background and context to establish clear, attainable, and measurable goals related to this focus area. Clearly defined goals and metrics are critical to advancing environmental programs at the Port.

The 2008 Emissions Inventory provides a valuable baseline data set for the Port to evaluate future projects and programs aimed at reducing emissions. Measuring progress toward achieving program objectives will allow the Port to evaluate success and adjust or modify any strategies that appear off target.

The following set of goals is based on a review of and an attempt to properly balance the current regulatory climate, industry standards, and the current state of programs and projects underway at the Port.

### 1) Develop Clean Air Plan

Committing to a Clean Air Program lets the community and other stakeholders know the Port is dedicated to operating responsibly and efficiently. A Clean Air Program also ensures the Port stays current and consistent with Industry standards.

The metric used to evaluate progress toward this goal is:

- A measure of staff time and resources committed to development of a program

The following identifies a path to achieving this goal:

- Identify team/resources
- Prioritize viable emission control measures/programs
- Identify Budget
- Identify funding sources (grant or otherwise)
- Design and implement emissions reduction programs

### 2) Achieve Regulatory Driven Emissions Reductions

A focus on achieving regulatory driven emission reductions ensures the Port understands the mandated regulatory requirements and is planning/scheduling appropriately. Achieving regulatory mandates keeps the Port in good standing with the regulatory agencies, avoids penalties (financial or otherwise), and affirms the Ports commitment to operate responsibly and efficiently.

The metric used to evaluate progress toward this goal is:

- Regularly evaluate/measure air emissions from Port activities/sources
  - ◆ Use 2008 EI as the baseline from which to compare/evaluate emissions reductions



The following identifies a path to achieving this goal:

- Document regulatory requirements by source category
  - ◆ OGV's
  - ◆ Harbor Craft
  - ◆ Cargo Handling Equipment
  - ◆ Drayage Trucks
  - ◆ Other Sources (Stevedore Fleet, VDC Vans, Imported/Exported Autos, Worker Vehicles)
- Schedule/plan necessary actions for achieving reductions
- Identify team/resources to carry out necessary planning and action

### 3) Achieve Surplus Reductions through Port Projects and Programs

Exceeding mandated emission reductions demonstrates a clear commitment from the Port to operating responsibly and efficiently. Achieving emission reductions beyond required levels is possible through the implementation of infrastructure enhancements and other Port-initiated programs.

The metrics used to evaluate progress toward this goal are:

- Calculate emission reduction potential per project
- Regularly evaluate/measure air emissions from Port activities/sources
  - ◆ Use 2008 EI as the baseline from which to compare/evaluate emission reductions

The following identifies a path to achieving this goal:

- Implement CARB mandated Shore Power Program
- Identify other planned Port projects and calculate potential emission reductions

### 4) Identify and Seek Grant Funding with Goal to Establish Emission Reduction Incentive Programs

A number of federal and state grant programs exist to facilitate the reduction of emissions in the goods movement industry. Given the Port's economic, environmental, and social influences on the region, it is an attractive candidate for grant funding. Grant funding would allow the Port to incentivize emission reductions and could help achieve the other goals outlined above.

The metrics used to evaluate progress toward this goal are:

- The number of grant opportunities identified, pursued and awarded

The following identifies a path to achieving this goal:

- Identify federal, state and other grant funding opportunities
- Identify resources to prepare and submit grant applications
- Develop, implement and administer incentive programs



## 6.0 Conclusion

The Port is committed to providing the maximum possible economic and social benefits to the people and communities served by the Port. This commitment includes a responsibility to address the environmental impacts of Port operations. The information presented above is intended to provide a context for the Port's accomplishments and establish an air quality agenda as part of a broader environmental management program.

# Port of Hueneme

## Water Quality Focus Area

### White Paper

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## 1.0 Focus Area Overview

As the Port of Hueneme's (Port's) mission statement states, the Port is committed to providing the maximum possible economic and social benefits to the people and communities served by the Port. This commitment includes a responsibility to address the environmental impacts of Port operations. The Port conducts maritime terminal operations in accordance with generally accepted sustainable practices consistent with the public trust and applicable regulations. This includes protection and improvement of surface water quality important for beneficial uses.

The Los Angeles Regional Water Quality Control Board's (LARWQCB) Water Quality Control Plan for the Los Angeles Region (Basin Plan) has established Beneficial Uses for water bodies in the region. The Beneficial Uses of the Port include industrial process supply, navigation, contact and non-contact water recreation, commercial and sport fishing, marine habitat, and wildlife habitat. These beneficial uses form the basis for protection and improvement of the water quality at the Port and are the reason behind water quality standards established by regulatory bodies.

The Port, like most water bodies, is impacted by contaminants emanating from multiple sources or pathways. These include runoff from the surface features of the Port and the local storm drain system, the direct discharge of pollutants or pollutant containing material into the waters of the Port, the aerial deposition of matter into Port waters, and regional hydrologic influences such as ocean currents.

Of these pollutant pathways, protection of water quality at the Port can be accomplished largely through prevention of discharge of pollutants contained indirect discharges and stormwater. Employing specific best management practices (BMPs) and control measures in managing stormwater runoff and discharges to the Port's waters, in conjunction with strict compliance with applicable laws, regulations, and permits, will result in continued protection and improvement of water quality.

The following section describes the regulatory setting for Port operations and summarizes regulations applicable to water quality at the Port. The regulatory setting is followed by a review of Industry Standards being set by other California ports. Next, the Port's water quality related accomplishments are discussed followed by a review of goals and metrics for this focus area.



## 2.0 Regulatory Setting

The responsibility for regulating port-related operations and associated discharges that have the potential to impact the quality of surface water at the Port is shared among federal, state, regional, and local regulatory agencies.

### 2.1 Federal

The Federal Water Pollution Act, adopted in 1948, was amended in 1972 and given the common name of the Clean Water Act (CWA). The CWA continues to be the cornerstone of surface water quality protection in the U.S.

In general, the CWA shapes operations at the Port through the National Pollutant Discharge Elimination System (NPDES). The U.S. Environmental Protection Agency (EPA) is vested with the authority to implement the NPDES and issue permits for discharge of pollutants, defined as any industrial, agricultural, or municipal waste product, into surface waters. Amendments to the NPDES in 1987 and 1990 added provisions for the regulation of stormwater discharges from both industrial and construction activities. The Port currently discharges stormwater under the State Water Resources Control Board (SWRCB) Order 97-03-DWQ, which comprises NPDES General Permit CAS000001 for discharges of stormwater associated with industrial activities.

Additional federal oversight of port operations and regulation of harbor water quality came into effect with the passage of the Coastal Zone Management Act (CZMA) of 1972. The CZMA, passed in an effort to balance economic development with the conservation of natural resources of the nation's coastal regions, designated the National Oceanic and Atmospheric Administration (NOAA) and the EPA lead federal agencies.

### 2.2 State

Passed by the California Legislature, the Porter-Cologne Water Quality Control Act took effect in 1970, creating the SWRCB and nine Regional Water Quality Control Boards (RWQCB or Boards). The geographic limits of each Board's area of responsibility are known as basins (the Port lies within Region 4-Los Angeles Basin). The Porter-Cologne Act granted significant enforcement authority in the area of water quality to the Regional Boards.

In 1976, the California Coastal Act was passed, which charged the California Coastal Commission, itself created in 1972, with the passage of Proposition 20, with protection of the state's approximately 1,100 miles of coastline. In addition to industrial, agricultural, and municipal waste products regulated at the federal level under the NPDES, Nonpoint Sources (NPS), also known as polluted runoff, became regulated at the state level under the California Coastal Act. NPS, unlike deleterious matter emanating from discreet, readily identifiable points, are typically formed as precipitation and irrigation water move across and through the earth's surface, transporting suspended and dissolved constituents into



navigable waters. While the Coastal Commission, in association with the state's RWQCBs, have supremacy in developing and implementing NPS control programs, these bodies do not have sole responsibility for solving the complex problem of NPS pollution. Presently, over 20 other state agencies have authority relating to polluted runoff.

Section 303(d) of the CWA established the Total Maximum Daily Load (TMDL). Section 303(d) requires states to develop a list of water bodies not attaining standards, after technology based limited are applied. Each state is then to develop TMDLs for those water bodies. TMDLs refer to allowable pollutant concentrations determined for each receiving water body and are applicable to both direct discharge points and NPS. A TMDL is enforced by allocating the total allowable pollution amongst the various sources of the pollutant including stormwater, direct discharge, etc. Allocation is accomplished by permitting and other regulatory strategies. The Port has been placed upon the 303(d) list due to the presence of polychlorinated biphenyls (PCBs) and the pesticide DDT in biological tissue samples collected from the Port. However, the RWQCB has concluded that the problem can be addressed by means other than assigning TMDLs to the Port (e.g., dredging).

### 2.3 Regional

While the harbor waters are not used for recreation by swimmers or personal watercraft operators, the Port is in proximity to several beaches that are sampling sites for the Ventura County Environmental Health Division's monitoring program. The Health Division analyzes ocean water at the County's beaches for indicator organisms such as coliform and enterococcus. These organisms are useful in assessing the threat to human health from diseases such as hepatitis, rotavirus, and gastroenteritis.



### 3.0 Industry Standards

Review of procedures, practices, and equipment utilized in the protection of water resources in the operation of California's Pacific Ocean ports indicates wide variety in the methods employed. In an effort to evaluate water quality programs at similar California ports (e.g., benchmarking), brief descriptions of programs implemented at the Port of San Diego, Port of Stockton, Port of West Sacramento, and Port of San Francisco are presented in the following sections. In addition, a summary of water quality programs underway at larger California ports is also provided.

#### 3.1 Port of San Diego

The Port of San Diego serves as a transshipment facility for the San Diego Bay, located about 96 nautical miles (nm) southeast of Los Angeles and just north of the United States-Mexico border. The Port of San Diego's Environmental Services Department works with Port tenants to prevent the flow of polluted stormwater and implement BMPs for stormwater quality monitoring.

#### 3.2 Port of Stockton

The Port of Stockton is located on the Stockton Deepwater Ship Channel, 75 nm (120 kilometers [km]) due east of the Golden Gate Bridge. The Port of Stockton is 1 mile from Interstate 5 and all interconnecting major highway system, and has its rail services provided by two transcontinental railroads. It owns and operates a diversified and major transportation center that encompasses a 2,000-acre operating area. The Port of Stockton has berthing space for 17 vessels, 1.1 million square feet of dockside transit sheds and shipside rail trackage, 7.7 million square feet of warehousing for both dry bulk and general cargoes, including steel.

The Port of Stockton has implemented a Safe Drains Program featuring "quick close" ducts that can be sealed in the event of a fuel or chemical spill and a system of check dams that aid in removal of materials suspended in stormwater through reduction in flow velocity.

#### 3.3 Port of West Sacramento

The Port of West Sacramento is centered in the San Joaquin Valley, one of the world's most productive agricultural regions, located 79 nm northeast of San Francisco.

In 2001, the Port of West Sacramento completed construction of a detention pond that serves as a collection basin for all stormwater. The pond's contents are pumped to an onsite trickling filter for removal of organic compounds. Following trickling filter treatment, the water flows to an artificial wetland. Ultimately, treated stormwater is returned to the harbor. The Port's detention pond/artificial wetland system is monitored by the RWQCB.



### 3.4 Ports of Long Beach and Los Angeles

The Ports of Long Beach and Los Angeles are committed to maintaining environmentally sound maritime practices and developing environmentally-friendly port operations. These ports work closely with local jurisdictions, regulatory agencies, the local community and other interests to promote water quality programs and initiatives through new technology research and development and public education. In September 2008, the Ports of Long Beach and Los Angeles initiated a coordinated effort to protect and enhance harbor water quality. The Water Resources Action Plan (WRAP) is a comprehensive program with the goal of identifying and eliminating water pollution sources in San Pedro Bay.

### 3.5 Port of Oakland

In 1992, the Port of Oakland implemented its Clean Water Program. The program includes frequent pollution prevention training for Port of Oakland operations personnel and regular inspection of tenant facilities.



## 4.0 Port of Hueneme Water Quality Accomplishments

The Port has taken several steps to improve water quality in and around the Port. The following outlines several recent actions taken by the Port to improve water quality.

### 4.1 Stormwater Management

In June of 2011, operators of the Port executed Phase I of the Port's Stormwater Improvement Plan and authorized the purchase and installation of stormwater filters at seven key locations throughout the facility. The filters, which were installed by the Port's Maintenance Department, are manufactured by United Storm Water, Inc. and are comprised of a multi-layer polyvinyl chloride (PVC) mesh filter encased in a stainless steel frame. The devices are rated for a maximum flowrate of 140 gallons per minute per square foot (gpm/ft<sup>2</sup>) and have a proven record of protecting receiving waters from refuse, construction debris (typically sediment), and emulsions of petroleum distillates.

Phase II of the Stormwater Improvement Plan will include the purchase and installation of additional filters in each of the facility's remaining 32 stormwater drains. Funds for the implementation of Phase II are allocated in the Port's Fiscal Year 2011-2012 Capital Budget.

Wastewater, runoff, and stormwater originating outside Port property, thus beyond the jurisdiction of the Port, has historically discharged into Port waters and impacted water quality. To address this issue, maintenance personnel at the Port document discharges caused by occurrences such as damage to potable water supply piping and chronic conditions relating to maintenance of municipal storm drains.

### 4.2 NPDES Stormwater Monitoring and Reporting

The Port meets its NPDES stormwater obligations with respect to water quality monitoring and reporting. The Port also maintains a Stormwater Pollution Prevention Plan, which summarizes various BMPs for protection of water quality and the sampling and monitoring program. Wet and dry season stormwater and nuisance water runoff samples are collected from six discharge locations at the Port for laboratory analysis. Laboratory analytical results and a written report are forwarded to the RWQCB. These activities are in compliance with the SWRCB Order No. 97-03-DWQ for NPDES General Permit No. CAS000001; the permit regulates discharges of stormwater from industrial facilities.





## 5.0 Goals and Metrics

The information presented above is intended to provide the necessary background and context to establish clear, attainable, and measurable goals related to this focus area. Clearly defined goals and metrics are critical to advancing environmental programs at the Port.

The following goals are based on a review of, and an attempt to properly balance, the regulatory climate and requirements, industry standards, and the current state of programs and projects underway at the Port.

### 1) Develop Water Quality Plan

Committing to a Water Quality Plan lets the community and other stakeholders know the Port is dedicated to operating responsibly and efficiently. A Water Quality Plan also ensures the Port stays current and consistent with regulatory and industry standards.

The metric used to evaluate progress toward this goal is:

- A measure of staff time and resources committed to development of a plan

The following identifies a path to achieving this goal:

- Identify document preparation team/resources and partnering agencies
- Complete a thorough analysis of the Port setting, including the regulatory framework and hydrodynamics of the Port
- Identify potential pollutant sources and contaminants of concern
- Set goals and design an implementation strategy
- Identify and prioritize viable discharge control measures/programs and BMPs with a focus on:
  - Stormwater discharges
  - Land-use discharges
  - On-water discharges
- Design the selected control measures/programs and BMPs
- Identify funding sources (grant or otherwise)
- Develop Budget

### Implement a Water Quality Program

Upon development and approval of such a plan, a water quality program can be implemented.

The metric used to evaluate progress toward this goal is:

- A measure of staff time and resources committed to implementation of a program



The following identifies a path to achieving this goal:

- Management of regulatory compliance, including documentation and regular evaluation
- Implement the strategies of the Water Quality Plan
- Implement management programs for the selected discharge control measures/programs and BMPs (e.g., purchase, install, inspect, etc.)



## 6.0 Conclusion

The Port is committed to providing the maximum possible economic and social benefits to the people and communities served by the Port. This commitment includes a responsibility to address the environmental impacts of Port operations. The information presented above is intended to provide a context for the Port's accomplishments and establish the foundation for water quality management and a broader environmental management program.

# Port of Hueneme

## Soil and Sediment Focus Area

### White Paper

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## 1.0 Focus Area Overview

As the Port of Hueneme's (Port's) mission statement states, the Port is committed to providing the maximum possible economic and social benefits to the people and communities served by the Port. This commitment includes a responsibility to address the environmental impacts of Port operations. The Port, in conjunction with the goods movement industry and regulatory agencies, should consider managing soils (under Port lands) and sediments (under Port waters) as part of a broader environmental management program. This program should also address the options for managing chemically-impacted soil and sediment that pose a potential threat to the human health, coastal and marine ecosystems, and the environment.

Soils and sediments at the Port have been contaminated by historical industrial uses and pollution entering the Port via storm drains and surface water runoff. Above all else, the Port should manage polluted soil and sediments to protect Port workers, the surrounding community and both coastal and marine ecosystems. This should be done while making sustainable decisions about disposal to ensure that impacted soils and sediments will not become a threat elsewhere.

In managing soils and sediments, the Port has an opportunity to positively control soil and sediment quality at adjacent facilities. The Port has a history of emplacing sediment on adjacent beaches, thereby replenishing sand starved environments. These replenishment efforts, in conjunction with broader environmental management program metrics, can be tracked on the Port website and touted to the local community and tenants.

In order to clarify the Port's stance on soils and sediments, provided below is a summary of the regulatory climate, industry standards, and sediment management the Port has already completed. The summary is followed by a suggested path for expansion of goals and metrics for ongoing contaminated soil and sediment management.



## 2.0 Regulatory Setting

The regulatory framework governing the management of contaminated soils and sediments at the Port is overseen by the United States Environmental Protection Agency (EPA), the United States Army Corp of Engineers (USACE) and the California Environmental Protection Agency (Cal-EPA). In order to enforce federal and state regulations, Cal-EPA acts as an umbrella agency providing oversight for selected state boards and departments, including the State Water Resources Control Board (SWRCB), the Department of Toxic Substances Control (DTSC) and the California Air Resources Board (CARB), all of which have a stake in regulating the management of contaminated soils and sediments at the Port. The SWRCB oversees nine Regional Water Quality Control Boards (RWQCBs) including the Los Angeles RWQCB (LARWQCB). The LARWQCB administers a portion of Ventura County, including the Port. The Ventura County Air Pollution Control District (VCAPCD) is the CARB-appointed regional agency with jurisdiction over the Port, and it is responsible for bringing the area into compliance and/or maintaining air quality within federal and state air quality standards. Because so many agencies have a stake in the management of soils and sediments, the process can at times be complicated.

In the context of Port activities, the management of contaminated soils and sediments is driven by whether or not the soils and sediments pose a risk to sensitive receptors either when left in place or when excavated. Generally, impacted soil is managed by the DTSC when there is no risk to surface and groundwater resources. In the Port setting, it is likely that soil impacts will be governed by the RWQCB due to proximity to both groundwater (vertically) and the marine environment (laterally); however, DTSC rules should still be evaluated as a starting point whenever impacted soil is encountered.

The federal Clean Water Act (CWA) Section 404 establishes a program to regulate the discharge of dredged and fill material into waters of the United States, including wetlands. Responsibility for administering and enforcing CWA Section 404 is shared by the USACE and EPA. USACE administers the day-to-day program, including individual permit decisions and jurisdictional determinations; develops policy and guidance; and enforces CWA Section 404 provisions. EPA develops and interprets environmental criteria used in evaluating permit applications, identifies activities that are exempt from permitting, reviews/comments on individual permit applications, enforces CWA Section 404 provisions, and has authority to veto USACE permit decisions. In general, to obtain a CWA Section 404 permit, applicants must demonstrate that the discharge of dredged or fill material would not significantly degrade the nation's waters and there are no practicable alternatives less damaging to the aquatic environment.

The SWRCB is charged with protecting water quality and administering the CWA 401 Water Quality Certification (WQC) Program. The state's WQC Program was formally initiated in 1990 in response to the requirements of CWA §401. Every applicant for a federal permit or license for any activity that may result in a discharge to a water body must obtain state WQC so that the proposed activity will comply with state water quality standards.





The VCAPCD has rules that govern the excavation of chemically impacted soil, such as Rule 74.29, which applies to the excavation of soils impacted with petroleum hydrocarbons such as gasoline, diesel fuel or jet fuel. As such, before any soil excavation begins a review of VCAPCD rules should be completed to ensure that the work is done within compliance.

When soil is disposed, it is generally classified into one of four divisions: non-hazardous soil, California hazardous, non-Resources Conservation and Recovery Act (RCRA) soil, and RCRA hazardous soil. These hazardous designations are dependent upon the physical properties of the soil, concentrations of contaminants within the soil, and the solubility of the contaminants. The management and disposal of hazardous soil is governed under RCRA (Code of Federal Regulations [CFR], Title 40, Part 260) and California Title 22 (California Code of Regulations [CCR], Title 22, Division 4.5), and is regulated by the DTSC in California. At the Port, it is possible that all three of these types of soils may be encountered. Depending on the oversight agency, it is critical to ensure that soil is eligible for reuse prior to reusing soil at the Port as a non-hazardous waste designation does not ensure that soil is not impacted.



### 3.0 Industry Standards

The Port is not the only Harbor District seeking to maximize benefit in an environmentally responsible matter. The primary drivers for the Port and the other ports outlined below have been the need to reuse available land, accommodate capital projects, dredge and to mitigate impacts to the environment. Generally, a two-pronged approach is utilized to address soil and sediment at Ports:

- 1) Remediate existing soil and sediment contamination in a manner consistent with land and harbor reuse
- 2) Implement control measures to mitigate the potential for future contamination of soil and sediment

Remediation of soil and sediment is generally driven by regulatory agencies. Oftentimes, control measures to mitigate future contamination are addressed by developing reuse guidelines or import fill requirements on a port-by-port basis or in conjunction with regulatory agencies.

#### 3.1 Port of San Diego

The Port of San Diego serves as a transshipment facility for the San Diego Bay, located about 96 nautical miles (nm) southeast of Los Angeles and just north of the United States-Mexico border. The Port of San Diego oversees two maritime cargo terminals, a cruise ship terminal, 17 public parks, various wildlife reserves and environmental initiatives, a Harbor Police department, and the leases of more than 600 tenant and sub-tenant businesses around San Diego Bay. The two marine cargo facilities administered by the Port of San Diego are the National City Marine Terminal, which is a 125-acre, seven-berth facility that mainly handles vehicles; and the Tenth Avenue Marine Terminal, which is a 96-acre, multi-purpose eight-berth facility that handles inbound cargo including refrigerated commodities, fertilizer, cement, break bulk commodities, and forest products.

One of the Port of San Diego's responsibilities is to protect the bay and its resources. The Port of San Diego includes Soil and Sediment Remediation under the "Clean Mud" portion of its environmental program. For projects including redevelopment and remediation, the Port of San Diego implements investigations of contaminated soil, groundwater and sediments, and also has joint tenant cleanup programs. The Port of San Diego works with outside companies through on-call professional services contracts to address these issues.

#### 3.2 Port of Long Beach and Port of Los Angeles

The Ports of Long Beach and Los Angeles (collectively, the Ports) have developed a Water Resources Action Plan (WRAP), a plan meant to target and improve water quality in the San Pedro Bay by addressing multiple sources of pollution including sediment. The Ports boast a 40-year track record of improving water quality in San Pedro Bay through a combination of efforts resulting from more aggressive regulation by state and federal agencies, better source control and targeted dredging of



accumulated contaminants in harbor sediment. The Ports continue to face ongoing challenges to sediment pollution including contaminants that remain in port sediments, flow into the harbor from port land, and flow from upstream sources in the watershed, well beyond the ports' boundaries.

The Ports worked with the EPA and the LARWQCB to develop the WRAP completed in 2009. The WRAP incorporates new programs while continuing the many water quality initiatives already under way at both ports.

### **Deed Restriction Approach**

The Port of Long Beach has begun implementing deed restrictions where contaminated soils that are not impacting the environment can be left in place. These deed restrictions, approved by the DTSC, ensure that the Port of Long Beach's land is reused without exposing sensitive receptors to harmful contamination. In the future, the Port of Long Beach will be able to continue using the land beneficially and not have to needlessly dispose of soil in unsustainable manners. This approach is akin to the Brownfields redevelopment of environmentally impacted sites driven by the EPA and DTSC.

### **Removal Goals**

The Port of Long Beach stated an ambitious goal to remove 100 percent of identified contaminated sediments by 2010 as part of its sediment remediation program. The Port of Long Beach's soils and sediment webpage hosts an informational dashboard used to graph the annual progress being made to achieve this goal. Though this data have not been recently updated, the benefit of simple graphical displays demonstrates a level of commitment from the Port of Long Beach to be transparent when it comes to addressing soil and sediment.



## 4.0 Port of Hueneme Soil and Sediment Accomplishments

The Port has already taken several steps to improve soil and sediment quality in and around the Port. The following outlines recent actions taken by the Port.

### 4.1 Implementation and Monitoring of Confined Aquatic Disposal Cell

In a partnership between the Oxnard Harbor District (OHD), the United States Navy (USN) and USACE, a Confined Aquatic Disposal (CAD) cell was dredged and constructed in the Port turning basin in 2009. The CAD cell was created in order to effectively sequester 212,000 cubic meters of sediments impacted with pesticides and polychlorinated biphenyls (PCBs). Prior to sequestering the impacted sediments, 523,000 cubic meters of clean sands were dredged from the turning basin within the Port. The clean dredged sands were reused by restocking the adjacent Hueneme Beach located immediately south of the Port.

Following the dredging activities, the 212,000 cubic meters of impacted sediments were dredged from OHD wharves, USN wharves and USACE hotspots and placed within the newly opened CAD cell. Placed immediately above the contaminated sediments were 100,000 cubic meters of clean sand dredged from the adjacent portions of the Port, resulting in a clean layer of sediment approximately 3 meters thick overlying the impacted sediments. Above that, a 1-meter thick layer of “armor” stone was added to protect the clean sand layer from erosional forces produced within the Port.

The sequestration of the sediments was authorized by the USACE, the California Coastal Commission and the LARWQCB. In 2010 and 2011, the CAD was monitored and reported on in accordance with the Draft Operations Management and Monitoring Plan (Anchor QEA, 2008. Draft Operations Management and Monitoring Plan, Port of Hueneme Contaminated Sediment Dredging and CAD site Construction May 2008). Results of this monitoring are summarized in the 2011 “Two Years Post-construction Monitoring Report for the Port of Hueneme Maintenance Dredging and CAD Site Construction Project” (Anchor QEA, December 2011). Results indicate that the contaminants of concern are not migrating upward through the clean sediment layer and that the CAD is operating as designed.

### 4.2 Silver Strand Beach and Hueneme Beach

Silver Strand Beach and Hueneme Beach are located on the northern and southern flanks of the entrance to the Port. The construction of Channel Islands Harbor and the Port has altered the natural southward transport of sand to beaches and results in periodical erosion of Silver Strand Beach and Hueneme Beach. As the Port evaluated where to emplace dredged materials in 2006, beach replenishment through deposition of dredged materials was considered a beneficial use. During the dredging cycle from 2000 to 2005, a total of 500,000 cubic meters of material from the Channel Islands Harbor/Port dredging programs were deposited on Silver Strand Beach and 3.7 million cubic meters of material were deposited on Hueneme Beach (USACE, 2006. Final Environmental Assessment for Channel Islands/Port Hueneme Harbors Maintenance Dredging Project, Ventura County, California).



## 5.0 Goals and Metrics

The information presented above is intended to provide the necessary background and context to establish clear, attainable, and measurable goals related to managing contaminated soils and sediments at the Port. Clearly defined goals and metrics are critical to managing environmental programs at the Port.

The Port has a well-documented history of working jointly with the USACE and USN to address sediments, including both sequestering contaminated sediment and emplacing clean sediment on sand-starved beaches. However, the Port has not yet demonstrated an established history of managing contaminated land-side soils. As the landowner, the Port should be aware of remedial activities occurring on its facilities, such as the Tesoro cleanup in the southern portion of the Port. Following these developments as part of an umbrella environmental management program that includes the oversight of soils and sediments would help the Port to identify potential environmental liabilities or property reuse opportunities.

Because the Port operates in conjunction with the USACE and USN, it is critical that the Port actively involve both of these groups in a joint approach to addressing soil and sediment. Because soil and sediment governance at the Port is most likely to be driven based on water quality, the entities should continue to operate in a cooperative manner. Joint efforts on the CAD project and beach replenishment have proven that this approach is already effectively being utilized. The Port should develop goals with the USACE and USN and measure progress toward achieving program objectives. This will allow the Port to evaluate success and adjust or modify any strategies that appear off target.

The following set of goals is based on a review of and an attempt to properly balance the current regulatory climate, industry standards, and the current state of programs and projects underway at the Port.

### **1) Develop an overarching Environmental Management Plan that includes land-side soil and Harbor-side sediment management**

The Port should build an Environmental Management Program (EMP) to ensure that each of the environmental risks it faces (air, water, soil and sediment, etc.) are being addressed in a manner consistent with the Port's environmental policy framework. As part of the soil and sediment portion of the EMP, the Port should set goals and objectives for soil and sediment characteristics that meet regulatory standards. The Port should also create a database to document impacted soil and sediment sites and to track remediation. This will ensure that Port tenants are complying with Port protocols, anticipate remediation costs, alert Port planning to potential environmental issues that could affect construction worker health and safety in the event of expansion, and allow the Port to manage sites consistently.



The metric used to evaluate progress toward this goal is threefold:

- Develop an EMP framework and identify key environmental items that must be addressed immediately, and if there are any items that might need to be addressed in the future
- Build out soil and sediment guidelines taking into account potential pathways for exposure in the Port setting
- Developing goals that meet the requirements of the RWQCB and mitigate risk to sensitive receptors

The following identifies a path to achieving this goal:

- Identify team/resources
- Identify funding sources (grant or otherwise)
- Develop Budget
- Develop EMP
- Develop and publish standards

## **2) Upon implementation of the EMP, tout it! Quantify current soil and sediment exceeding thresholds and set goals for remediation**

By actively remediating current problems, the Port will meet its goal of mitigating exposure to workers and the environment. The sediment sequestration already achieved in the CAD cell is evidence that the Port is being proactive in this arena. The Port should consider using the CAD method, when appropriate for soils on the landside of the Port.

The metric used to evaluate progress toward this goal is:

- Create a soil inventory for the Port by December 31, 2012 and prioritize based on risk by June 2013

The following identifies a path to achieving this goal:

- Identify team/resources
- Identify funding sources (grant or otherwise)
- Create an EMP Dashboard for the Port Website that provides information regarding mitigated soil and sediment issues



## 6.0 Conclusion

The Port is committed to providing the maximum possible economic and social benefits to the people and communities served by the Port. This commitment includes a responsibility to address the environmental impacts of Port operations. The information presented above is intended to provide a context for the Port's accomplishments and establish the foundation for a soil and sediment management plan and broader environmental management program.



# Port of Hueneme

## Marine Resources Focus Area

### White Paper

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## 1.0 Focus Area Overview

As the Port of Hueneme's (Port's) mission statement indicates, the Port is committed to providing the maximum possible economic and social benefits to the people and communities served by the Port. This commitment includes a responsibility to address the environmental impacts of Port operations. The Port conducts maritime terminal operations in accordance with generally accepted sustainable practices consistent with the public trust. This includes pollution prevention and the conservation and protection of marine resources including waterfowl, sea life, and wildlife habitat.

The marine resources in and around the Port include not only wildlife but the habitat on which the wildlife depends. A wide variety of waterfowl and sea life inhabit the marine environment surrounding the Port. For the purposes of this project, the Ormond Beach Wetlands have been included in the discussion as a resource with which the Port should be concerned. The Ormond Beach Wetlands is one of the few remaining intact dune/transition zone marsh systems in Ventura County and is home to unique wetland and marine flora and fauna.

Pollution prevention is an important element of a broader environmental management program that considers how best to manage the Port's operational impacts on air, water, and soils and sediments. Pollution prevention programs in each of these areas ensure the Port is doing its part to encourage health and protection of the marine resources that inhabit the Port and the surrounding areas.

Conservation of marine resources and restoration of habitat is accomplished through the protection of the local environment from invasive species, and the deliberate and systematic handling of harbor sediments. Employing best management practices (BMPs) in managing impacts to air, water and soil and sediment enable the Port to comply with regulatory agency statutes and attain its stated goals concerning protection and enhancement of marine resources.

The following section describes the regulatory setting for the protection and conservation of marine resources at the Port. The regulatory setting is followed by a review of industry standards in practice at other California ports. A description of the Port's accomplishments related to marine resources is followed by a review of goals and metrics for this focus area.



## 2.0 Regulatory Setting

### 2.1 Federal

The following provides a description of the regulatory setting for maritime port operations and a summary of applicable national ordinances, statutes, and conventions.

Federal statutes such as the Endangered Species Act of 1973 (ESA) and the National Invasive Species Act of 1996 (NISA) were promulgated to minimize the impacts of human activity on waterfowl, sea life, wildlife habitat, and marine resources while taking into account numerous parameters such as temperature, rainfall, insolation, tidal motion, and geology across the United States.

The ESA was adopted in an effort to protect imperiled species from extinction as a consequence of economic growth and development. In addition to protection of jeopardized species, both vertebrate and invertebrate, the ESA provided protection of the ecosystems on which the species depend. The United States Fish and Wildlife Service (USFWS) is responsible for freshwater fish and other “listed” species, the National Oceanic and Atmospheric Administration (NOAA) has oversight of marine species, and endangered species are jointly managed. “Listed” species are those for which the best available scientific data indicate that a taxonomic species, or in the case of vertebrates, a distinct population segment, are in danger of extinction throughout or most of its range.

Passage of the NISA constituted the reauthorization and amendment of the Non-indigenous Aquatic Nuisance Act of 1990 and mandated ballast water management to prevent the introduction and spread of potentially harmful alien species into the waters of the United States. Numerous federal departments and agencies including USFWS; the U.S. Departments of Interior, Transportation, Defense, and Commerce; the U.S. Coast Guard, which in 2002 was placed under the jurisdiction of the U.S. Department of Homeland Security; U.S. Environmental Protection Agency (EPA);, NOAA, and the U.S. Army Corps of Engineers(USACE) are charged with implementation of NISA.

In general, the Clean Water Act (CWA) shapes operations at the Port through the National Pollutant Discharge Elimination System (NPDES). The EPA is vested with the authority to implement the NPDES and issue permits for discharge of pollutants, defined as any industrial, agricultural, or municipal waste product, into surface waters. Amendments to the NPDES in 1987 and 1990 added provisions for the regulation of stormwater discharges. The Port discharges stormwater under the State Water Resources Control Board (SWRCB) Order 97-03-DWQ, which comprises NPDES General Permit CAS000001 for discharges of stormwater associated with industrial activities.

The Marine Mammal Protection Act of 1972 (Act) was approved by the U.S. Congress in response to public concern that marine mammal species were in danger of extinction or depletion as a result of human activities. Principally concerned with the intentional (whaling, seal fur harvesting) and unintentional (commercial fishing) taking of marine mammals, the Act also created the Marine Mammal Commission, which addresses issues related to marine mammal habitat. Though limited to an advisory and oversight role, the Marine Mammal Commission conducts continuing review of the whale, dolphin,



seal, sea lion, and otter populations and makes recommendations to federal, state, and local agencies that may issue permits, conduct enforcement actions, and otherwise affect the operation of maritime ports.

## 2.2 State

The California Coastal Commission was established by voter initiative in 1972 and was later made permanent by adoption of the California Coastal Act of 1976. The Coastal Commission, in partnership with coastal cities and counties, plans and regulates the use of land and water in the coastal zone. Development activities generally require a coastal permit from either the Coastal Commission or the local government. The Coastal Act includes specific policies that address issues such as shoreline public access and recreation, lower cost visitor accommodations, terrestrial and marine habitat protection, visual resources, landform alteration, agricultural lands, commercial fisheries, industrial uses, water quality, offshore oil and gas development, transportation, development design, power plants, ports, and public works.

The Marine Life Protection Act of 2004 initiated re-examination of California's existing Marine Protection Areas (MPA) in an effort to increase the state's effectiveness at protecting marine habitat, and ecosystems. The State of California adopted a regional approach in developing a cohesive statewide network of MPA along 1,100 miles of coastline. The Port is situated in the South Coast Marine Protected Area where a principal concern is the wellbeing of kelp forests that form a habitat supporting many invertebrate species, fish, marine mammals, and some birds.

The Act assigned the California Department of Fish and Game (CDFG) primary enforcement authority for the interdiction of pollution that impacts aquatic ecosystems and poaching. In addition, the CDFG Office of Spill Prevention and Response manages the Marine Invasive Species Program, implemented to control the introduction of non-native species from the ballast of ocean-going vessels. Among invasive species of concern is dwarf eelgrass, which is native to Asia and impacts the mud flat environments of California, disrupting the lifecycle of burrowing animals and the shore birds that feed on them.

The California Waterfowl Habitat Program was established with the passage of the Waterfowl Habitat Preservation Act in 1987. In addition to the program's primary objective of protecting waterfowl habitat, the Program aims to enhance habitat for shorebirds, wading birds, and other wetland-dependent species by providing economic incentives to private landowners who manage their properties in accordance with a plan developed by CDFG biologists. With respect to publicly owned wetlands, the program hinges upon forming partnerships with conservation organizations and state and federal agencies to increase food supplies for wintering waterfowl, optimal foraging depths for shorebirds, and summer wetlands crucial to breeding ducks and wading birds.

Passed by the California Legislature, the Porter-Cologne Water Quality Control Act took effect in 1970, creating the SWRCB and nine Regional Water Quality Control Boards (RWQCBs or Board). The geographic limits of each Board's area of responsibility are known as basins, defined as an area drained



by a river, river system, or other body of water the Port lies within Region 4-Los Angeles Basin). The Porter-Cologne Act granted significant enforcement authority in the area of water quality to the Boards.

To address mosquito concerns relating to wetlands, the USFWS developed BMPs for wetland habitat managers. Employing BMPs, managers aid the State of California's Mosquito and Vector Control Districts in achieving reduced mosquito populations and lower reproduction rates by focusing on exploiting the ecological relationships among mosquitoes, their predators, and the wetland habitats they use for breeding.

## 2.3 Regional

The neighboring Ormond Beach Wetlands provide a strong example of the complex regulatory environment surrounding local and regional marine resources. Agencies with jurisdiction in regulating the enhancement or restoration of the Ormond Beach Wetlands area include:

- Ventura County Planning Division
- Ventura County Air Pollution Control District
- Ventura County Watershed Protection District
- City of Oxnard
- City of Port Hueneme

The Ormond Beach Wetlands is one of the few intact dune/transition zone marsh systems left in Ventura County. This area encompasses 1,500 acres and extends south of the Port to the northwestern boundary of Point Mugu Naval Air Station.

More than 200 migratory bird species have been observed in the Ormond Beach area, six of which are considered threatened or endangered. The wetlands of Ormond Beach are considered by experts to be the most important wetland area in Southern California and have been the subject of numerous and extensive studies.

Presently, with input from the Southern California Wetlands Recovery Project, California State University Channel Islands, California State Polytechnic Pomona Graduate School of Landscape Architecture, the Ocean Task Force, the Coastal Conservancy, and the Nature Conservancy, restoration projects are under consideration by the County of Ventura and the City of Oxnard. A key component of each of the proposals is the purchase of acreage in locations critical for creating a self-sustaining biological system and sufficient tidal prism and flushing action to maintain hydrologic function.



### 3.0 Industry Standards

Procedures, practices, and equipment utilized in the protection of wildlife, plant life, and habitat at California ports were reviewed. In conducting this “benchmarking” process, marine resource protection and enhancement programs at ports that share similarities in operational characteristics and size with that of the Port were evaluated. A summary of means in place at the Port of Humboldt Bay, the Port of San Diego, the Port of San Francisco, the Port of West Sacramento, and the Port of Stockton is presented below.

#### 3.1 Humboldt Bay

The Port of Humboldt Bay is located on the Northern California coast approximately 225 miles north of San Francisco and 156 nautical miles south of Coos Bay, Oregon. In its early history, the Port of Humboldt Bay served as the main point of export for California’s lumber and was home to a vast commercial fishing fleet. Presently, the Port of Humboldt Bay has completed a harbor deepening project and is positioned to expand its worldwide shipping connections.

Situated on the Pacific Flyway, Humboldt Bay provides a haven for over 250 species of birds with major migrations occurring during the fall and spring. The Harbor District manages and maintains three wildlife areas in the Humboldt Bay area, including the Gerald O. Hansen Wildlife Area on Woodley Island, the Park Street Marsh, and the King Salmon Beach in the community of King Salmon.

In addition, the Harbor District created the first ballast water exchange program on the west coast of North America. Humboldt Bay's ballast water exchange program involved requiring ships to exchange their ballast water out at sea prior to entering the Bay. This technique has demonstrated a reduction in the opportunities for introductions of exotic marine organisms into local waters. The Humboldt Bay Harbor District program served as a model for measures established by the State of California in 2000.

The Humboldt Bay Harbor District is the local lead for the SeagrassNet program, an expanding, worldwide monitoring program that investigates and documents the status of seagrass resources and the threats to this marine ecosystem. The program started in 2001 in the Western Pacific and now includes 110 sites in 30 countries with a global monitoring protocol and web-based data reporting system.

#### 3.2 San Diego

The Port of San Diego serves as a transshipment facility for the San Diego Bay, located approximately 96 nautical miles southeast of Los Angeles. The Port of San Diego oversees two maritime cargo terminals (National City Marine Terminal and the Tenth Avenue Marine Terminal), a cruise ship terminal, 17 public parks, various wildlife reserves, a Harbor Police Department, and the leases for more than 600 tenant and sub-tenant businesses. National City Marine Terminal is a 125-acre facility mainly handling vehicles, while the Tenth Avenue Marine Terminal is a 96-acre facility that handles fertilizer, cement, forest products, and breakbulk commodities.





The Port of San Diego's Environmental Services Department, in collaboration with port tenants, employs BMPs in polluted stormwater flow prevention. In addition, the Environmental Services Department conducts regular stormwater quality sampling in an effort to protect natural resources such as salt marsh and tidal flats, bird nesting and foraging sites, essential fish habitats such as eelgrass beds, and nine federal and state listed endangered or threatened species. In 2010, the Port of San Diego entered into agreements with the Environmental Health Coalition and the Bayfront Coalition, both citizens' groups focused on the preservation of natural resources and the promotion of ecologically minded development. The Port of San Diego is committed to management of sensitive habitats and invasive species, preservation of breeding, wintering, and migratory habitats, seeking public input during design of park and recreation areas, and the placement of restrictions on boating in sensitive areas.

### 3.3 San Francisco

The Port of San Francisco occupies more than 1,000 acres and 7.5 miles of San Francisco Bay shoreline. The Port of San Francisco provides heavy lift crane capabilities, cold storage, full-service ship repair services and handling of all types of cargo, including breakbulk and rolling stock.

The Port's Stormwater Management Program is characterized by industrial facility inspections and illicit discharge investigation. In addition, tidal salt marshes located along two remote sections of the Port of San Francisco's Southern Waterfront, known as Pier 94 and Heron's Head Park, have been expanded and enhanced by the Port of San Francisco over the past decade. These areas provide habitat for native plants and wildlife and mitigate water-quality issues by filtering runoff before it enters the bay. The Port of San Francisco protects Pier 94 and Heron's Head Park by maintaining "buffer zones" within its jurisdiction and continues to provide public access to both sites.

### 3.4 West Sacramento

The Port of West Sacramento is centered in the San Joaquin Valley, one of the world's most productive agricultural regions. Located 79 nautical miles northeast of San Francisco, the Port of West Sacramento provides a full array of goods movement services to its customers.

In 2001, the Port of West Sacramento completed construction of a lined stormwater wetland. Occupying 5 acres covered by more than 18,000 Tule plants, the wetlands and an associated detention pond serve as a collection basin for all stormwater. Once collected, stormwater is pumped to an onsite trickling filter for removal of organic compounds. Ultimately, treated stormwater is returned to the harbor. The Port of West Sacramento's detention pond/wetland system is monitored by the RWQCB. The wetlands provides educational and outreach opportunities for local high school students who engage the staff biologist in the study of microbes, fish, and waterfowl.

### 3.5 Stockton

The Port of Stockton is located on the Stockton Deepwater Ship Channel, 75 nautical miles east of the Golden Gate Bridge. The Port of Stockton is situated 1 mile from U.S. Interstate 5 and is served by two transcontinental railroads. The Port of Stockton provides berthing space for 17 vessels and



encompasses 2,000 acres, which include 7.7 million square feet (ft<sup>2</sup>) of warehouse space and 1.1 million ft<sup>2</sup> of dockside transit sheds.

The Port of Stockton protects Sacramento Delta water quality by the implementation of its Safe Drains Program, which features “quick close” ducts that can be sealed in the event of a fuel or chemical spill and a system of check dams that affect removal of materials suspended in stormwater through reduction in flow velocity. The Port of Stockton has also implemented its Delta Environmental Enhancement Program, which aims to enhance wildlife habitat in the Delta and surrounding communities. The Delta, which provides drinking water for two-thirds of the State of California and habitat for more than 70 fish species, is a key resting and wintering spot along the Pacific Flyway.

### 3.6 Other Ports

In addition to the ports discussed above, environmental protection procedures and operating protocols at larger California ports were assessed. These ports are similarly committed to maintaining environmentally sound maritime practices and developing ecologically judicious operations and work closely with local jurisdictions and community groups to promote water quality and wildlife programs and initiatives that employ new technology, engage in research and development of techniques and practices, and educate the public.

#### ***3.6.1 The Ports of Los Angeles and Long Beach***

The Port of Los Angeles is the largest seaport complex in the United States, ranking first in container volume and cargo value. It has six major container terminals and four dockside intermodal rail yards with direct access to the Alameda Corridor, a 20-mile express railway connecting the Port of Los Angeles to the rail hubs in downtown Los Angeles. To service the cruise industry, the Port of Los Angeles has two terminal buildings and three passenger processing areas. In addition, 17 marinas with a total of 3,701 recreational boat slips are located within the Port of Los Angeles.

The Port of Long Beach is the second largest seaport complex in the United States. It has 10 piers, 80 berths, and operates 66 post-Panamax gantry cranes. East Asian trade accounts for 90 percent of shipments through the Port of Long Beach, with top exports consisting of chemicals and foodstuffs and major imports including crude oil, electronics, and furniture.

The Port of Los Angeles and the Port of Long Beach are located side-by-side in San Pedro Bay, but remain separate entities. Both ports compete for business, but cooperate regularly in the areas of security, infrastructure, and environmental programs. Combined, the number of cargo containers shipped through the two ports make the Los Angeles/Long Beach port complex the world's sixth busiest.

In September 2008, the Ports of Long Beach and Los Angeles initiated a coordinated effort to protect and enhance harbor water quality. The Water Resources Action Plan (WRAP) is a comprehensive program with the goal of identifying and eliminating water pollution sources in San Pedro Bay. The Port of Long Beach developed a non-indigenous species elimination program focused on ballast water and, using data from 2000 as a baseline, consistently measures the program's effectiveness. In addition, the



Port of Long Beach continues protection and monitoring of a nesting colony of black-crowned night heron that it transplanted from a former U.S. Naval Station in 1998. As part of its dredging program, the Port of Long Beach conducts pre-dredging surveys for kelp and eelgrass to ensure that established beds are not adversely affected.

### **3.6.2 Oakland**

The Port of Oakland, located on the mainland shore of San Francisco Bay, a pre-eminent natural harbor, was established in 1927. It was the first major port on the Pacific Coast of the U.S. to construct terminals for container ships, helping the Port of Oakland to become a world-class international cargo transportation and distribution hub. The Port of Oakland is comprised of 20 deepwater berths and 35 container cranes, 29 of which are Post-Panamax size, and are supported by a network of local roads and interstate freeways, warehouses, and intermodal railyards.

In 1992, the Port of Oakland implemented its Clean Water Program. The program includes frequent pollution prevention training for Port of Oakland operations personnel and regular inspection of tenant facilities. As well as harbor water protection programs, the Port of Oakland has included environmental restoration as part of its development, completing a number of wetland projects around San Francisco Bay. These projects include the Martin Luther King, Jr. Regional Shoreline Restoration project for which the Port of Oakland donated 71.5 acres of land and funded all aspects of wetland restoration. In cooperation with local agencies, community representatives, and scientists, the Port of Oakland completed design and construction of habitat restoration of 180 acres of Oakland's Middle Harbor, a former naval boat basin. This site will become an ecological reserve of shallow bay providing habitat for species such as Dungeness crab, flatfish, anchovy, perch, and herring.



## 4.0 Port of Hueneme Marine Resources Accomplishments

In an effort to maintain and enhance water quality such that aquatic life including waterfowl, marine mammals, fish, invertebrates, and aquatic plants is preserved, the Port performs stormwater monitoring and documentation of offsite events and conditions that impact stormwater inflow.

The Port meets its RWQCB obligations with respect to water quality monitoring and reporting. Wet and dry season stormwater samples are collected from six locations and shipped to a certified laboratory for analysis. Laboratory testing results and a written report are forwarded to the RWQCB. Analytes include total suspended solids (TSS), specific conductance (SC), total organic carbon (TOC), pH, and oil and grease.

TSS is a measure of undissolved solids present in stormwater that impacts receiving water aquatic life by covering breeding and feeding grounds and smothering benthic organisms on which motile creatures feed.

SC refers to water's capacity to conduct an electric current. SC can be employed in estimating the dissolved solids content, salinity, and degree of mineralization, all of which affect water's capacity to support aquatic life.

TOC is the measure of water's organic content. While organic materials are abundant in nature, TOC measurements may include synthetic organics derived from pesticides and other pollutants. As organic material requires oxygen for its degradation, high TOC measurements in stormwater may impact the dissolved oxygen content in receiving waters. Without sufficient dissolved oxygen, water is unfit for maintaining biological systems.

Water's pH is a measure of its hydrogen ion concentration. Low (<7) pH solutions are considered acidic while high (>7) pH indicates a base. Water (pH=7) is considered a neutral compound. Many vertebrate and invertebrate forms of sea life are highly sensitive to pH.

Petroleum distillate concentration is reported as oil and grease. Low concentration of oil and grease creates a floating "sheen" while higher concentrations emulsify and foul the water body. In addition to precluding gill function in fish, contact with oil degrades the feathers of pelicans and sea gulls and in sufficient quantities, prevents the birds from taking flight.

Testing results of stormwater samples collected at the Port's six discharge points consistently indicate TSS, TOC, SC, and pH measurements within RWQCB limits, while oil and grease concentrations at most sampling locations are below laboratory quantitation limits.

In accordance with RWQCB ordinance, Port personnel perform quarterly visual inspection of authorized non-stormwater discharges (NSWD) and monthly inspection of stormwater discharge points. In addition, maintenance personnel at the Port document inflow due to occurrences such as damage to City water supply piping and chronic conditions relating to maintenance of municipal storm drains as



wastewater, runoff, and stormwater originating outside the perimeter of Port property, and thus beyond the jurisdiction of the Port, that impact Port water quality.

In June of 2011, operators of the Port executed Phase I of the Port's Storm Water Improvement Plan and authorized the purchase and installation of stormwater filters at seven key locations throughout the Port. The filters, which were installed by the Port's Maintenance Department, are manufactured by United Storm Water, Inc. and are comprised of a multi-layer polyvinyl chloride (PVC) mesh filter encased in a stainless steel frame. The devices are rated for a maximum flow rate of 140 gallons per minute per square foot (gpm/ft<sup>2</sup>) and have a proven record of protecting receiving waters from refuse, construction debris (typically sediment), and petroleum distillates.

Phase II of the Storm Water Improvement Plan includes purchase of additional filters and their installation in each of the facility's remaining 32 stormwater drains. Funds for the implementation of Phase II are allocated in the Port's Fiscal Year 2011-2012 Capital Budget.



## 5.0 Goals and Metrics

The information presented above is intended to provide the necessary background and context to establish clear, attainable, and measurable goals related to managing marine resources at the Port. Clearly defined goals and metrics are critical to monitoring and managing environmental programs at the Port.

Pollution prevention and the conservation and restoration of marine resources is an important element of a broader environmental management program that considers how best to manage the Port's operational impacts on air, water, and soils and sediments. The following objectives are based on an attempt to balance the current regulatory climate, industry standards, and the state of programs and projects underway at the Port.

### 5.1 Strategic Action Plan for Marine Resources

#### 5.1.1 Stormwater Management/Spill Prevention

With a focus on management of stormwater, a pollution prevention program should be implemented in collaboration with shippers, Port tenants and customers, and the local community. Associated programs should include spill prevention and countermeasure strategies and aboveground/underground storage tank management measures.

The metric used to evaluate progress toward this goal is:

- Implement Phase II of the Port's Stormwater Improvement Plan consisting of purchase and installation of 32 stormwater drain filters
- Train the Port workforce (both Port and tenant personnel) in hazardous/toxic materials handling and uncontrolled release prevention

The following identifies a path to achieving this goal:

- Allocate resources necessary for continuation of Port's Stormwater Improvement Plan
- Develop Budget
- Develop spill prevention and fuel tank management training and hazardous materials handling program

#### 5.1.2 Develop Soil and Sediment Management Program

The Port should set goals and objectives for soil and sediment characteristics that meet regulatory standards. The Port should also create a database to document impacted soil and sediment sites and to track remediation. This will ensure that Port tenants are complying with Port protocols, anticipate





remediation costs, alert Port planning to water quality impacts during dredging, as well as potential environmental issues that could affect construction worker health and safety in the event of expansion, and allow the Port to manage sites consistently.

The metric used to evaluate progress toward this goal is:

- Build out soil and sediment guidelines taking into account potential pathways for exposure in the Port setting
- Developing goals that meet the requirements of the RWQCB and mitigate risk to sensitive receptors

The following identifies a path to achieving this goal:

- Identify team/resources
- Identify funding sources (grant or otherwise)
- Develop Budget
- Develop and publish standards

### ***5.1.3 Ocean Going Vessel Ballast Assessment***

A program of collecting representative samples of ocean going vessel (OGV) ballast water should be conducted. Chemical testing of the samples, followed by calculation of the pollutant load in OGV ballast water, should be performed. These data can be used in assessing the feasibility of a strategy to protect harbor water quality and ecosystem wellbeing through OGV ballast water standards enforcement.

The metric used to evaluate progress toward this goal is:

- Develop an OGV ballast water sampling program, determine the appropriate suite of analyses, and identify a certified laboratory to perform chemical testing
- Complete data reduction and select parameters and associated limits for proposed OGV ballast water monitoring program

The following identifies a path to achieving this goal:

- Execute OGV ballast pilot study





## 5.2 Wildlife Conservation and Protection

### 5.2.1 Wildlife Assessment

A thorough assessment of the Port biosphere, including identification and enumeration of sea mammals, waterfowl, fish, and aquatic plant life, should be conducted. Once concluded, the assessment can serve as a baseline against which future habitat protection and enhancement initiatives can be evaluated.

The metric used to evaluate progress toward this goal is:

- **Perform Port “Census.”** Through *passive* accounting means such as review of previously performed studies and available literature, and *active* accounting such as reconnaissance cruises (dispatching watercraft to conduct visual gauging of wildlife), trapping, and sampling for invertebrates and microorganisms, the number and kind of flora and fauna in harbor waters should be evaluated.
- **Track plant and animal populations with time.** Conditions that may impact these populations and are unrelated to maritime port operations and, therefore, outside the control of Port personnel, should be documented and included in biological tracking. In addition, when they occur, changes to Port operating procedures and amendments to Port policy should be chronicled as part of Port biological data management.

The following identifies a path to achieving this goal:

- Commence “Census” employing separately or in concert, Port personnel, outside contractors, and students and/or faculty at regional institutes of higher learning
- Appropriate funds necessary for conducting biosphere survey and data management

### 5.2.2 Invasive Species Education

In support of state and federal invasive species prevention programs, Port personnel should be made aware of the harmful effects of non-native species introduction, modes of traverse and colony establishment, and provided information concerning prophylactic measures.

The metric used to evaluate progress toward this goal is:

- Develop an invasive species control education/certification program. Utilizing “in-house” assets (that is, identifying Port personnel with professional experience in non-native species and/or academic training in biology or zoology), a curriculum for training the Port work force should be initiated. Absent “in-house” assets, outside subject matter experts should be contracted to assist Port personnel in achieving the knowledge and skills necessary to conduct invasive species training. In effect, the Port should contract for a *Train-the-Trainer* program. Once trained and deputized, Port personnel should execute a formal training



program consisting of a basic course followed by shorter, annual refresher courses. Port personnel in these leadership and training roles should track the training and certify its completion.

The following identifies a path to achieving this goal:

- Identify “in-house” personnel to serve as trainers
- Evaluate contractors capable of training Port personnel to take on leadership positions
- Allocate resources necessary for implementation and continuation of program
- Implement education/certification program

### **5.3 Wetlands Conservation and Support**

#### ***5.3.1 Beneficial Reuse of Dredging Spoils***

To advance environmental restoration and wildlife habitat rehabilitation, a cooperative program could be expanded so that opportunities for the beneficial use of dredged materials can be readily identified. With logistical support provided by the Port, dredging operations may be coordinated with projects affecting the placement of sand to provide nourishment of starved beaches and the deposition of cohesive materials in mud flat environments.

The metric used to evaluate progress toward this goal is:

- Engage grading contractors, design engineers, and permitting agencies to discuss opportunities for beneficial reuse of dredging spoils
- Conduct periodic review of public records and open sources to identify proposed and ongoing projects in Ventura, Santa Barbara, and Los Angeles Counties that affect wetlands, mud flats, and other sensitive habitats

The following identifies a path to achieving this goal:

- Invite earthmoving contractors, geotechnical engineering firms, and regulators to the Port for an open house, mixer, or kickoff meeting to introduce cooperative effort
- Create a database of grading contractors, design engineers, and permitting agencies and appoint Port staff to maintain database
- Upon completion of beneficial reuse projects, create “Capstone” (brochure, video posted to Port website, press release, etc.) that documents Port participation



## 6.0 Conclusion

The Port is committed to providing the maximum possible economic and social benefits to the people and communities served by the Port. This commitment includes a responsibility to address the environmental impacts of Port operations. The information presented above is intended to provide a context for the Port's accomplishments and establish the foundation for marine resource management and a broader environmental management program.

# Port of Hueneme

## Sustainability Focus Area

### White Paper

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## 1.0 Focus Area Overview

As the Port of Hueneme's (Port's) mission statement states, the Port is committed to providing the maximum possible economic and social benefits to the people and communities served by the Port. This commitment includes a responsibility to address the environmental impacts of Port operations. As such, in striving to achieve a triple bottom line (economic growth, environmental progress, and community vitality), the integration of sustainable practices into Port operations are a must.

A triple bottom line means that projects and programs at the Port are assessed by their contributions to the economy, the environment and the community. Under a triple bottom line, economic growth, environmental progress and community vitality are not just mutually compatible but are also intended to enhance and improve the other. Each of these elements must be considered for the Port to achieve a successful triple bottom line.

Advancement toward a triple bottom line forces the Port to identify new initiatives and methods for modifying existing operations to be more sustainable. This pursuit moves the Port from taking a basic regulatory compliance approach to its environmental obligations to becoming a collaborator with industry, regulatory agencies and community stakeholders to influence the adoption of best management practices (BMPs) and the latest technology.

The integration of sustainable practices into Port operations is a key component of enhancing the economy, the environment, and the community. Integration of sustainable practices is a long-term commitment that requires support from Port support staff, industry partners and community stakeholders. This objective can be achieved through a wide variety of programs and projects, including but not limited to; adjustments to purchasing habits, green building and project design, landscaping, various green pilot projects, and more.

The following section describes the regulatory setting for Port operations and summarizes regulations applicable to sustainable practices at the Port. The regulatory setting is followed by a review of Industry Standards being set by other California ports. Next, the Port's sustainability related accomplishments are discussed followed by a review of goals and metrics for this focus area.



## 2.0 Regulatory Setting

Examples of regulations and programs that include elements of sustainability are provided below. This section is intended to illustrate the trend toward including sustainable measures into federal and state regulations and programs. Some of these examples are more applicable to the Port than others.

### 2.1 Federal Regulations

#### *National Renewable Fuel Standard*

To increase the volume of renewable fuel that is blended into transportation fuel sold in U.S., the renewable fuel standard (RFS1) was created under the Energy Policy Act of 2005 to mandate 7.5 billion gallon of renewable fuels by 2012. Under the Energy Independence and Security Act of 2007, the amendments to RFS1 (RFS2) increases and expands the renewable fuel standards, which mandate consumption of 36 billion gallon of renewable fuel per year by 2022. RFS2 lays the foundation for achieving significant reductions of greenhouse gas (GHG) emissions from the use of renewable fuels, for reducing imported petroleum, and encouraging the development and expansion of our nation's renewable fuels sector.

#### *Energy Star*

In 1992, the US Environmental Protection Agency (EPA) introduced ENERGY STAR as a voluntary labeling program designed to identify and promote energy-efficient products that reduce GHG emissions. In 1996, ENERGY STAR became a joint program of the EPA and the U.S. Department of Energy, providing trustworthy information and tools to help organizations and consumers save money and protect the environment through choosing energy-efficient products and BMPs.

#### *Leadership in Energy and Environmental Design Program*

In 2000, the U.S. Green Building Council developed the Leadership in Energy and Environmental Design (LEED) program to advance energy and material efficiency, and sustainability. LEED is a nationally accepted organization for design, operation, and construction of high performance green buildings. The LEED certification provides independent, third party verification that a building, home or community was designed and built using strategies that can achieve high performance in areas such as sustainable site development, water saving, and energy efficiency.

### 2.2 State Regulations

#### *California Climate Action Registry*

In September 2000, California Senate Bill 1771 (SB 1771) was signed into law, which mandates the development of a voluntary GHG emissions registry, the California GHG. The founding vision for the registry is to help companies, organizations, and local agencies establish GHG





emission baselines for purposes of complying with potential future GHG emission reduction requirements and to help California become the most energy-efficient economy in the world.

### ***Assembly Bill 32 – California Global Warming Solutions Act of 2006***

In 2006, the Governor signed Assembly Bill 32 (AB 32), the Global Warming Solution Act of 2006, which requires by law a reduction of statewide GHG emissions to 1990 levels by 2020, and ultimately achieving an 80-percent reduction from 1990 levels by 2050.

The AB 32 Climate Change Scoping Plan was prepared and approved by California Air Resources Board (CARB) to identify the state's strategy and a comprehensive set of actions to achieve the 2020 GHG emissions limit. Key elements of the Scoping Plan recommendations for reducing California's GHG emissions to 1990 levels by 2020 include:

- Expanding and strengthening existing energy efficiency programs, as well as building and appliance standards;
- Achieving a statewide renewable energy mix of 33 percent by 2020;
- Developing a California cap-and-trade program that links with other Western Climate Initiative partner programs to create a regional market system;
- Establishing targets for transportation-related GHG emissions for regions throughout California, and pursuing policies and incentives to achieve those targets;
- Adopting and implementing measures pursuant to existing state laws and policies, including California's clean car standards, goods movement measures, and the Low Carbon Fuel Standard, and
- Creating targeted fees, including a public goods charge on water use, fees on gases with high global warming potential, and a fee to fund the administrative costs of the state's long term commitment to AB 32 implementation.

### ***Building Energy Efficiency Standards***

Buildings represent the second largest source of California's GHG emissions. Significant GHG emission reductions can be achieved through sustainable construction, operation, and renovation of new and existing buildings. The California Energy Efficiency Standards for Residential and Nonresidential Buildings were established in 1978 in response to a legislative mandate to reduce California's energy consumption. In 2008, the California Energy Commission adopted the 2008 Building Energy Efficiency Standards, which require projects that apply for building permits to comply with the new standards, beginning in 2010. California's building efficiency standards (along with those for energy efficient appliances) have saved more than \$56 billion in electricity and natural gas costs since 1978. It is estimated the standards will save an additional \$23 billion by 2013.



### ***The Zero Emissions Vehicle Regulation***

CARB first adopted the Zero Emission Vehicle (ZEV) requirements in 1990 as part of the Low Emission Vehicle (LEV) regulation. Although the regulation has been modified several times over the years, the underlying goal of this regulation has always been to have zero emission technologies available on a commercial scale as quickly as possible. This regulation remains an important regulation for meeting California's air quality and GHG reduction goals and has spurred many new technologies that are being driven on California's roads today. CARB is currently proposing amendments to the ZEV regulation, known as LEV III, which integrates more stringent requirements for reducing smog-causing pollutants and GHG emissions and support and accelerate the numbers of plug-in hybrids and ZEVs in California.

### ***Low Carbon Fuel Standard***

In 2009, CARB adopted the Low Carbon Fuel Standard (LCFS) regulation, which became fully effective in April 2010. The LCFS regulation intends to reduce GHG emissions by reducing the amount of carbon released during the production, shipping and use of transportation fuel sold in California by at least 10 percent by 2020. This reduction goal is largely met through an increase of biofuel production and use, especially in the early years of the implementation phase. Due to the rulings made by the U.S. Court for the Eastern District of California in December 2011, CARB is currently withholding enforcement of the LCFS requirements and will appeal those rulings and seek an order staying the preliminary injunction. Both the national RFS and the California LCFS encourage the use of flexible fuel vehicles, which run on alternative fuel of a blend of ethanol and gasoline.

### ***Senate Bill 375***

SB 375, also known as California's Sustainable Communities and Climate Protection Act, was approved by the Governor in 2008. Its purpose is to enhance California's ability to reach its AB 32 goals by promoting sustainable community design at the planning stages. SB 375, which became effective January 1, 2009, is the nation's first legislation to link transportation and land-use planning with global warming. It requires CARB to develop regional and GHG emission reduction targets for 2020 and 2035 and prompts the creation of regional plans to reduce vehicle use emissions throughout the state.

The state's 18 metropolitan planning organizations have been tasked with creating "Sustainable Community Strategies" within the region's federally enforceable Regional Transportation Plan. Collectively, these strategies and plans will demonstrate how regions will meet their 2020 and 2035 GHG reduction target utilizing integrated land use, housing and transportation planning.



## 3.0 Industry Standards

In an effort to evaluate sustainability programs at similar California ports (e.g., benchmarking), brief descriptions of programs implemented at the Port of San Diego, Port of Stockton, Port of West Sacramento, Port of Humboldt Bay, Port of San Francisco, Port of Oakland, Port of Los Angeles, and the Port of Long Beach are presented in the following sections.

### 3.1 Port of San Diego

#### *Trends:*

**Green Port Program** – This program takes a multi-faceted approach to unify sustainability goals into six key areas: energy, waste management, sustainable development, water, air and sustainable business practices. The Port of San Diego sets annual measurable goals for each area. Through this program, the Port of San Diego was awarded grant funds to install a cruise ship terminal shore power system.

**Sustainable Business Practices** – The goal of this program is to give equal weight to environmental, economic and social concerns in the decision-making process. The objective is to increase opportunities for employees and the public to participate in the Green Port Program to learn about ways to be more sustainable thereby providing numerous outreach possibilities.

**Lease Requirements** – Lease-based implementation uses the occasion of the renewal of the lease of port tenants to incorporate sustainable requirements in a lease agreement.

**Shore Power Technology** – The Port of San Diego was awarded a \$2.4 million state Carl Moyer grant by the CARB through the county's Air Pollution Control District. The funds are used for the installation of the shore power system at the cruise ship terminal.

**Integrated Pest Management** –The Port of San Diego currently implements an Integrated Pest Management (IPM) Program on Port Tidelands to help reduce the amount of toxic chemicals that run off into storm drains and discharge into San Diego Bay. The goal of IPM is to protect public and environmental health by combining efficient, economically feasible, and environmentally sensitive pest control methods.

#### *Guiding Principles:*

Provide leadership by minimizing environmental impacts from operations on tidelands and ensure a thriving community where people and the environment prosper. To effectively administer the Green Port Policy, the Port of San Diego will strive to:

- Minimize, to the extent practicable, environmental impacts directly attributable to operations on San Diego Bay and the tidelands.



- Strengthen the Port of San Diego's financial position by maximizing the long-term benefits of energy and resource conservation.
- Prevent pollution and improve personal, community, and environmental health.
- When possible, exceed applicable environmental laws, regulations and other industry standards.
- Ensure that the balance of environmental, social and economic concerns is considered during planning, development and operational decisions.
- Define and establish performance-driven environmental sustainability objectives, targets and programs.
- Monitor key environmental indicators and consistently improve performance.
- Foster socially and environmentally responsible behavior through communications with employees, tenants, stakeholders and the community.
- Collaborate with tenants to develop an integrated, measurable, Bay-wide environmental sustainability effort.

### 3.2 Port of Stockton

#### *Trends:*

**Healthy Air Living Campaign / Healthy Air Living Week** – The Port of Stockton has teamed with the San Joaquin Valley Air Pollution Control District to develop and implement strategies. Some of the strategies to reduce air pollution include: onsite food service and dry-cleaning pick-up service to minimize vehicle trips; completion of an energy audit to identify areas where energy consumption can be reduced; and investigation of the feasibility of purchasing a video conferencing system that would minimize the need for Port staff to travel to various meetings.

**Community Open House, Asparagus Festival, Cleanup Day and Tree Planting Programs** – These programs are designed to showcase Port of Stockton environmental initiatives.

**Habitat Preservation and Restoration** – During the last 5 years, the Port of Stockton has invested nearly \$4 million annually in environmental programs such as waterway debris removal, the sponsorship of educational centers, the preservation of refuge areas, and the establishment of permanent habitat.

**Facility Sharing** – At the Port of Stockton, visitors may observe baseball teams practicing in warehouse facilities, the local chapter of Sea Scouts practicing maneuvers, or volleyball teams holding tournaments. The Port of Stockton supports these community programs by donating the use of these facilities.



**Air Quality Program** – This program is designed reduce pollution resulting from maritime and industrial activities at the Port of Stockton. Activities include replacement of older gasoline-powered equipment, operating electric powered dredge, visible emissions monitoring and retrofitting cargo handling equipment with new emissions control technology.

**Water Quality Program** – This program is designed to improve the quality of the local and regional waterways through education, outreach and when necessary, enforcement.

**Energy Conservation** – Through its Energy Conservation program, the Port of Stockton has begun to produce clean, renewable energy for its own use and that of their tenants. Part of this program includes energy auditing and recruiting cargo that promotes clean energy technologies.

**Green Tenants** – The Green Tenants program attracts leaseholders that are actively involved in sustainability both financially and environmentally.

### *Guiding Principles:*

The Port of Stockton is committed to environmental stewardship and enhancement of the Delta and surrounding communities. The Port of Stockton is dedicated to improving the region’s quality of life by balancing environmental enhancement with the economic benefits of Port activity. These commitments are reflected in the Port of Stockton’s Delta Environmental Enhancement program, which aims to enhance air quality, water quality, and wildlife habitats in the Delta and surrounding communities.

## **3.3 Port of West Sacramento**

### *Trends:*

**Conservation** – The Port of West Sacramento has begun to produce clean, renewable energy for its own use and that of their tenants. To conserve energy, the Port of West Sacramento installed solar panels on several sheds in February 2010. The Port of West Sacramento has installed several sub-meters throughout it property to help audit energy consumption, and recruit cargoes that promote Green Technologies.

**Green Tenants** – The Port of West Sacramento attracts tenants that are interested in a sustainable future, both financially and environmentally.

## **3.4 Port of Humboldt Bay**

### *Trends:*

**Conservation Program** – Comprised of a variety of collaborative efforts from fisheries research and wildlife area management to oil-spill co-op coordination and database development, these efforts may foster community education and appreciation for Port programs.



**Adopt-the-Bay** – A program facilitated by the Harbor District, where any individual or group may adopt unique bay habitats and assist with the enhancement and preservation of natural resources. This is a means by which concerned citizens and civic organizations can become a part of enhancing and preserving Humboldt Bay’s natural resources and is also a great way to promote civic responsibility while teaching children and adults a sense of pride in the community.

**Member Agency of the Statewide Wetlands Monitoring Workgroup** – Over the past 20 years, billions of dollars have been invested in the protection and restoration of wetlands; this group seeks to provide sustainable comprehensive monitoring programs to inform decisions, interpret data, develop a consistent approach and provide a common framework.

### 3.5 Port of San Francisco

#### *Trends:*

**Community Advisory Groups** –The Port of San Francisco has set up several Advisory Committees made up of community stakeholders for all areas along the waterfront. The Advisory Committees meet regularly, which also provides a public forum for interested citizens to participate.

**Stormwater Management** – Targets areas draining directly in to the Bay, the Stormwater Management Plan provides a series of best management practices.

**Wetland Restoration** - The Wetland Restoration project was implemented to enhance, expand and preserve the local wetlands.

#### *Guiding Principles:*

The Port of San Francisco embraces environmental and community stewardship of the San Francisco Waterfront while promoting the infrastructure development necessary to maintain and expand the Port of San Francisco's operations. To meet this commitment, the Port of San Francisco has dedicated a staff of professionals to manage environmental and land use planning activities. All Port of San Francisco projects incorporate broad community outreach to solicit public input on how policies and development should occur along the waterfront.

### 3.6 Port of Oakland

#### *Trends:*

**Fleet Turnover** – The Port of Oakland is gradually replacing its own fleet of 200 cars and trucks with hybrid, CNG fueled, or electric vehicles. The Port is also planning to test an ethanol biofuel (O2 diesel) in three Port vehicles.





**CNG Station** – In 2007, the Port of Oakland and other partners assisted Clean Energy Corporation in construction of a CNG station adjacent to the Port of Oakland’s maritime area. The station can be used for fueling both trucks and passenger vehicles, and is open to the public.

**Alternative Fuel Program** – The Port of Oakland secured two grants to offset the cost of purchasing five CNG shuttles.

**Port Energy Rebate Program** – The Port of Oakland allocates 2.85 percent of its electricity sales revenues to fund all the green energy rebate programs, including solar or photovoltaic rebate program or other port public benefit rebate programs. Based on the Port of Oakland's electricity sales, there is approximately \$200,000 per year available to fund all these programs.

**Energy Efficiency and Renewable Energy Study** – The Port of Oakland intends to support a comprehensive and innovative energy study in partnership with the community and other partners in the region. The Port of Oakland is in the process of identifying the scope of this first-of-its-kind study for a port, and the contribution of up to \$100,000 is only one source of potential funding to complete this ambitious initiative.

**Shore Power Initiatives** – The Port of Oakland will make terminal shore power infrastructure available at three berths by 2012, with additional berths by 2014. For the alternative fuel shore power, the Port of Oakland partnered with other stakeholders to test an LNG-fueled mobile shore-side power technology designed to reduce emissions from ships while at berth.

**Truck Replacement Project** – Under the Truck Replacement Project, the Port of Oakland provided a qualifying truck owner up to \$40,000 to replace the on-road heavy-duty diesel truck, which serves the Port of Oakland's Maritime Area, with a 1999 or newer model year truck. The Port of Oakland will provide up to \$2 million in total funding to replace approximately eighty (80) trucks. Participation in the project is voluntary. This project has been completed and funding has been expended.

**Clean Water Program** – This project collaborates with tenants and other stakeholders to provide awareness about water pollution problems.

**Breathmobile Support** – Provides financial support for the Breathmobile, an asthma clinic on wheels, which visits local schools to provide convenient and free asthma services.

**Participate in Public Air Quality Policy and Funding Forums** – Continue participation in established forums that share information on maritime air quality issues, technologies, policies, programs and funding.

**Energy Rebate Program** – Funded by sales revenue, this program finances solar and photovoltaic rebates for the public.





**Habitat Restoration and Park Development** – A number of wetland projects have been completed under this program, creating a number of educational and recreational spaces for the surrounding community to enjoy.

### *Guiding Principles:*

While the Port of Oakland did not have a readily available mission statement, they do have a division called Social Responsibility. The Social Responsibility Division (SRD) is responsible for balancing port economic development and social justice by implementing policies, programs and collaborative efforts in the local community. There are three core areas that support this vision:

- Providing the local community with access to business and workforce opportunities;
- Ensuring that Port of Oakland contractors, vendors and tenants fulfill their regulatory compliance requirements (i.e., federal, state and local mandates); and
- Ensuring that the Port of Oakland is engaged with its community.

## 3.7 Port of Los Angeles

### *Trends:*

**CAAP Measure OGV 6** - This measure seeks to encourage demonstration and deployment of cleaner ocean-going vessels (OGV) engine technologies that are validated through the Technology Advancement Program (TAP) or by the regulatory agencies. The goal of this measure is to reduce Diesel Particulate Matter and nitrogen oxide (NOx) emissions of in-use vessels.

**Technology Advancement Program** - The purpose of the TAP is to identify and demonstrate new technologies or new applications for existing technologies that have significant potential to reduce air pollution emissions from the Clean Air Action Plan source categories and meet CAAP goals. The Port of Los Angeles' TAP is focused on the development and implementation of near-term emission reduction technologies (to reduce emission with new clean technologies).

**Community Newsletter** – Published by the Public Affairs Division, the Main Channel, a quarterly newsletter serving neighboring communities keeps the locals up to date on projects, programs, planned development, community meetings, and features key information for stakeholders.

**Points of Interest Map and Podcast** – Visitors can explore the Port of Los Angeles at their own pace with a map indicating points of historic interest and listen in on a podcast.

**Speakers Bureau** – Speakers are available on a variety of topics for adult groups.

**Summer Concerts on the Waterfront** – Every Thursday from June to September, the public can enjoy an evening of free music and entertainment.



**Port Community Advisory Committee** – The purposes of the Committee are to assess the impacts of Port of Los Angeles developments on the harbor area communities and to recommend suitable mitigation measures.

**TransPORTer** – This 53-foot mobile museum makes appearances at select community events. A fully-contained mobile exhibit, the TransPORTer features ship to shore computer simulation, an interactive map of ship and goods movements, electronic games, video-taped oral histories and “sounds of the port.”

**Educational Programs** – From the roaming TransPORTer educational exhibit, to sponsorship of in-school curriculum programs, school boat tours, sailing programs and educational events, the Port of Los Angeles provides resources and experiences that broaden students’ view of the Southern California region, international commerce and their future career possibilities.

### ***Guiding Principles:***

The Port of Los Angeles focuses on facilitating global trade while protecting the environment. Achieving this balance requires far-reaching vision and 24/7 commitment. From controversial but revolutionary initiatives like the Clean Truck Program, to numerous efforts to “electrify” the Port of Los Angeles in order to reduce fossil fuel consumption and GHG emissions, the Port of Los Angeles is on the forefront of environmental change in the port and maritime industries. While the Port of Los Angeles is on a different scale, Hueneme may benefit from a review of some of their outreach programs.

## **3.8 Port of Long Beach**

### ***Trends:***

The Green Port Policy directs the Port of Long Beach to integrate sustainable practices into Port development and operations by actively promoting an organizational culture of environmental enhancement, fiscal responsibility, and community integrity (i.e. formed sustainability Task Force to represent all divisions to integrate the Green Port Policy; implemented Environmental Management System, recycling program, and landscaping).

**CAAP Measure OGV 6** - This measure seeks to encourage demonstration and deployment of cleaner OGV engine technologies that are validated through the TAP or by the regulatory agencies. The goal of this measure is to reduce DPM and NOx emissions of in-use vessels.

**Technology Advancement Program** -The purpose of the TAP is to identify and demonstrate new technologies or new applications for existing technologies that have significant potential to reduce air pollution emissions from the CAAP source categories and meet CAAP goals. The Port of Long Beach’s TAP is focused on the development and implementation of near-term emission reduction technologies (to reduce emission with new clean technologies).



**Port Vehicles** – The Port of Long Beach diesel-powered maintenance equipment was retrofitted to include diesel oxidation catalysts and a clean diesel fuel mixed with ethanol. The Port of Long Beach also purchased three liquefied petroleum gas (propane)-fueled sweepers, and began replacement of the gasoline-powered fleet with compressed natural gas-powered and hybrid vehicles. Goal: To convert 100 percent of the Port of Long Beach’s fleet to cleaner vehicles.

**Green Port Lease Requirement** – This program is intended to incorporate environmental measures into all new leases



## 4.0 Port of Hueneme Sustainability Accomplishments

The Port has taken several steps to incorporate sustainable practices into its operations. The following outlines several recent actions taken by the Port in pursuing the triple bottom line and incorporating sustainable practices into operations.

### 4.1 Stormwater Management

In June of 2011, operators of the Port executed Phase I of the Port's Stormwater Improvement Plan and authorized the purchase and installation of stormwater filters at seven key locations throughout the facility. The filters, which were installed by the Port's Maintenance Department, are manufactured by United Storm Water, Inc. and are comprised of a multi-layer polyvinyl chloride (PVC) mesh filter encased in a stainless steel frame. The devices are rated for a maximum flowrate of 140 gallons per minute per square foot (gpm/ft<sup>2</sup>) and have a proven record of protecting receiving waters from refuse, construction debris (typically sediment), and emulsions of petroleum distillates.

Phase II of the Stormwater Improvement Plan includes purchase of additional filters and their installation in each of the facility's remaining 32 stormwater drains. Funds for the implementation of Phase II are allocated in the Port's Fiscal Year 2011-2012 Capital Budget.

### 4.2 Alternative Fuel Maintenance Vehicles

In 2011, the Port replaced two of its five maintenance trucks with propane-fueled trucks. These trucks are used in day-to-day operations at the Port. Compared with vehicles fueled with conventional diesel and gasoline, propane vehicles can produce significantly lower amounts of some harmful emissions and the GHG carbon dioxide (CO<sub>2</sub>).

The emissions performance of modern propane vehicles is far superior to that of previous generations. A major reason for this is the strict EPA emission requirements for converted vehicles. The EPA calculated the potential benefits of propane versus gasoline based on the inherently cleaner-burning characteristics of propane.

### 4.3 Implementation and Monitoring of Confined Aquatic Disposal Cell

In a partnership between the Oxnard Harbor District (OHD), the United States Navy (USN) and U.S. Army Corps of Engineers (USACE), a Confined Aquatic Disposal (CAD) cell was dredged and constructed in the Port turning basin in 2009. The CAD cell was created in order to effectively sequester 212,000 cubic meters of sediments impacted with pesticides and polychlorinated biphenyls (PCBs). Prior to sequestering the impacted sediments, 523,000 cubic meters of clean sands were dredged from the turning basin within the Port. The clean dredged sands were reused by restocking the adjacent Hueneme Beach located immediately south of the Port.



Following the dredging activities, the 212,000 cubic meters of impacted sediments were dredged from OHD wharves, USN wharves and USACE hotspots and placed within the newly opened CAD cell. Placed immediately above the contaminated sediments were 100,000 cubic meters of clean sand dredged from the adjacent portions of the Port, resulting in a clean layer of sediment approximately 3 meters thick overlying the impacted sediments. Above that, a 1-meter thick layer of “armor” stone was added to protect the clean sand layer from erosional forces produced within the Port.

The sequestration of the sediments was authorized by the USACE, the California Coastal Commission and the Los Angeles Regional Water Quality Control Board (LARWQCB). In 2010 and 2011, the CAD was monitored and reported on in accordance with the Draft Operations Management and Monitoring Plan (Anchor QEA, 2008. Draft Operations Management and Monitoring Plan, Port of Hueneme Contaminated Sediment Dredging and CAD site Construction May 2008). Results of this monitoring are summarized in the 2011 “Two Years Post-construction Monitoring Report for the Port of Hueneme Maintenance Dredging and CAD Site Construction Project” (Anchor QEA, December 2011). Results indicate that the contaminants of concern are not migrating upward through the clean sediment layer and that the CAD is operating as designed.

#### **4.4 CARB Non-Compliant Truck Enforcement**

In 2010, the Port developed a Non-compliant Truck Reporting System (NCTRS) to document and report all trucks not in compliance with the CARB drayage truck regulation. The online registration and reporting system allowed the Port to manage the truck access gate in a way that addressed the regulation while minimizing impacts to Port operations. Compliance with the drayage truck regulation helps to reduce the number of older more polluting diesel trucks operating in and around the Port.



## 5.0 Goals and Metrics

The information presented above is intended to provide the necessary background and context to establish clear, attainable, and measurable goals related to this focus area. Clearly defined goals and metrics are critical to advancing environmental programs and pursuing the triple bottom line at the Port.

A triple bottom line means that projects and programs at the Port are assessed by their contributions to the economy, the environment and the community. Advancement toward a triple bottom line enables the Port to identify the need for new initiatives and ways to modify existing operations to be more sustainable.

The integration of sustainable practices into Port operations is a key component of enhancing the economy, the environment, and the community. This objective can be achieved in a wide variety of projects and programs, including but not limited to; pilot projects, purchasing habits, green building and project design, landscaping and more.

The following set of goals is based on a review of and an attempt to properly balance the current regulatory climate, industry standards, and the current state of programs and projects underway at the Port.

### Develop Sustainability Action Plan

#### 1) Actively pursue a triple bottom line

A triple bottom line means that projects and programs at the Port are assessed by their contributions to the economy, the environment and the community. Actively pursuing a triple bottom line involves incorporating a process check into the management of all projects and programs to ensure they are positively contributing to these three variables. The following outlines target areas within the triple bottom line that should actively be pursued.

#### Environmental Responsibility

- Emissions Reductions
- Energy/Fuel Efficiency
- Technology Advancement

#### Fiscal Responsibility

- High Quality Management
- Alternative Funding Source Identification



## Social Responsibility

- Economic vitality
- Transparency in decision making
- Risk Management

The metrics used to evaluate progress toward this goal are:

- The number of changes made to policies and procedures

The following identifies a path to achieving this goal:

- Identify policies and procedures that can be modified to incorporate this goal
- Promote this goal as an ethic or principle to be adopted by all Port staff
- Celebrate/reward examples where effort is being made to achieve this goal
- Develop budget

## 2) Seek opportunities to implement sustainable practices

The integration of sustainable practices into Port operations is a key component of enhancing the economy, the environment, and the community. Integration of sustainable practices requires a long-term commitment and support from Port staff, industry partners and community stakeholders. This goal can be achieved in a wide variety of ways and projects, including but not limited to; pilot projects, purchasing habits, green building and project design, landscaping and more.

The metrics used to evaluate progress toward this goal are:

- Increase number of BMPs implemented
- Pilot project implementation

The following identifies a path to achieving this goal:

- Document and record BMPs
- Train staff to use/incorporate BMPs
- Identify potential pilot projects
- Modify purchasing habits





### 3) Ensure policies are communicated to Port staff, industry partners, and community stakeholders

All environmental policies and BMPs should be repeatedly communicated to Port staff, industry partners and community stakeholders. This is achieved but conducting training for staff and incorporating these items into the Port's external communications programs.

The metric used to evaluate progress toward this goal is:

- The number of staff training seminars/workshops implemented
- The number of press releases issued with messaging incorporated

The following identifies a path to achieving this goal:

- Lead by example – Support from senior management is critical
- Set up workshops to train staff on how to use/incorporate principles
- Develop key messaging for staff and Board members to use when in public
- Incorporate messaging into website and external communications (e.g. press releases)

### 4) Develop an Environmental Management Program

The Port should build an Environmental Management Program (EMP) to ensure that each of the environmental risks it faces (air, water, soil and sediment, etc.) are being addressed in a manner consistent with the Port's environmental policy framework.

The metric used to evaluate progress toward this goal is threefold:

- Develop an EMP framework and identify key environmental items that must be addressed immediately, and if there are any items that might need to be addressed in the future

The following identifies a path to achieving this goal:

- Identify team/resources
- Identify funding sources (grant or otherwise)
- Develop Budget
- Develop EMP



## 6.0 Conclusion

The Port is committed to providing the maximum possible economic and social benefits to the people and communities served by the Port. This commitment includes a responsibility to address the environmental impacts of Port operations. The information presented above is intended to provide a context for the Port's accomplishments and establish a sustainability program and broader environmental management program.



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