



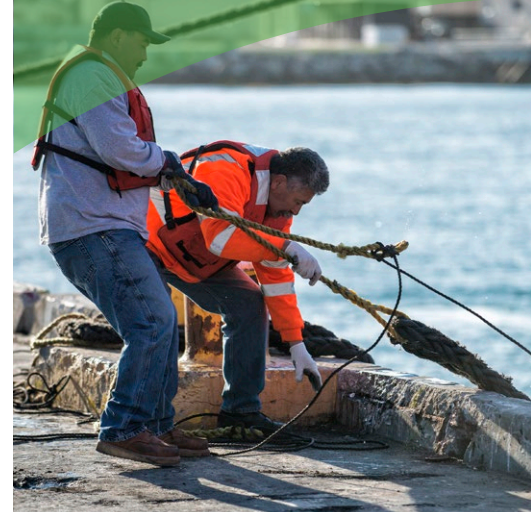
The Port
OF Hueneme
Oxnard Harbor District

Environmental Management Framework

Strategic Implementation Plans

Sustainability
Community Engagement
Marine Resources
Soil/Sediment
Water Quality
Air Quality

Prepared by:



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ENVIRONMENTAL MANAGEMENT FRAMEWORK STRATEGIC IMPLEMENTATION PLANS



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EXECUTIVE SUMMARY

The Port of Hueneme (Port) Environmental Management Framework strategic implementation plans are a set of work plans intended to provide a roadmap for the implementation of projects and programs that not only keep the Port compliant with its regulatory obligations, but also move the Port beyond compliance. By proactively pursuing projects and programs aimed at pollution prevention and natural resource protection, the Port reaffirms its commitment to operate and grow in a responsible and sustainable manner.

A series of six strategic implementation plans have been developed and are consistent with the focus areas previously identified in the Port's Environmental Management Policy Statement and Guiding Principles. The six strategic implementation plans include: Air Quality Management, Marine Resources Management, Soil and Sediment Management, Water Quality Management, Energy Management and Climate Change Adaptation. The themes of Community Engagement and Sustainability are carried through each of the implementation plans and represent core components of the Port's Environmental Management Framework.

The strategic implementation plans identify both short-term (1 to 3 years) and long-term (>3 years) strategies. The short-term strategies focus on programs intended to achieve or maintain regulatory compliance and the long-term program objectives tend to focus on activities that take the Port beyond compliance. Key Performance Indicators (KPIs) have been developed to monitor and evaluate the success of each project or program. The KPIs are intended to provide metrics for measuring and reporting success and to provide transparency for stakeholders engaged in the Port's environmental stewardship efforts.

The strategic implementation plans are intended to be used by Port staff to help guide resources and to prioritize environmental management programming. The strategic implementation plans are also intended to help Port staff plan and budget for environmental management programs. Lastly, the plans are intended to be tools for the Port's executive staff and policy makers as they look to build support for Port projects and programs.

The Port's primary goal is to balance environmental stewardship with the economic benefits of Port operations. The tactical implementation of the strategies identified in the Plans will not only ensure regulatory compliance and the long-term protection of human health and the environment but also promote environmental stewardship by moving the Port beyond compliance.

SECTION 1 INTRODUCTION

1.1 Background

The Port of Hueneme (Port) plays a valuable role in the health and viability of the local and regional economies. The Port is an economic engine within Ventura County working with private companies to provide economic benefits and jobs to residents.

The Port is among the top five General Cargo Ports in California. The Port is a connection to world markets and serves as a priority gateway for the Western U.S. and Canada. Creating a \$1 billion economic impact, supporting over 9,400 direct, indirect induced and related jobs, moving more than \$7 billion in cargo value, and generating \$63 million in state and local taxes annually, the Port is a major economic engine for the region and U.S. economy. In 2012, the Port handled 1.3 million tons of cargo transported into and out of the Port on approximately 324 ocean going vessels (OGVs).

Coupled with its significant economic impact, the Port is committed to environmental stewardship and implementing best management practices (BMPs) to enhance quality of life in the region. The Port is developing an Environmental Management Framework from which current and future initiatives are strategically developed, implemented, and recorded. The framework serves as a foundation to ensure policy is supported with clear principles and actionable goals.

The following approach outlines the strategic process the Port is applying in the development of the Environmental Management Framework:

- 1) Evaluate existing policies at other seaports and municipalities
- 2) Establish Policy Goals
- 3) Draft Policy Statement
- 4) Identify Policy focus areas and metrics to evaluate success
- 5) Develop focus area white papers to assess and define each area
- 6) Develop strategic implementation plans in the areas of Air Quality, Marine Resources, Soils and Sediments, Water Quality, Energy Management and Climate Change.

The Port has completed the first five steps identified above and the strategic implementation plans are the next step in the Port's process to developing an Environmental Management Framework. The strategic implementation plans are based on the four original environmental focus areas identified in the environmental policy statement (Appendix A) and focus area white

papers (Appendix B). Strategic implementation plans have been developed for two additional focus areas. These are energy management and climate change adaptation. The strategic implementation plans outline a process for addressing the Port's environmental obligations with a focus on moving the Port beyond compliance. A proactive environmental management approach lets stakeholders, customers, regulatory agencies, and the communities know environmental management is a priority at the Port.

1.2 Overview

The Environmental Management Framework Strategic Implementation Plans are a set of work plans intended to provide a roadmap for the implementation of projects and programs that not only keep the Port compliant with its regulatory obligations but also move the Port beyond compliance. By proactively pursuing projects and programs aimed at pollution prevention and natural resource protection, the Port affirms its commitment to operate and grow in a responsible and sustainable manner.

A series of six strategic implementation plans have been developed and are based on the focus areas previously identified in the Port's Environmental Management Policy Statement and Guiding Principles. The six focus areas include: Air Quality Management, Marine Resources Management, Soil and Sediment Management, Water Quality Management, Energy Management and Climate Change Adaptation. Community Engagement and Sustainability are core themes of the Environmental Management Framework. As such, implementation strategies for these two themes are addressed in Section 2 and 3 of this document.

1.3 Timeframe and Evaluation

The strategic implementation plans identify both short-term (1 to 3 years) and long-term (greater than 3 years) strategies. The short-term strategies focus on programs intended to achieve or maintain regulatory compliance and the long-term strategies tend to focus on activities that take the Port beyond compliance. Key Performance Indicators (KPIs) have been developed to monitor and evaluate the success of each strategy. The KPIs provide metrics to measure and report success and provide transparency for stakeholders engaged in the Port's environmental stewardship efforts.

1.4 Purpose/Intended Use

The strategic implementation plans are intended to be used by Port staff to help guide resources and to prioritize environmental management programming. The strategic implementation plans will help Port staff plan and budget for environmental management programs. The plans are also intended for policy makers and executive staff as they look to develop and implement environmental policy and programs.

SECTION 2 COMMUNITY ENGAGEMENT

Community Engagement is a core theme of the Port’s environmental management framework and is carried through each of the six focus areas (Air Quality, Marine Resources, Soil and Sediment, Water Quality, Energy Management, and Climate Change Adaptation). This section is not intended to be an implementation plan but a guidance document that defines community engagement at the Port and identifies strategies for engaging community and industry stakeholders.

2.1 Community Engagement at the Port

Community engagement at the Port is best explained as proactive outreach aimed at educating and informing both community and industry stakeholders about international trade and Port operations.

Community engagement plays a key role in the Port’s ability to successfully operate and develop facilities, as well as create and implement successful environmental programs. Sharing the Port’s history, as well as economic and environmental goals, facilitates the building of lasting relationships with stakeholders. Without local support for Port operations, it is difficult to modernize infrastructure and expand the services offered by the Port. Community engagement is a critical component of the Port’s Environmental Management Framework.

2.2 Community Engagement Strategies

This section identifies community engagement strategies aimed at building and reinforcing relationships with both community and industry stakeholders. The Port’s primary community engagement goal related to the Environmental Management Framework is to educate and inform its stakeholders about the Port’s ongoing environmental efforts.

CE 1 - Actively Engage Community Groups, Associations and Student Groups

Building support for Port projects and programs will require engaging community groups, associations, and student groups. Building relationships with these groups requires having a presence and actively participating in events and meetings. Educating and informing these groups will help turn them into ambassadors for the Port and its projects and programs. The champion for this effort will need to identify and make contact with groups, create a schedule of events, and identify and schedule port staff to participate.

CE 2 - Sponsor and Participate in Community Events

Sponsoring community events provides an opportunity to show support and participate in local events. Participating in community events demonstrates the Port’s willingness to be a

SECTION TWO

Community Engagement

community partner and provides an opportunity for the Port to share its message. Sponsorships often include booth space, advertisement space, logo placement and other forms of recognition that can be leveraged to highlight current projects or news. Sponsoring community events is an important way to engage the local community.

CE 3 - Develop a “Let’s Talk Port” Outreach Program

The “Let’s Talk Port” outreach program is a series of small events that are intended to bring the Port to the community. Each event will have a theme (i.e. environmental management or port security) and be focused around a presentation from the Port Director. Port staff will host displays highlighting specific and related topics aimed at engaging attendees. The events will be held in strategic locations throughout the region. The events aim to make the Port more accessible to those that may not have reason to interact with Port staff.

CE 4 - Plan and Execute Open House Event (Banana Festival)

An open house event provides an ideal venue to educate and inform community and industry stakeholders about international trade and goods movement. The Port’s first Banana Festival is evidence that the community is interested in learning about Port operations and how the Port affects their lives. An open house event also provides an opportunity for the Port’s tenants, customers, and partners to participate with the Port.

CE 5 – Create a Port Presenters Program

By training and preparing Port staff to present at community meetings or for student groups, the Port will better leverage its resources and reach a broader audience. The Port would outline a process and general conditions for requesting a speaker to present at a local event. Making speakers available provides an opportunity for the Port to take its message directly to its audience and address any questions or concerns.

CE 6 – Develop a Quarterly eNewsletter

A quarterly eNewsletter allows the Port to share recent developments on projects and programs and keeps stakeholders engaged. This is a proactive approach to educating and informing stakeholders about relevant issues. The eNewsletter would be disseminated via email and have a presence on the Port website.

CE 7 - Redesign and Activate Port Website

The Port website should be the source for all news and information related to the Port. A modern, engaging and active site lets users know the Port is committed to making information available. The site can also be used to interact with and solicit feedback from community and industry stakeholders.

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Community Engagement

CE 8 - Create a Social Media Outreach Plan

Social media is a critical tool for engaging Port stakeholders. Identifying which social media outlets to use and how best to generate regular and timely content should be organized in a formal social media outreach plan. Social media is a tool that can be leveraged to quickly disseminate news and information to specific audiences.

2.3 Key Performance Indicators

Key Performance Indicators provide metrics to measure and report success and provide transparency for stakeholders engaged in the Port’s outreach efforts. The Port is committed to quantifying, monitoring, reporting, and keeping a record of all metrics used to evaluate the success of the strategies outlined herein.

The key performance indicators associated with the strategies outlined in this plan are listed in the table below.

Strategy	Key Performance Indicators
CE-1 – Actively Engage Community Groups, Associations and Student Groups	<ul style="list-style-type: none"> • Number of engagements • Number of memberships or leadership roles within groups • Number of interactions with key contacts
CE-2 – Sponsor and Participate in Community Events	<ul style="list-style-type: none"> • Number of events sponsored • Dollars contributed to community events
CE-3 – Develop a Let’s Talk Port Outreach Program	<ul style="list-style-type: none"> • Number of scheduled events • Event attendance numbers
CE-4 - Plan and Execute Open House Event (Banana Festival)	<ul style="list-style-type: none"> • Number of participants • Number of attendees • Economic impact of the event
CE-5 – Create a Port Presenters Program	<ul style="list-style-type: none"> • Number of Port staff trained • Number of schedule presentations • Number of inquiries regarding speakers
CE-6 - Develop a Quarterly Newsletter	<ul style="list-style-type: none"> • Number of subscribers • Amount of feedback
CE-7 - Redesign and Activate Port Website	<ul style="list-style-type: none"> • Number of site visits
CE-8 - Create a Social Media Outreach Plan	<ul style="list-style-type: none"> • Number of followers • Number of posts

SECTION TWO

Community Engagement

2.4 Conclusion

The Port understands that community engagement is critical to its long-term success. A well-informed community and industry will support the Port's efforts to modernize and continue moving cargo into the region. Sharing the Port's history, as well as economic and environmental goals, facilitates the building of lasting relationships with stakeholders. The Port's primary community engagement goal related to the environmental management framework is to educate and inform its stakeholders about the Port's ongoing environmental efforts. This section seeks to define community engagement at the Port and identifies strategies for successfully engaging stakeholders.

SECTION 3 SUSTAINABILITY

Sustainability is a core theme of the Port’s environmental management framework and is carried through each of the six focus areas (Air Quality, Marine Resources, Soil and Sediment, Water Quality, Energy Management, and Climate Change Adaptation). This section is not intended to be an implementation plan but a guidance document that defines sustainability at the Port and identifies strategies for integrating sustainable practices into the management and administration of the Port

3.1 Sustainability and the Port Setting

As the 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.

Sustainability at the Port is best explained as an approach to managing port operations in a way that comprehensively considers economic, environmental and social outcomes.

The integration of sustainable practices into Port operations requires modifying current procedures, as well as the implementation of new initiatives. Sustainable practices by definition support the Port economically, environmentally, and socially. As such, modifying procedures and implementation of new initiatives requires close coordination between management and staff. Successful adoption and implementation of sustainable practices requires a commitment by all Port staff to consider the economic, environmental and social impacts of their work.

3.2 Strategies for Implementing Sustainable Practices

This section identifies strategies for the integration of sustainable practices into the management and administration of the Port.

S 1 - Environmentally Preferable Purchasing Policy

Environmentally Preferable Purchasing (EPP) is the procurement of goods and services that have a reduced impact on human health and the environment compared to competing products serving the same purpose. The procurement process will be amended to ensure material goods and services procured by the Port, or by its contractors and service providers, meet minimum standards according to the EPP.

SECTION THREE

Sustainability

Implementation of an EPP will accomplish the goal of reducing the environmental, energy, and waste “footprint” of the Port. Implementation requires consideration of numerous environmental factors, including:

- Postconsumer recycled content
- Energy efficiency
- Durability
- Low/zero air emissions
- Low/zero hazardous substances
- Water efficiency
- Easy, nonhazardous maintenance
- End-of-life management keeps materials out of landfills (e.g., reuse, recycling, return to manufacturers)
- Low life-cycle cost
- Responsible manufacturing
- Packaging and distribution efficiency

Establishing an EPP policy and program reinforces the theme of sustainability and encourages behavior-based sustainable decision making in day-to-day administration and management of the Port.

Benefits:

- **Economic**– reduces consumption
- **Environmental**– reduces waste and toxics
- **Social/Community**– reduces waste and subsequent pollution

S 2 - Plastic Bag Restriction Policy

Establishing a policy to restrict the use of plastic bags will reduce the potential for plastics to end up in the Harbor. Such a policy will also set an example for the community and neighboring jurisdictions. Nearly 90 percent of debris found in the world’s oceans is plastic. Establishing a policy of this nature encourages Port staff and stakeholders to consider readily available alternatives to plastics. Goals of this policy include:

- Demonstrate commitment to keeping the harbor clean
- Encourage all state, county, municipal, and district governments to take similar policy action

Benefits

- **Economic**– consider reusable alternatives
- **Environmental**– reduce the amount of plastic entering the ocean
- **Social/Community**– reduces waste, set an example

S 3 - Paper Reduction Policy

Establishing a policy to reduce paper usage also forces Port staff to reconsider how they manage day-to-day workflows. This strategy requires an initial assessment of paper and cardboard purchasing habits and usage. Goals of the policy may include:

- Reducing paper consumption
- Increasing the utilization of recycled and certified paper
- Utilizing electronic resources to avoid the transit of papers (paperless solutions)
- Implementing paper recycling measures

Benefits

- **Economic**– reduce consumption
- **Environmental**– waste reduction
- **Social/Community**– waste reduction, reduce resources needed for production

S 4 - Recycling Policy and Program

Establishing a recycling or waste diversion policy and program reinforces a commitment to staff and the community that the Port is committed to considering not only the economic impacts of port operations but also the environmental and social impacts. Goals of the policy may include:

- Establish a waste diversion goal
- Increase availability of recycling containers

Benefits

- **Economic**– reduce costs
- **Environmental**– waste reduction
- **Social/Community**– waste reduction, landfill diversion

S 5 - Energy Conservation Program

The Port will utilize energy-efficient appliances to improve energy consumption of its offices. The activities to reduce or improve energy consumption will be initiated by an initial assessment of the annual energy consumption at Port office locations.

Upon the initial assessment, the Port could implement actions including but not limited to:

- Replacing light bulbs for white-light, energy efficient light bulbs
- Replacing appliances and hardware with Energy Star appliances, where applicable
- Identifying unnecessary appliances and eliminating use
- Implementation of energy efficient practices or measures

Benefits

- **Economic**– reduce costs
- **Environmental**– emission reductions
- **Social/Community**– resource reduction

S 6 - Carpool Program

Establishing an employee carpooling program provides a number of benefits to Port staff while reducing annual vehicle miles traveled and associated emissions. A carpool program may incorporate a variety of ways to encourage Port staff to carpool. Possible incentives include a reward program, gas cards, use of energy efficient (hybrid or electric) Port vehicles, etc.

Benefits

- **Economic**– staff productivity
- **Environmental**– emission reductions and improved water quality
- **Social/Community**– traffic reduction

3.3 Key Performance Indicators

Key Performance Indicators provide metrics to measure and report success and provide transparency for stakeholders engaged in the Port’s environmental stewardship efforts. The Port is committed to quantifying, monitoring, reporting, and keeping a record of all metrics used to evaluate the success of the strategies outlined herein.

The key performance indicators associated with the strategies outlined in this plan are listed in the table below.

Strategy	Key Performance Indicators
S-1 – Environmentally Preferable Purchasing Policy	<ul style="list-style-type: none"> • Identify internal champion • Develop and adopt policy
S-2 – Plastic Bag Restriction Policy	<ul style="list-style-type: none"> • Identify internal champion • Develop and adopt policy
S-3 – Paper Reduction Policy	<ul style="list-style-type: none"> • Weight of annual paper consumption • Weight of annual recycled or certified paper • Number implemented paperless measures

SECTION THREE Sustainability

Strategy	Key Performance Indicators
S-4 - Recycling Policy and Program	<ul style="list-style-type: none"> • Identify internal champion • Develop and adopt policy • Waste diversion percentage
S-5 - Energy Conservation Program	<ul style="list-style-type: none"> • Annual energy consumption • Amount of energy purchased from solar or geothermal technology • Number of appliances replaced with Energy Star certification • Implementation of energy efficient practices or measures
S-6 - Carpool Program	<ul style="list-style-type: none"> • Identify internal champion • Number of participants

3.4 Conclusion

The Port’s goal is to become a leader in the development and implementation of sustainable practices in a seaport setting. Achieving this goal requires a commitment to building an ethic of sustainability. This plan seeks to define sustainability at the Port and to identify a series of strategies aimed at integrating sustainable practices into the management and administration of the Port.

SECTION 4 AIR QUALITY

The air quality strategic implementation plan identifies several short- and long-term strategies the Port can take to improve air quality in and around the harbor.

4.1 Air Quality and the Port Setting

As the 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 and regulatory agencies, will work together to manage and reduce the air pollutants associated with Port operations.

4.1.1 Air Emission Sources

Air emissions include gaseous and solid substances emitted into the atmosphere from processes such as fuel combustion or material handling. The presence of such pollutants in the atmosphere can create air pollution, which can affect the local climate, weather, the global environment, and public health.

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 identified 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 terminal 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.

4.1.2 Regulatory Framework

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; it is responsible for bringing the area into compliance and/or maintaining air quality within federal and state air quality standards.

4.2 Implementation Strategies to Improve Air Quality

To reduce public health risks and air pollutant emissions associated with the Port's operations, the Port is committed to operating in a responsible and sustainable manner. The development and implementation of air quality management policy requires both short- and long-term strategies to address immediate concerns and lay a foundation for establishing a cohesive, comprehensive and sustainable course of action that ensures attainment of the Port's long-range goals. Based on the current regulatory climate, industry standards, and the current state of operations at the Port, a series of short- and long-term strategies are presented below.

4.2.1 Short-Term Strategies

The short-term strategies are largely driven by regulatory compliance and equipment upgrades to ensure that Port operations stay current and consistent with the industry standards while complying with the federal, state, and local regulations.

AQ 1 - Update 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 highlights the Port's commitment to improving its understanding of the nature, location, and magnitude of emission from its various sources. It not only assists the Port in air quality control measure planning, but also enables the Port to better address the air quality impacts of Port operations.

Therefore, the Port will continue to update its EI at 5-year intervals, with the second EI to be prepared based on the Port's 2013 activity level. The purpose of the EI update includes the following:

- Compare with the 2008 baseline emission inventory and evaluate the air emission changes at the Port as air pollution control regulations and measures are phased in
- Evaluate the effectiveness and air quality benefits of the air quality control measures implemented at the Port
- Reset the Port's emission reduction priorities as needed after certain air quality issues have been successfully addressed
- Inform local, state, and federal regulatory entities in the Port's ongoing efforts on emission reduction and air quality improvement

Deliverables:

- 2014 Emissions Inventory based on the Port's 2013 activity level
- 2014 Emission Inventory Highlights, which is a reader-friendly report that briefly summarizes the 2013 emission level and emission trend of different emission sources at the Port.

AQ 2 - Maintain Drayage Truck Compliance

The statewide Drayage Truck Regulation was approved by the CARB to reduce emissions from drayage trucks transporting cargo to and from California's ports and intermodal rail yards. This regulation requires all on-road class 7 and class 8 (gross vehicle weight rating > 26,000 pounds) diesel-fueled vehicles to comply with the increasing stringent emissions standards set forth by the regulation. The Port is currently subject to the documentation and reporting requirements of this regulation to help monitor compliance and enforcement efforts. On a regular basis, as required by CARB, the Port has been reporting information collected from each noncompliant drayage trucks entering the Port's main gate to CARB for drayage truck compliance monitoring.

In addition to maintaining full compliance with the Drayage Truck Regulation at the Port's main terminal, the Port will establish appropriate protocols and expand the drayage truck monitoring and reporting program to all Port facilities.

Deliverables:

- Quarterly Noncompliant Truck Reports that will be submitted to CARB for reporting compliance
- Drayage Truck Extended Compliance Monitoring Protocol

AQ 3 - Maintain Shore-Side Power Project Compliance and Reporting

The California At-Berth Ocean-Going Vessels regulation has been established for at-berth emission reductions from auxiliary engines onboard OGV by utilizing grid-based shore power systems or other achievable equivalent emission reduction strategies. To comply with the reporting requirements set forth by this regulation, the Port has been providing annual wharfinger information (vessel visit information) to CARB since 2011 for the previous year's data.

For each vessel visiting the Port, the wharfinger information provided by the Port, at a minimum, includes the following:

- Name of the vessel
- Type of vessel
- Company operating the vessel
- Lloyd's number for each vessel
- Berth used by the vessel
- Date(s) and time the vessel was initially tied to the berth and subsequently released from the berth

In addition to CARB regulatory compliance, the Port will also require compliance management related to CARB Proposition 1B grant funding. In 2011, the Port was awarded \$4.5 million in Proposition 1B funding for shore power infrastructure. Compliance with key milestones is imperative in order to receive funding.

Deliverable:

- Annual Wharfinger Data Report that will be submitted to CARB to document compliance
- Regular correspondence regarding CARB Proposition 1B compliance

AQ 4 - Develop Terminal Equipment Upgrade Program

The Port will work with its customers and tenants to develop an equipment upgrade strategy to identify equipment to be replaced, repowered or retrofitted. Replacing, repowering, or retrofitting terminal equipment with newer or alternative fueled (i.e. natural gas or electricity) equipment could achieve appreciable surplus emission reductions moving the Port beyond the regulatory mandated emission reductions. Currently, there are 36 electric fork lifts operating at the Port. In addition, the Port replaced two of its five maintenance trucks with propane-fueled

trucks in 2011. The emissions performance of this repowered equipment is far superior to that of previous generations. The Port will also evaluate upgrading the locomotive engines currently operating on the Ventura County Railroad short-line railroad.

The following process shall be deployed in developing a strategy:

- The Port will first evaluate the emissions levels of all the current terminal equipment operating at the Port and rank all the terminal equipment based on their emission level.
- Based on the emissions ranking, the Port will identify the pieces of equipment with highest emission potential (possibly the highest 30 percent among all terminal equipment).
- With the “high emitters” identified, the Port will conduct a feasibility study on these “high emitters” based on the current availability of technology advancement and the Port’s financial state to investigate the technical and economic feasibility of upgrade these “high emitters.”
- The Port will then create a scoring system and assign a benefit score to each piece of the “high emitters” based on its emission level and technical and economic feasibility.
- Every time funding becomes available, the Port will proceed with the equipment upgrade on the “high emitters” that has the highest benefit score in the scoring system.

Although a terminal equipment upgrade program is listed as a short-term activity, it should be noted that due to the Port’s continuous effort on promoting air quality and the rapid-changing emission reduction technology advancement, the Port will also consider this terminal upgrade program as a long-term activity, which will be incorporated into the Port’s long-term air quality program.

Deliverables:

- Inventory and Compliance Assessment Report for In-Use port/terminal equipment
- In-Use Terminal Equipment Emission Evaluation/Scoring Report
- Feasibility Study for potential repowering, replacing, or retrofitting terminal equipment (Targeting those big emitters or out-of-compliance emitters)

AQ 5 - Design and Implement an Environmental Management Information System

The Port has an obligation to monitor and track its compliance with a wide variety of regulatory requirements. The design and implementation of an Environmental Management Information System (EMIS) will ensure the Port actively manages and complies with these regulatory obligations. An EMIS will store, process, and track key environmental data while reducing overall management costs.

Deliverables:

- An EMIS software solution
- Regulatory Compliance Flow Diagrams for each emission source
- Evaluation Report that summarizes potential strategy/method to migrate all paper compliance monitoring and reporting to electronic database
- Initial EMIS program implementation for compliance monitoring and reporting for one selected emission source.
- EMIS program implementation for extended compliance monitoring and reporting for other emission sources.

AQ 6 - Pursue Grant Funding

A wide range of federal, state and local grant programs provide opportunities to secure funding for implementation of replacement, repower or retrofit projects in advance of regulatory requirements.

The Port shall identify, begin positioning, and apply for applicable grant program opportunities. These activities include:

- Evaluate subscription to grant management system (i.e. eCivis).
- Build database of relevant grant programs and funding agencies
- Build relationships with funding agencies by attending conferences and workshops
- Target and apply for grant funding

Deliverable:

- Grant opportunity tracking database (spreadsheet)

4.2.2 Long-Term Strategies

As emission reductions and air quality improvements require ongoing efforts, the Port will endorse the aforementioned short-term activities, as well as long-term activities listed below.

AQ 7 - Green Lease Program

A significant amount of Port air emissions is contributed by terminal or tenant operations. Lease negotiation offers the opportunity for the Port to negotiate and require specific air emission control measures to be included in a lease agreements. The lease negotiation opportunities exist for renegotiated, amended, and new leases. This lease strategy will provide a legally binding mechanism to ensure that the desired emission reduction measures are implemented at the terminal.

All terminal leases have different renewal dates and terms such that the emission reduction requirements outlined in the lease will be phased in during different periods of time. To

incorporate the new emission reduction technologies that emerge over the course of a lease, the Port may consider incorporating new lease language or lease amendment conditions such as a protocols for periodic review of new technologies to assess cost, benefit, technical and operational feasibility and availability of such new technologies. The lease requirements that the Port considers incorporating into the new lease during lease negotiation period will include, but not be limited to, requirements associated with shore side power implementation and terminal equipment upgrade or replacement.

Deliverable:

- Evaluation/Summary of industry standard green lease practices

AQ 8 - Technology Advancement Program

Port-funded incentive programs will be one of the long-term, ongoing emission reduction measures to be implemented at the Port when funding (including grant funding) becomes available. Incentive-based measures funded by the Port will provide a business incentive for the participant to reduce air emissions beyond what is currently required by regulation or lease requirements. The incentive strategy can accelerate implementation of control measures that will become lease requirements or proposed regulations, and it also avoids regulatory authority control issues. Based on the Port's current setting, the Port will create incentive programs on the following three focus areas:

- Repower, replacement, or retrofit of harbor crafts
- Repower, replacement, or retrofit of cargo handling equipment
- Acceleration of emission reduction technology advancement

Deliverables:

- Technology Advancement Program Workplan
- Program Introduction Workshop

4.3 Key Performance Indicators

Key Performance Indicators provide metrics to measure and report success and provide transparency for stakeholders engaged in the Port's environmental stewardship efforts. The Port is committed to quantifying, monitoring, reporting, and keeping a record of all metrics used to evaluate the success of the strategies outlined herein. The performance of the air quality measures implemented at the Port will be assessed by analyzing the air pollutant concentrations over time in and around the Port.

4.3.1 Update Emissions Inventory

Emissions inventory updates will be an ongoing measure intended to monitor and track air emissions in the Port. It not only assists the Port in monitoring the quantity of emissions being

emanated from the Port operations, but also allows the Port to assess the overall effectiveness of all the air quality programs and/or emission reduction measurements underway at the Port. As indicated by its name, the key performance indicators embedded in the emission inventory are the quantity of emissions estimated for each emission source at the Port, including the following air pollutants:

- Criteria/Principle Pollutants
 - Carbon Monoxide (CO)
 - Oxides of Nitrogen (NO_x)
 - Particulate Matters (PM10 and PM2.5)
 - Oxides of Sulfur (SO_x)
 - Total Hydrocarbon (HC)
- GHG as Carbon Dioxide Equivalent (CO₂e)
 - Carbon Dioxide (CO₂)
 - Methane (CH₄)
 - Nitrous Oxide (N₂O)

As compared to the previous emissions inventory, the amount of emissions reductions, on a per air pollutants type basis, will clearly indicate the overall effectiveness of the Port's efforts on emissions reductions and air quality improvements at the Port.

4.3.2 Other Key Performance Indicators

While an emission inventory indicates the overall effectiveness of all the measures including regulatory mandates, the effectiveness or the performance of a specific measure or program with regard to emission reductions may also be measured by additional key performance indicators. The key performance indicators for the specific measures/programs are as follow:

Drayage Truck Compliance

- Annual non-compliant drayage truck data submitted to CARB
- Drayage truck monitoring and reporting protocols developed for each facility at the Port
- Quarterly program progress report

Shore-side Power Project Compliance and Reporting

- Annual wharfing data reports submitted to CARB
- Progress reports submitted to South Coast Air Quality Management District (SCAQMD)
- Quarterly program progress reports regarding the installation and implementation of the shore-side power infrastructure

Design and Implement an EMIS

- Identify data to be track/monitored in an EMIS
- Plan and schedule design
- Plan and schedule implementation

Replacement and Repower of Terminal Equipment

- Annual number of terminal equipment replaced, repowered, or retrofitted
- Projected amount of annual emission reduction per pollutant
- Percentage of emission reduction per air pollutant compared to the Port's overall emission levels

Pursue Grant Funding

- Success rate of grant award
- Amount of funding awarded
- Number of grants awarded
- Cost effectiveness of the grant application (labor for application vs. funding awarded)
- Projected amount of emission reduction per pollutant can be achieved by the funding

Lease Negotiation

- Tenant's acceptance on the lease requirements regarding emission reduction
- The emission reduction requirements that have been incorporated into the new lease or lease amendments
- Advancement of emission reduction technologies at the Port resulted from lease negotiation
- Amount of emission reduction per air pollutant resulted from lease negotiation

Development of a Technology Advancement Program

- Program participation rate
- Projected amount of annual emission reductions per pollutant type from the incentive program
- Cost effectiveness of the incentive program (the program cost vs. the emission reduction benefits)
- Extent to accelerate emission reductions
- Percentage of emission reductions per air pollutant compared to the Port's total emissions

4.4 Budget

The following matrix gives a range of budgetary estimates to conduct the short- and long-term strategies established under Section 4.2. The Port will amend this Section as more information and definition to these tactics and strategies becomes available.

SECTION FOUR Air Quality

Strategy/Tactic	Budgetary Cost Range	Basis of Estimate/Comments
AQ-1 – Update Emissions Inventory	\$24,000 - \$34,000	Budget range is based on data gathering methods
AQ-2 – Maintain Drayage Truck Compliance	\$5,000 - \$7,000	Assumes quarterly reports and necessary outreach
AQ-3 – Maintain Shore Power Project Compliance and Reporting	\$10,000 - \$20,000	Assumes management of CARB regulatory compliance and Prop 1B compliance
AQ-4 - Develop Terminal Equipment Upgrade Program	\$20,000 - \$25,000	Assumes program development and implementation. Does not assume funding for equipment upgrades
AQ-5 - Design and Implement an Environmental Management Information System	See Water Quality Section	Assumes identification of user needs and EMIS framework and Phase I development and improvements.
AQ-6 - Pursue Grant Funding	\$30,000 - \$42,000	Assumes grant research and submittal of three grant application
Short-Term Strategies Subtotal	\$89,000 - \$128,000	None
AQ-7 - Green Lease Program	\$15,000 - \$20,000	Assumes costs are for program development and implementation. Involves benchmarking and assessing other Port lease agreements
AQ-8 - Technology Advancement Program	\$50,000 - \$75,000	Assumes 1-year duration and involves identifying program parameters, outreach, proposal process, setting up review committee, etc.
Long-Term Strategies Subtotal	\$65,000 - \$95,000	None
Total	\$154,000 - \$223,000	Does not include the cost to implement future strategies derived from the activities described thus far in this Policy.

4.5 Conclusion

The Port's goal is to improve air quality by addressing existing issues and implementing policies and procedures for air quality management that will ensure the long-term protection of human health and the environment in the most sustainable manner possible. The plan identifies both short- and long-term strategies to be considered by the Port and is supported by a series of key performance indicators intended to evaluate progress. The tactical implementation of the strategies identified in this plan will not only ensure regulatory compliance and the long-term protection of human health and the environment, but also promote environmental stewardship by moving the Port beyond compliance.

SECTION 5 MARINE RESOURCES

This marine resources strategic implementation plan seeks to identify short- and long-term strategies the Port can take to improve the quality of marine resources.

5.1 Marine Resources and Port Setting

Consistent with the Port’s mission statement, 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 pollution prevention and the conservation and protection of marine resources including waterfowl, sea life, and wildlife habitat.

5.1.1 Wildlife and 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 within and surrounding the Port. Marine animals and fowl tend to be transient, migratory, and may inhabit the Port at different times of the year. Thus, understanding offshore resources, changes in land use around the Port complex, and seasonal factors will assist in long-term planning and environmental monitoring to determine environmental health trends of the harbor.

Wildlife assessment, invasive species education, long-term study of marine organisms, and wetland preservation are some of the strategies intended to quantify and protect flora and fauna of the littoral zone and other dependent organisms in the Port and surrounding areas. The littoral zone is referred to as the shallow marine environment that extends to the edge of the continental shelf. Wetlands, such as the Ormond Beach Wetlands, and organisms inhabiting this environment form part of this zone. Due to their dependence on this marine environment, waterfowl, such as waders, gulls, pelicans and herons, are directly impacted by fluctuations in species populations in the marine environment and are, therefore, treated as biological resources to the Port. For the purposes of this Plan, the Ormond Beach Wetlands, located south of the Port, 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. 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 biological/environmental studies.

5.1.2 Pollutant Sources

The Port's marine resources are potentially impacted by pollutants from various legacy and ongoing sources and with multiple exposure pathways. These include polluted soil, sediment, and ballast water, runoff from the surface features, runoff from the local storm drain system, and the direct or aerial discharge of pollutants into the waters and soil of the Port.

Of primary concern to the Port is the introduction of invasive species to its jurisdiction. Invasive species are introduced animals or plants that are non-native to a region. Foreign invasive species may not have natural predators in their introduced habitat, leading to uncontrolled population growth, while often diminishing and threatening the populations of native species due to predation, competition, and other means. When ships discharge their ballast water into port waters, there is the possibility of introducing foreign invasive species that might harm native species' populations. This is because ships calling on the Port may have taken on their ballast water in foreign waters and plants and animals, including potentially invasive species, are present to in ballast water taken on by these ships.

Employing specific BMPs and control measures in managing pollutant impacts and discharges to the Port's waters, air, soil, and sediment, in conjunction with strict compliance with applicable laws, regulations, and permits regarding the discharge of pollutants, will result in continued protection of the region's marine resources. Programs that will protect and improve the environmental health of the Port and thus the health of its marine resources are discussed further in the additional Strategic Implementation Plans. Also, the Port has identified potential impacts to marine resources from elevated sea level and warmer conditions due to climate change addressed in the Climate Change Mitigation Implementation Plan. However, there are measures relating strictly to the biological resources that the Port may employ.

An imperative element in managing a resource is a detailed understanding of that resource. Therefore, the Port's first step must be performing a biological inventory and assessment of the Port's existing and potential marine resources including sea life, waterfowl, and habitat. The Port will utilize this assessment as an opportunity to participate in environmental stewardship of Ormond Beach Wetlands and to engage and involve the community in the protection and restoration of this important community resource. The assessment will serve to identify and quantify the Port's marine resources and will serve as a basis for further planning and assessing long-term impacts in the Port and wetland's biological diversity. This assessment may also serve to focus effort in employing sustainable Port policy, identifying departmental staff to lead initiatives, and implementing more sustainable BMPs in water, air, and soil quality management to address problem areas that are impacting the health of the Port's marine resources.

5.2 Implementation Strategies for Marine Resources Management

The marine resources strategic implementation plan seeks to identify short- and long-term measures the Port can take to improve, monitor, and measure the quality of marine resources. The strategies are rooted in BMPs that focus on the management and protection of natural resources in and around the Port. The Port's commitment to natural resource protection is part of a broader goal to operate the Port in the most environmentally responsible manner possible.

5.2.1 Short-Term Strategies

Short-term strategies are those activities that should be initiated within 1 to 3 years to improve and protect marine resources in the Port. These activities are driven mainly by administrative activities, collaboration, and BMPs; these activities also serve to establish a baseline of current conditions at the Port.

MR 1 - Wildlife Assessment

The Port will identify and quantify wildlife in the Port through a detailed species census. The census will serve as a baseline assessment for future initiatives focused on the protection of wildlife habitat and marine ecosystems. This species census will quantify species in the littoral zone. The species to be quantified include, but are not limited to, marine mammals, waterfowl fish, kelp and other marine grasses.

Some of the activities for achieving the success of a wildlife assessment and continuation of the protection of wildlife will include:

- Performing a baseline assessment to quantify species of flora and fauna populations in harbor waters utilizing active counting of selected wildlife species and available literature of biological studies in the area
- Adjusting implementation plans according to findings and considering new protective measures
- Identifying Port operations that pose a potential threat to marine resources
- Recording climatic events such as storms, Santa Ana weather patterns, red tides, etc.
- Identifying Invasive Species

A biological/wildlife consulting company will be responsible for conducting a census of species present that will serve as a baseline to track species on a periodic basis. The information obtained will be used to educate and inform the community about the wildlife diversity that exists in and around the Port.

Deliverable:

The deliverable for the Wildlife Assessment will consist of a detailed report summarizing the findings and recommendations of the biological consultant. The report will address all of the

items discussed above. The report can serve as a living document that can be updated periodically as the Port tracks trends and conditions of plant and animal communities over time.

MR 2 - Invasive Species Education

The Port will implement a comprehensive Invasive Species Education program to educate Port personnel, industry stakeholders, and the community of the risks and threats of introducing non-native species to the Port and local biodiversity (i.e. flora and fauna of the region).

This program will educate and inform using a combination of resources including informative seminars and literature. The program will raise awareness of invasive species using the following strategies:

- Pathways for invasive species intrusion
- Methods for invasive species identification
- Identification of geographic sources
- Mechanisms for competition and survival
- Dispersal ability and adaptation
- Cases studies and impacts of successful invasions
- Preventive measures

The education campaign on invasion and identification of invasive species will include the identification of possible source ports, tips for early detection and eradication of small populations of invasive species and a plan for the periodic inspection of high-risk areas and possible restoration of vegetation to help protect native species. By implementing this preventive plan, areas of high ecological value and vulnerability will be more protected against invasions. The scope of the Invasive Species Education program development is contingent upon the findings of the Wildlife Assessment, but at a minimum, appropriate bilge water BMPs should be addressed.

Deliverables:

Invasive Species Education has two primary project deliverables.

- The first will be the development of an informative seminar to present and discuss the items bulleted above. The seminar's deliverables will include an agenda, a PowerPoint presentation, and take-home literature. The seminar will be tailored to its audience, whether Port staff, the community, or other stakeholders.
- The second deliverable will be the production of informative literature. The literature will consist of a concise summary of the items bulleted above. Once approved by the Port, the literature will be posted on the Port's website, sent electronically to Port stakeholders including shipping companies, and made available to the public and Port personnel in the form of a brochure.

5.2.2 Long-Term Strategies

MR 3 - Track and Monitor Marine Flora and Fauna

Utilizing the proposed Wildlife Assessment discussed above, the Port will track trends and conditions of selected plant and animal communities over time. Species populations and biological metrics that warrant ongoing tracking and monitoring will be determined by the Port using the Wildlife Assessment as a guiding document. Impacts to these sensitive populations could be unrelated to Port operation and should be accounted for and documented in a periodic biological report. In addition, changes to Port operating procedures and amendments to Port policy should be chronicled as part of Port biological data management, to reference any potential impacts emerging from Port maritime operations. This information will be incorporated into the Invasive Species education seminars and literature to engage the community on the Ports efforts to protect marine resources.

Deliverables:

- Using the Wildlife Assessment discussed above, the Port will select biological metrics and species that require ongoing tracking and monitoring. A frequency and schedule for conducting monitoring events will be developed. Each monitoring or tracking event or series of related events can be summarized in limited tracking reports. These reports can be added to the Port's ongoing Wildlife Assessment.

MR 4 - Wetlands Conservation

The Port has taken the initiative to rehabilitate wildlife and help protect and restore wildlife habitat. In addition to the marine life and environment within the Port, the protective efforts will be expanded to include Ormond Beach Wetlands as financially feasible. Through a cooperative program with the City of Oxnard and Point Mugu Air Naval Station, which share a responsibility in the protection of the wetlands, the Port can minimize impact and support rehabilitation of the wetlands, which is home to over 200 bird species. Also, the Port's capital improvement projects and maintenance dredging provide opportunities for rehabilitation by utilizing dredged material for the replenishment of starved beaches and mud flat environments. The beneficial uses of dredged material will be established in a document for the beneficial reuse of dredge spoils; such document is proposed in the Soil and Sediment Implementation Plan.

Wetlands conservation strategies will include a count of measures adopted by the Port to support wetland conservations and wildlife habitat, including the number of incidents of utilization of dredged spoils to replenish beaches of wetlands and quantification of species events of species for long-term tracking of impacted species; other activities may include community beach and wetland cleanup days. Strategies to reduce edge effects including

lighting, noise, and wave energy at wetland and habitat boundaries will help to improve the quality and function of these systems.

Deliverables:

- The deliverables for Wetlands Conservation, other than the document for the beneficial reuse of dredge spoils, are yet to be determined. It is recommended that the Port reach out to the City of Oxnard and Point Mugu Air Naval Station to discuss opportunities in Wetlands Conservation at Ormond Beach. Based upon this outreach, the Port might consider the development of a Wetlands Conservation Program that is outlined in a strategic document, although such a document may not be necessary.

5.3 Key Performance Indicators

Key Performance Indicators provide metrics to measure and report success and provide transparency for stakeholders engaged in the Port's environmental stewardship efforts. The Port is committed to quantifying, monitoring, reporting, and keeping a record of all metrics used to evaluate the success of the strategies outlined herein.

Ultimately the performance of the measures to protect marine resources will be assessed through the implementation of the above-mentioned activities. While quantifying progress of these activities will require continued implementation and documentation, the Port will utilize annual reporting to track performance and success of the strategies listed above.

5.3.1 Wildlife Assessment

The effectiveness of this assessment will be gauged by the useful information obtained through the measurement and tracking of population numbers in direct relationship with Port operations, climate, and other natural factors impacting marine resources. A wildlife assessment will determine the number of species impacted by Port operations and will outline the need and frequency of long-term monitoring of the species.

The key performance indicators of assessing baseline and long-term wildlife populations are:

- Population count of species
 - Number of marine plant species
 - Number of marine mammals and other sensitive species
 - Number of bird species
 - Number of terrestrial plant species
 - Number of terrestrial animal species
- Natural disasters or events potentially affecting marine resources

SECTION FIVE

Marine Resources

- Number of Port wildlife and environment protective measures/efforts
- Number of Port operations that could potentially impact environment

Tracking of regulatory listings published by California Department of Fish and Game (CDFG) and the United States Fish and Wildlife Service (USFWS).

The Wildlife Assessment will ultimately establish a baseline from which to monitor specie population counts over time. This will help the Port better understand how changes in Port operations may impact the marine resources and habitats at the Port.

5.3.2 Invasive Species Education

The effectiveness of the Invasive Species Education program may be seen in the number of efforts to spread and educate Port employees, the community and industry stakeholders.

The key performance indicators of assessing baseline and long-term wildlife populations are:

- Review of Findings from Marine Resources Census
- Number of Invasive Species Education seminars
- Amount of literature distributed with the purpose of educating and updating about invasive species
- Number of coordinated activities between the Port and Community to protect wildlife including Ormond's Beach Wetlands
- Number of other Port initiatives intending to prevent and educate

Invasive species education is intended to encourage the protection and monitoring of marine resources in and around the Port.

5.3.3 Wetlands Conservation

The effectiveness of the wetlands conservation may be seen in the number of initiatives taken by the Port or in conjunction with the City of Oxnard and Point Mugu Naval Air Station and beneficial reuse of dredge sediments to replenish beach and wetland territory.

The key performance indicators of assessing wetlands conservation are:

- Number of coordinated activities between the Port, the local community, and industry stakeholders
- Number of implemented measures supporting wetland conservation
- Amount or events of dredged soils reuse for wetland or beach conservation

Wetlands conservation measures should be closely coordinated with local community groups and industry stakeholders.

SECTION FIVE

Marine Resources

5.3.4 Track and Monitor Marine Flora and Fauna

The effectiveness of long-term tracking of marine organisms may be seen in a continuous assessment of wildlife population numbers. However, these numbers need to be assessed over time, as variations in Port operations, climate, and other natural factors impact marine resources.

The key performance indicators of assessing long-term wildlife populations are:

- Number of new species identified since previous wildlife assessment
- Change in number of species since previous wildlife assessment
- Number of new Port wildlife and environment protective measures/efforts
- Number of new changes in Port operations that could potentially impact the environment
- Impact of species in the long term will be built and based on the initial Wildlife Assessment and count of species

These ongoing assessments will provide the Port with information to develop sustainable BMPs intended to protect wildlife and their habitat from the impacts of Port operations.

5.4 Budget

The following matrix gives a range of budgetary estimates to conduct the short- and long-term strategies established under Section 5.2. The Port will amend this Section as more information and definition to these tactics and strategies becomes available.

Strategy/Tactic	Budgetary Cost Range	Basis of Estimate/Comments
MR 1 – Wildlife Assessment	\$50,000-\$75,000	Includes a detailed report prepared by a biological/wildlife consultant.
MR 2 – Invasive Species Seminar	\$20,000 - \$30,000	Includes development and presentation of a seminar for invasive species education. The seminar will be developed in using the findings of the Wildlife Assessment in conjunction with the biological consultant. Includes development and distribution of literature for invasive species education. The literature will be developed in using the findings of the Wildlife Assessment in conjunction with the biological consultant. The literature can will be posted on the Port’s website, sent electronically, and distributed in the form of a brochure.

SECTION FIVE Marine Resources

Strategy/Tactic	Budgetary Cost Range	Basis of Estimate/Comments
Short-Term Strategies Subtotal	\$70,000 - \$105,000	
MR 3 – Track and Monitor Marine Resources	TBD	The necessity for the ongoing tracking and monitoring of Marine Resources will be determined using the findings of the Wildlife Assessment.
MR 4 – Wetlands Conservation	\$10,000 - \$15,000	This will cover costs to develop initial strategies for Wetlands Conservation including outreach to the City of Oxnard and Point Mugu Naval Air Station.
Long-Term Strategies Subtotal	\$10,000 - \$15,000	
Total	\$80,000 - \$120,000	Does not include the cost to implement future strategies derived from the activities described thus far in this Policy.

5.5 Conclusion

The Port’s initiative to protect its marine resources includes the assessment and long-term monitoring of the Port’s water’s flora and fauna, including Ormond Beach Wetlands; an Invasive Species Education program and the conservation and protection of wetlands.

In accordance with BMPs, the Port has accepted sustainable practices consistent with federal and state statutes for the protection of the environment and is committed to the conservation and protection of its marine resources and prevention of environmental impacts resulting from Port operations.

SECTION 6 SOIL AND SEDIMENT

The Port’s mission statement declares 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 part of conducting maritime terminal operations in accordance with generally accepted sustainable practices, public trust, and applicable regulations, the Port is committed to the protection and best management of soil and sediment.

The Port’s goal is to improve soil and sediment quality by addressing existing critical issues and implementing policies and procedures for soil and sediment management that will ensure long-term protection of human health and the environment in a sustainable manner.

The purpose of this Soil and Sediment Management Strategic Implementation Plan (SSMSIP) is to outline a strategy (including short- and long-term activities) that will:

- Reduce public health risks associated with soil and sediment
- Ensure the Port compliance with current regulations for both the Port and tenant operations
- Guide the future handling of contaminated soil and sediment in a manner that maximizes sustainability while also minimizing mitigation costs
- Ensure soil and sediment issues do not impact long-term development plans
- Establish key performance indicators with anticipated completion dates

Provided in the sections below are: a background on soil and sediment contamination and regulatory framework in the Port setting; an implementation strategy including short- and long-term activities; key performance indicators describing the major milestones for this SSMSIP; and a conclusion summarizing how this SSMSIP will address the Port’s goals for management of soil and sediment.

6.1 Soil and Sediment Issues in the Port Setting

A discussion of soil and sediment issues found in the Port setting, including common sources of contamination and the regulatory framework for management of soil and sediment, is provided below.

6.1.1 Sources of Contaminated Soil and Sediment

Soil and sediment quality in the Port setting can be impacted by many factors including point source discharge of pollutants such as spills, leaks, and illicit discharges on Port property; migrating groundwater plumes; and stormwater runoff from upstream properties. For example, contaminants originating from farming and industrial operations in the vicinity of the Port (petroleum hydrocarbons, volatile organic compounds [VOCs], polynuclear aromatic

SECTION SIX

Soil and Sediment

hydrocarbons [PAHs], pesticides, herbicides, and metals) can potentially impact soil and sediment in the Port. Furthermore, existing soil and sediment contamination within the Port have the potential to migrate and spread via tidal influences, sediment mobilization via boat action, volatilization, diffusion and advection, and mass transfer mechanisms (e.g., groundwater plume migration). Lastly, VOCs and petroleum hydrocarbons undergo natural biodegradation, which may result in the formation of degradation byproducts that are more toxic than the original constituent (e.g., vinyl chloride from tetrachloroethene [PCE]).

6.1.2 Regulatory Framework

The EPA, the United States Army Corps of Engineers (USACE) and the California Environmental Protection Agency (Cal-EPA) provide the framework in regulating the management of contaminated soils and sediments in the port setting. In California, Cal-EPA is the umbrella agency overseeing the State Water Resources Control Board (SWRCB), the Department of Toxic Substances Control (DTSC) and the CARB, all of which have a stake in regulating the management of contaminated soils and sediments at the Port. The 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. Other regulatory agencies that could be involved in the management of contaminated soils and sediments include the California Coastal Commission (CCC), National Marine Fisheries Services and CDFG. The management of soil and sediment is driven by the potential for soil and/or sediment to pose a risk to sensitive receptors (i.e., human contact, contribution to drinking water contamination, inhalation) when left in place, when dredged or excavated and re-used, or when dredged or excavated and disposed of offsite. This risk forms the basis for developing measures to improve soil and sediment quality at the Port and serves as the driver for implementation of soil and sediment best management practices.

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 Regional Water Quality Control Board (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 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.

The federal Clean Water Act (CWA) Section 404 has established 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.

When soil (or sediment) is disposed, it is generally classified into one of four divisions: non-hazardous soil, California hazardous, non-Resource 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, in particular because a non-hazardous waste designation does not ensure that soil is not impacted.

6.2 Implementation Strategies for Soil and Sediment Management

The development and implementation of a sound soil and sediment management policy requires both short- and long-term strategies to address immediate concerns and lay a solid foundation for establishing a cohesive, comprehensive and sustainable course of action that ensures attainment of the Port's long-range goals. Short- and long-term strategies are provided below.

6.2.1 Short-Term Strategies

Critical activities to be undertaken by the Port in the short-term are generally regulatory driven to address the Port's objectives of protecting human health and the environment while complying with applicable laws and regulations. Defining existing conditions at the Port and the creation of an over-arching document that describes the Port's policies and procedures for soil and sediment management have been identified as the two primary short-term strategies. Discussions of these short-term strategies, including sub-tasks, are provided below.

SS 1 - Define Existing Conditions at the Port

To avoid regulatory noncompliance, identify immediate contaminant risks, and establish a foundation for moving forward, the Port will first need to have a comprehensive understanding of the existing conditions at the Port from both a regulatory compliance perspective and an

existing contaminant impact perspective. The following tasks have been identified in order to accomplish these objectives:

Identify and Review Existing Regulatory Correspondences

Ensuring the Port and its tenants are in compliance with pertinent regulations is the highest priority and can be achieved in a relatively short period of time. Review of all correspondences between regulatory agencies and the Port (and its tenants) will reveal Port issues that need to be addressed immediately, as well as potential future liabilities that may arise as a result of changing regulations.

Conduct Inventory of Existing Contaminated Soil and Sediment Sites

An inventory of existing contaminated soil and sediment sites will be performed by reviewing Port files and regulatory database records. A thorough understanding of existing contaminated sites will allow the Port to prioritize site cleanup activities based upon the level of contamination, future land use/development plans and, most importantly, the human health and environmental risk level posed by a given site.

Conduct Inventory of Hazardous Materials

An inventory of hazardous materials stored at the Port and at tenant locations will be performed to identify potential sources of contamination and will allow the Port to more effectively respond to and better protect against an accidental release.

Perform Limited Soil and Sediment Baseline Investigation

The Port will establish baseline soil and sediment conditions with the intent of characterizing the impacted soil and sediment volume, toxicity, and potential threat to human health and the environment. As described in the Marine Resources Management Strategic Implementation Plan, a biological baseline of sediment will also be conducted to assess the general health of the organisms and water column within which the organisms live.

In order to gain a complete understanding of the existing soil and sediment conditions at the Port, the collection of soil and sediment samples at select locations for analyses of various constituents will likely be recommended to supplement information obtained in the tasks above. Sampling locations and laboratory analyses will be dependent upon historical and current land use, as well as the results of the regulatory records database review.

Prepare Baseline Soil and Sediment Conditions Report

Following completion of the above tasks, a Baseline Soil and Sediment Conditions Report will be compiled to document the findings and provide recommendations for addressing any critical conditions identified. The report will summarize the Port and its tenant regulatory compliance

status with respect to soil and sediment and will summarize existing areas of known soil and/or sediment contamination. The report will serve as a guide to allow the Port to address critical issues and will also lay the groundwork for the development of a comprehensive Soil and Sediment Management Guide (SSMG) that is described below.

Deliverable:

- A Baseline Soil and Sediment Conditions Report documenting findings from the regulatory review, contaminated properties inventory, hazardous materials inventory and limited baseline investigation.

SS 2 - Develop Soil and Sediment Management Guide

The purpose of the SSMG will be to provide the Port with an easy to use reference guide summarizing Port policies and procedures that will guide future soil and sediment management activities. The policies and procedures of the SSMG will be prepared in accordance with federal and state regulations pertaining to federal hazardous waste defined in Title 40, Code of Federal Regulations (40 CFR) and California State hazardous wastes as defined in Title 22, California Code of Regulations (22 CCR) and will be consistent with the stormwater pollution prevention plan (SWPPP) and spill, prevention control and countermeasure plan (SPCCP) that will be implemented by the Port according to the Water Quality Strategic Implementation Plan.

The policies and procedures outlined in the SSMG will be designed to maintain regulatory compliance while laying a framework for the Port to manage soils and sediments in the most cost-effective and sustainable manner.

The SSMG will include, but not necessarily be limited to, the following sections:

Definition of Import Fill and Soil/Sediment Reuse Options and Requirements

The purpose of defining and implementing soil and sediment standards for imported fill and the reuse of excavated and dredged sediments is to have documented control of the quality of soil and sediment being brought into or reused at the Port. Without proper guidelines, import fill and soil and sediment reuse can be potential sources of contamination posing greater risk to soil and sediment quality at the Port.

Soil Management Alternatives for Contaminated Soil

This section will describe specific soil handling and remediation alternatives that consider current and/or future land use, cost, and sustainability factors. A process for selecting the most suitable remediation approach will be outlined and will include factors such as cost, estimated cleanup time, and green and sustainable metrics.

Sediment Management Alternatives for Contaminated Sediment

Similar to the Soil Management Alternatives for Contaminated Soil section above, this section will outline specific sediment handling and remediation alternatives that consider current and/or future Port development plans, cost, and sustainability factors. A process for selecting the most suitable management and remediation approach will be outlined and will include factors such as cost, estimated cleanup time, and green and sustainable metrics.

Deliverable:

- A SSMG summarizing import fill/re-use criteria and soil and sediment management/remediation alternatives.

6.2.2 Long-Term Strategies

While short-term strategies address immediate concerns and provide the foundation for successful execution of the Soil and Sediment Management Strategic Implementation Plan, long-term strategies will be required to ensure the stewardship of soil and sediment management and the protection of human health and the environmental. Long-term strategies will include:

SS 3 - Monitor and assess regulatory changes pertinent to Port soil and sediment management

Regular monitoring and assessment of regulatory changes pertinent to Port soil and sediment management.

SS 4 - Updates of SSMG performed on a yearly basis

Yearly updates of the SSMG with revisions related to applicable regulatory changes; technological advances; and/or changes to Port soil and sediment existing conditions.

SS 5 - Design and Implementation of an EMIS

Design and implementation of an EMIS for storing, processing, and tracking key environmental data collected during the Port's soil and sediment activities, including sustainability metrics. The EMIS will help to streamline compliance activities and ensure all compliance obligations are met while reducing overall management costs.

Long-term strategies may be added or modified depending upon the results of implementing the short-term strategies.

Deliverables:

- Regulatory Update Memorandum;
- Revised / updated version of SSMG; and
- Active EMIS.

6.3 Key Performance Indicators

Key Performance Indicators provide metrics to measure and report success and provide transparency for stakeholders engaged in the Port's environmental stewardship efforts. The Port is committed to quantifying, monitoring, reporting, and keeping a record of all metrics used to evaluate the success of the strategies outlined herein.

Define Existing Conditions at the Port:

- Complete within 6- to 12-month duration.
- Prepare a Baseline Soil and Sediment Conditions Report to be completed by end of 2013 or 1 year following Port authorization to begin work.

Development of SSMG:

- Complete within 6 months following completion of Baseline Conditions Report.
- Complete mid to end of 2014 or 18 months following Port authorization to begin work.

Monitor and assess regulatory changes pertinent to Port soil and sediment management

- Perform annual review and evaluation of regulatory requirements

Updates of SSMG performed on a yearly basis

- Perform annual review of SSMG and update as necessary

Design and Implementation of an EMIS:

- Identify data to be managed in EMIS
- Complete within 6 to 12 months
- Completed by end of 2015

6.4 Budget

The following matrix gives a range of budgetary estimates to conduct the short- and long-term strategies established under Section 6.2. The Port will amend this Section as more information and definition to these tactics and strategies becomes available.

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Strategy	Budgetary Cost Range	Basis of Estimate/Comments
SS 1 - Define existing soil and sediment conditions at the Port/ Prepare a Baseline Soil and Sediment Conditions Report	\$50,000 - \$200,000	Includes regulatory review, inventory of existing contaminated properties, inventory of hazardous materials, and limited baseline investigation. Total cost will be dependent on quantity and complexity of review material and extent of baseline investigation necessary. Total cost will be dependent on extent and complexity of findings identified during the existing conditions evaluation.
SS 2 - Development of Soil and Sediment Management Guide	\$20,000 - \$40,000	Assumes no more than four soil and sediment management and remediation options will be evaluated. Assumes re-use guidelines specific to the Port will be readily available from overseeing regulatory agency.
Short-Term Strategies Subtotal	\$70,000 - \$240,000	NA.
SS 3 - Conduct annual review of regulatory changes pertinent to soil and sediment management at the Port	\$10,000 - \$20,000 (annually)	Establishing and managing the Program for the first year. The cost varies widely depending on scope and complexity of the plan.
SS 4 - Perform annual review and update of SSMG	\$5,000 - \$15,000 (annually)	Establishing and managing the Program for the first year. The cost varies widely depending on scope and complexity of the SSMG.
SS 5 - Design and Implement EMIS	See Water Quality Section	Assumes identification of user needs and EMIS framework and Phase I development and improvements.
Long-Term Strategies Subtotal	\$15,000 - \$35,000	None.
Total	\$85,000 - \$275,000	Does not include the cost to implement future strategies derived from the activities described thus far in this Policy.

6.5 Conclusion

The Port's goal is to improve soil and sediment quality by addressing existing critical issues and implementing policies and procedures for soil and sediment management to ensure the long-term protection of human health and the environment in the most sustainable manner possible. The plan identifies both short- and long-term strategies to be considered by the Port and is supported by a series of key performance indicators intended to evaluate progress. The tactical implementation of the strategies identified in this plan will not only ensure regulatory compliance and the long-term protection of human health and the environment but also promote soil and sediment stewardship by moving the Port beyond compliance.

SECTION 7 WATER QUALITY

This water quality strategic implementation plan seeks to identify short- and long-term measures the Port can implement to improve the quality of its harbor waters.

7.1 Water Quality and the Port Setting

The Port’s mission statement affirms that 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 protect, enhance, and maintain the environmental resources within the harbor while promoting 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 management, protection, and improvement of urban and stormwater runoff into the harbor and surface water quality important to sustaining beneficial uses.

7.1.1 Pollutants Sources of Contamination

The harbor, like most water bodies, is impacted by contaminants emanating from multiple sources that are delivered to the harbor by multiple carriers (air, stormwater, dissolution, ocean currents), via multiple pathways or routes (deposition, storm drain system, direct discharge). Due to this variable source, carrier, and pathway, management and implementation activities may take a multitude of forms that collectively contain, control, and/or capture pollutants.

Many factors including the reduced circulation, legacy sediment pollutants, dry weather and wet weather urban runoff, aerial deposition, and terminal operations and housekeeping can impact water quality in the harbor. For example, jetties and breakwaters constructed to protect Port operations alter circulation; contaminants carried by stormwater runoff are discharged to the water column and can settle in sediments; and point sources such as spills, leaks, and illicit discharges from port operations and ships provide another route for pollutants.

The contaminants that commonly impact Port waters include: sediment and pollutants attached to sediment, nutrients (specifically nitrates and phosphates), toxic substances (heavy metals, pesticides, petroleum products, bacteria), and physiochemical altering factors.

Of these pollutants and pathways, protection of water quality at the Port can be accomplished largely through pollutant source abatement or reduction, prevention of discharge of pollutants contained in direct discharges and stormwater, and passive and active treatment activities. Employing specific BMPs and control measures applicable to terminal operations, harbor and stormwater management, sediment management, and harbor operations in conjunction with strict compliance with applicable laws, regulations, and permits, will result in continued

protection and improvement of water quality. This will require outreach to operators, tenants, and other nearby stakeholders.

7.1.2 Regulatory Framework

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. Portions of the Port Harbor Back Basin are currently listed on the LARWQCB 303d list. The five listings identify contamination is present in the area. Specific action is being taken to address these listings.

7.2 Implementation Strategies to Improve Water Quality

Planning and implementation of strategies to improve water quality will require resources within the Port who are able to coordinate and facilitate efforts. Areas of importance for management and implementation will include data and information services to control and maintain the multitude of data streams necessary for reporting and informed management decisions, contact with tenants and operators in the Port (leases, contracting, engineering), and outreach marketing (public, business groups). Short-term and long-term activities shall focus on the integration of three major areas: harbor water and sediment quality management, terminal and Port operations, and stormwater management.

7.2.1 Short-Term Strategies

Short-term strategies are those activities that should be implemented within 1 to 3 years and are intended to improve and protect water quality at the Port. These activities are relatively simple initiatives that are largely regulatory driven or are intended to update Port policy. Completing these activities will improve opportunities to obtain sustainability, water quality, air quality, and environmental restoration funding grants.

WQ 1 - Stormwater Pollution Prevention Plan and Industrial Stormwater Reporting

The Port is currently subject to the reporting and sampling requirements of the SWRCB Industrial Stormwater General Permit (Order No. 97-03-DWQ). As part of this general permit, the Port is required to have an up-to-date SWPPP, perform sampling and inspections as set forth in the general permit, and submit an annual report to the LARWQCB with the results of this sampling by July 1 of each year. The SWRCB currently has a draft update to Order No. 97-03-DWQ, which would greatly expand the scope and activities required to be management and implemented once approved.

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While the Port currently completes its sampling and reporting requirements, the existing SWPPP was written in 1997 and requires revision to account for changes to the Port's facilities and operations since that date.

The goal of the SWPPP is to inventory and isolate stormwater from potential pollutant sources (sediment, oil/grease, and other chemicals), as well as understand and document pollutant carriers and pathways through facility mapping. A revised SWPPP will provide a tool that represents current conditions and ensures that major pollutant sources within the Port are accounted for, that the BMPs specified are adequate to address these pollutant sources, and ensure that the facility site map is up to date and accounts for all discharge locations.

Port employees should be trained to monitor and document visual observations of discharges as well as be trained in the collection of samples to document specific discharge points. Only certain storm events are eligible for sampling under the General Permit. Employees conducting discharge point sampling should be familiar with the conditions that make a storm eligible for sampling and sample handling procedures. The updated SWPPP will include details on necessary training for those responsible for implementing the SWPPP (inspections, sampling, reporting).

A comprehensive site compliance evaluation should take place annually to assess whether BMPs included in the SWPPP are being implemented, if BMPs appear to be effective, and if changes in the facility operations require revising the SWPPP to include additional BMPs. E2 ManageTech, Inc. recommends that this comprehensive evaluation be performed, documented, and reported to the Port by a third-party familiar with performing stormwater audits.

Deliverables:

- Summary of parcels and tenants subject to Industrial Stormwater General Permit requirements,
- Evaluation of Industrial Stormwater General Permit Revision 2013 implications to the Port parcels and tenants
- Development of Industrial Stormwater General Permit compliance SWPPP for Applicable Port parcels

WQ 2 - Spill Prevention, Control and Countermeasure Plan

The purpose of a SPCCP is to describe measures to prevent oil discharges from occurring and help facilities respond in a safe, effective, and timely manner when spills do occur to mitigate the impacts of a discharge. An SPCCP is required for most facilities that have aboveground oil storage. SPCCPs are to be prepared and implemented in accordance with the SPCC requirements contained in 40 CFR Part 112. Responsibility for preparing and maintaining an SPCCP lies with the Port's tenants/customers. However, the Port will use its influence as the

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property owner to ensure that SPCCP are in place and that each tenant is meeting the requirements of the SPCC regulations.

In addition to fulfilling requirements of 40 CFR Part 112, SPCCPs can be used as a reference for a facility's oil storage information and testing records, as a tool for employees and contractors to communicate practices on preventing and responding to oil spill that could affect navigable water, and as a guide for facility inspections and emergency response. Once implemented, the SPCC will require daily, weekly, and monthly inspections of spill control measures, which will need to be conducted by Port employees. Each time there are changes to the oil storage infrastructure or facility operations that could impact the likelihood of an oil release, the SPCCP will need to be revised within 6 months. Regardless of changes in oil storage infrastructure, the SPCCP should be reviewed at least every 5 years. The Port, or a third party designated by the Port, will perform a semi-annual SPCC inspection of all tenant operations subject to SPCC guidelines. The inspection shall include:

- Review of each facility's SPCCP
- Review of inspection and training logs as required by the SPCCP
- Site walk to review implementation of, and adherence to, the SPCCP
- Assessment of any facility or personnel changes that would require update to the SPCCP

The intention of the semi-annual inspection is to assist the tenant's efforts to stay in compliance with the SPCC regulations, identifying any activities, behaviors, or housekeeping conditions which could be modified to further, reduce risk and improve water quality.

Deliverable:

- Annual Tenant and SPCCP Inventory Technical Report

WQ 3 - Offsite Stormwater

The SWPPP discussed above will address stormwater runoff that originates within the Port; however, stormwater originating offsite may also impact the water quality within the Port. The Port does not have direct control of offsite stormwater. Therefore, the Port will need to work with other stakeholders (the City of Port Hueneme, Navy, etc.). In the short term, the Port will identify sampling points to determine the characteristics and quality of the offsite stormwater. This sampling is not required under the SWPPP and would not be reported along with the annual SWPPP report. Instead, this data will be used to inform the conversation with the Port's neighbors and to better identify the need. Sampling should be performed during dry and wet weather (wet season and dry season). Care will be taken to identify sampling locations that are upstream of the Port to ensure that the data are specific to offsite areas and do not include comingled Port runoff.

Deliverables:

- Offsite monitoring location / station map
- Technical review and summary of findings from offsite municipal, community, tenant (including Navy), and tributary watershed monitoring studies.

WQ 4 - Design and Implementation of an EMIS

A robust EMIS will directly enable the capture, storage, and query of environmental health and safety, asset, financial, and environmental monitoring data for annual reporting and trend analysis. Additionally, there is significant improvement in operational, management, and environmental program tracking and effectiveness assessment with the joining, relating, and integration of separate and disparate data sets. The EMIS will also support collaboration among the Port departments, as well as its contractors and consultants. In the short-term, the EMIS will drive additional value through standardization of data collection, improvement of quality control, and identification of important gaps or missing data necessary for informed decision making. Immediately, the EMIS may provide a repository for tabular data in both electronic format and paper formats, which have been digitized and assigned reliable attributes for future reference. The EMIS will also support predetermined outputs such as data tables, graphics and figures, as well as integrated digital outputs such as facility maps or interactive PDF files.

Deliverables:

- EMIS needs assessment and development plan
- Organized and formatted data for management and reporting

7.2.2 Long-Term Strategies

WQ 5 - Harbor Craft Replacement

Much of the focus for the Port is on the OGVs that bring the majority of the cargo that passes through the Port. However, in addition to these large vessels, many other local vessels use the Port. These include, tug boats, offshore oil production support vessels, and fishing vessels. These vessels have the potential to be significant sources of pollutants in the harbor. Although the Port does not have direct control over these vessels, as the property owner, the Port could help accelerate the cleanup and turnover of these vessels. The most likely avenue for the Port to influence these vessel operators is through grant funding and/or a Port-administered voluntary and incentive program.

It is not anticipated that the Port would allocate its limited operating budget to fund turnover of the non-Port harbor craft. Therefore, the Port will pursue grant opportunities to fund a Port-administered replacement of older, polluting harbor craft.

Deliverables:

- Inventory of port vessels
- Inventory of grant application opportunities and timeline

WQ 6 - OGV Ballast Assessment

OGVs often discharge ballast water during cargo loading and unloading. When uncontrolled, this discharging of ballast water can introduce invasive species into our costal water.

The California State Lands Commission, Marine Facilities Division (Commission) stipulates that ballast water must be treated or cycled out at sea before being discharged in coastal waters. The Commission requires submittal of records documenting that ballast water has been managed correctly (including submittal of a ballast water reporting form, ballast logs, and treatment reporting form as applicable). In addition, each vessel must have a ballast management plan, which the vessels are required to follow.

The Port should:

- Confirm that ships entering the Port should have a vessel specific ballast water management plan.
- Confirm that ballast water reporting forms are being submitted to the Commission for each vessel upon departure from the Port. Confirm that ballast water logs are being completed and maintained onboard the vessel.

Deliverables

- Ballast water management policy updates
- Ballast water outreach strategy

7.3 Key Performance Indicators

Key Performance Indicators provide metrics to measure and report success and provide transparency for stakeholders engaged in the Port's environmental stewardship efforts. The Port is committed to quantifying, monitoring, reporting, and keeping a record of all metrics used to evaluate the success of the strategies outlined herein.

Ultimately the performance of the measures to improve water quality will be assessed through the concentrations of pollutants in the harbor waters and the harbor water's ability to support beneficial uses. While quantifying improvements in water quality will require ongoing monitoring, there are other available indicators of the performance of the water quality improvement measures. Some of these metrics include increasing awareness of environmental issues, updating Port policies and standard operating procedures, better tracking and reporting of activities conducted by operators within the Port.

Storm Water Pollution Prevention Plan

The effectiveness of a SWPPP may be seen in monitoring parameters measured within expected ranges, reductions in the concentrations of contaminants at discharge points, and better housekeeping. However, these reductions will need to be assessed over time, as variations in terminal operations, housekeeping activities, and storm intensity are just a few variables that confound data interpretation in the short term.

The key performance indicators for the SWPPP will include:

- Results of outfall monitoring
- Number of inspection items during routine inspections
- Comprehensiveness of the SWPPP with regard to amount of pollutant types and number of pollutant sources covered

The following parameters are routinely monitored as part of the Port's compliance with the general stormwater permit:

- pH
- Total Suspended Solids
- Specific Conductance
- Oil and Grease

These parameters are monitored at all industrial facilities with sampling requirements under the General Permit. An up-to-date SWPPP may indicate other pollutants likely present in the stormwater, which will also require monitoring.

Spill Prevention, Control and Countermeasure Plan

The effectiveness of a SPCCP can be measured by a reduction in the number of spills and more frequent control eliminating discharge into Port waters of the spills that do occur.

The key performance indicators for the SPCCP will include:

- Number and magnitude of reported spills (spill magnitudes should be grouped, less than 5 gallons, 55 gallons and less, greater than 55 gallons)
- Number of inspection items during routine inspections

Offsite Stormwater

Progress toward this initiative will be measured by the collection of data and the engagement of stakeholders and other municipal stormwater permits. In the first 18 months, the Port shall

- Conduct monitoring and collect/analyze water samples from at least six sampling events (three dry weather and three wet weather)

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- Conduct flow monitoring of tributary storm water inputs during dry weather and wet weather
- Contact adjacent stakeholders (City, Navy, etc.) to identify counterparts at each agency that can participate in future planning, implementation, and funding efforts

7.4 Budget

The following matrix gives a range of budgetary estimates to conduct the short- and long-term strategies established under Section 7.2. The Port will amend this Section as more information and definition to these tactics and strategies becomes available.

Strategy	Budgetary Cost Range	Basis of Estimate/Comments
WQ-1 – Storm Water Pollution Prevention Plans and Industrial Storm Water Reporting	\$25,000-\$50,000	Assumes up to three facilities requiring filing of an NOI and development of a SWPPP compliant with the 2013 revisions to the Storm Water Industrial General Permit.
WQ-2 – Spill Prevention, Control and Countermeasure Plans	\$15,000 - \$25,000	Assumes minor updates to existing SPCCP and beginning steps to integrate with EMIS.
WQ-3 – Offsite Storm Water	\$15,000 - \$35,000	Assumes coordination with watershed and community partners and reviewing watershed and community activities to identify implications of watershed runoff and discharge into the Harbor.
WQ-4 – Design and Implement an EMIS	\$85,000-\$140,000	Assumes identification of user needs and EMIS framework and Phase I development and improvements.
Short-Term Strategies Subtotal	\$140,000 - \$250,000	
WQ-5 -Harbor Craft Replacement	\$45,000-\$60,000	Assumes development of vessel replacement strategy, guidance, and development of grants for funding program administration and conversion of vessels.

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Strategy	Budgetary Cost Range	Basis of Estimate/Comments
WQ-6- Oceangoing Vessel Ballast Assessment	\$10,000 - \$25,000	Establishing and maintaining contact with state and federal agencies regarding ballast water management reporting, tracking, and updates to policy. Updating the Port’s ballast water policy as needed.
Long-Term Strategies Subtotal	\$55,000 - \$85,000	
Total	\$195,000 - \$335,000	Does not include the cost to implement future strategies derived from the activities described thus far in this Policy.

7.5 Conclusion

The Port’s goal is to improve water quality by addressing both onsite and offsite sources and by implementing policies and procedures that ensure the long-term protection of human health and the environment in the most sustainable manner possible. The short- and long-term implementation strategies identified in this plan are intended to help the Port achieve and maintain regulatory compliance, as well as look to support customers and tenants water quality improvement goals. This includes management, protection, and improvement of urban and stormwater runoff into the harbor and surface water quality important to sustaining beneficial uses. Working with industry partners and the local community will ensure harbor waters meet and exceed regulatory standards for water quality. The strategies identified in this plan are supported by a series of key performance indicators intended to measure progress toward the Port’s water quality goals.

SECTION 8 ENERGY MANAGEMENT

This energy management strategic implementation plan seeks to identify measures, both short- and long-term, which the Port can implement to improve energy efficiency and management in port operations.

8.1 Energy Management and the Port Setting

The Port has created an energy management strategic implementation plan to establish a model for sound energy policy in a seaport setting. The energy management implementation plan is intended to guide business decisions on energy efficiency projects, energy purchase, energy infrastructure, and future procurements, while promoting energy stewardship to its stakeholders. The Port intends to utilize this framework to develop more specific plans with partners, including utilities, vendors, and tenants. The Port is proud to be at the vanguard of setting an energy policy for Ports in the United States.

Based on the current and future planned operations at the Port, major opportunities for energy improvements are as follow:

- Modernizing infrastructure;
- Improving employee/tenant awareness for energy conservation and efficiency;
- Improving inefficient and dated energy intensive systems;
- Improving mobile and stationary equipment energy consumption;
- Providing alternative energy generation/purchase to its tenants; and
- Establishing programs, leveraging incentives, and technology advancement to drive improvements at the Port.

8.1.1 Regulatory Framework

California Assembly Bill 32 (AB 32)

In alignment with the Global Warming Solution Act of 2006 (revised in 2008) Scoping Plan, Part II, section A and B, adopted by the State of California, the Port is committed to improve energy efficiency of its operations and serve as an example to the community it serves. As such, the Port is currently in compliance with all mandated programs in-relationship to AB 32 and is looking to continue its commitment by establishing an Energy Policy that addresses non-regulated energy efficiency improvements, among other issues.

California Assembly Bill 1103 (AB 1103)

The Port has developed this plan, in part, to comply with AB 1103. Regulations implementing AB 1103 were adopted by the California Energy Commission on December 12, 2012. The regulations require the owner of a nonresidential building within California, in advance of the sale, lease, or and financing of the building, to benchmark the building's energy use using the

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EPA Portfolio Manager system and to disclose statements of the building's energy usage to potential buyers, lessees, and lenders.

According to CCR, Title 20, Sections 1680 - 1685, AB 1103 is set to take effect according to the following schedule:

- July 1, 2013 - For a building with total floor area measuring more than 50,000 square feet;
- January 1, 2014 - For a building with a total floor area measuring more than 10,000 square feet and up to 50,000 square feet; and
- July 1, 2014, for a building with a total floor area measuring at least 5,000 square feet and up to 10,000 square feet.

California Assembly Bill 628 (AB 628)

This assembly bill, proposed in March/April 2013 would allow public and investor-owned natural gas and electric utilities to provide help to ports with regards to energy utilization associated with energy use both for stationary uses and for transportation and goods movement.

This bill would authorize a port or harbor district to develop and implement energy management plans jointly with serving electric or gas utilities. AB 628 requires that the energy management plan propose methods to fund identified activities. To facilitate implementation of energy management plans, AB 628 authorizes funding from several potential sources including:

- Utility ratepayer-funded programs;
- The California Infrastructure Bank; and
- The California Alternative Energy and Advanced Transportation Financing Authority.

This bill is in alignment with the intent of this overarching energy management strategic implementation plan as stated in Section 2.3, Item H. The Port will utilize this Plan to identify opportunities and leverage resources, monies, and expertise as stipulated under this proposed bill.

8.2 Implementation Strategies for Energy Management

The following is a set of short-term and long-term strategies aimed at reaching the objectives of this policy. These strategies will be prioritized and modified as the energy policy is implemented, thus, it is a living document and not inclusive by nature. If technologies or opportunities not identified in this section arise, the Port will evaluate whether to incorporate them either to the short- or long-term strategy list. KPIs will be developed to monitor and evaluate the success of each project, tactic, or program.

Three following three screening criteria were used to prioritize the programs listed in each of the focus areas.

- 1) Requirement defined by current regulatory compliance;
- 2) Low-cost, high-value strategies; and
- 3) Provides sustainable and improved Port operations.

8.2.1 Short-Term Strategies

EM 1 - Key Performance Indicator Definition and Improvement Goals

Due to the complexity of the Port's operations and the state of infancy of this program, establishing metrics for this policy will require a well thought out process to set up the right basis of measurement for this policy's success. In order to establish these metrics, the Port will conduct a set of workshop sessions to evaluate the proper key performance indicators to be monitored throughout. More importantly, the Port will establish relevant, trade-specific, normalizers for the KPIs to obtain meaningful metrics that can be used to gauge policy implementation success. In addition, to establishing metrics, the Port will use these workshops to set achievable improvement goals for those metrics.

Deliverable

- List of KPIs to evaluate energy management strategies

EM 2 - Inventory of Port-owned Assets

The Port wants to inventory all major energy consumption sources at the Port. The inventory will include, at a minimum, facilities, fleets, goods movement equipment, and large stationary equipment. The inventory shall include, at a minimum, the following basic information about each asset:

- Location;
- Type of Asset;
- Fuel type(s);
- Energy consumption;
- Size/capacity;
- Asset utilization/purpose;
- KPI or normalizer related information related to what was established as a part of EM-1;
- Ownership type; and
- Other information relevant to Strategies EM-3 through EM-7.

Deliverable

- An inventory that includes, at a minimum, facilities, fleets, goods movement equipment, and large stationary equipment.

EM 3 - Asset Benchmarking

Based on the inventory produced in EM-1, the Port will benchmark the inventoried assets. Facilities will be benchmarked using ENERGYSTAR[®] Portfolio Manager, as applicable. Equipment and fleets will be benchmarked based on normalized metrics compared to industry averages or standards, were available.

Deliverable

- A prioritized list of assets shall be created including those assets that would benefit from a more detailed energy audit/assessment.

EM 4 - Energy Audits

Preliminary energy audits will be performed for those priority assets identified by the output of EM-3. The Port anticipates conducting between 5 and 8 audits. The contractor shall review the Asset Benchmarking prioritization and results, and suggest assets to audit to the Port. Agreed-upon assets will be audited using standard industry energy audit methodologies.

In addition, the Port will engage its local electricity and natural gas utility providers, where appropriate, to take advantage of their free or reduced price energy assessments to augment the services of their consulting partners.

Deliverable

- An audit report will be submitted to the Port summarizing the audit findings for each asset. Reports shall have recommendations resulting from the audits that address energy efficiency improvements.

EM 5 - Improvement Prioritization and Planning

A list of recommendations derived from EM-4 will be evaluated for feasibility during this task. A cost-benefit analysis will be conducted for each recommendation. The consulting firm selected will have to produce a budgetary-level estimate (+/- 20 percent) on the cost and benefit of each recommendation. The analysis shall consider tax benefits, grants available through state or federal programs, incentives, alternative funding opportunities, etc.

Deliverable

- A cost-benefit analysis for each recommendation.

EM 6 - Energy Stewardship Communications and Outreach Plan

The Port would like to communicate the successes, stakeholder involvement opportunities, and lessons learned from this project to its stakeholders. Therefore, the Port will create a robust communications and outreach plan to ensure stakeholders are aware of the implementation of these strategies.

Deliverable

- Communications plan

EM 7 - Strategy Reprioritization

After completing Strategy EM-5, the Port will reprioritize and evaluate new strategies to be included in the short-term strategies. At this point, the Port will have a new list of possible projects to implement arising from the result of EM-5, which will be crucial in reaching the goals set up in this Policy.

Deliverable

- Prioritized list of projects
- Strategy Reprioritization

After completing Strategy EM-5, the Port will reprioritize and evaluate new strategies to be included in the short-term strategies. At this point, the Port will have a new list of possible project to implement arising from the result of EM-5, which will be crucial in reaching the goals set up in this Policy.

Deliverable

- Prioritized list of projects

8.2.2 Long-Term Strategies

After the completion of EM-7, a series of long-term strategies will be confirmed. The Port has identified the following long-term programs to strengthen the effectiveness of the energy management implementation plan and to establish the foundation for long-term programming:

EM-8 - Technology Advancement Program (TAP)

EM-9 - Energy Efficiency Incentive Program for Tenants

EM- 10 - Energy Improvement Support Program for Stakeholders

EM- 11- Alternative Fuel/Energy Retrofit Incentive Program

EM-12 - Energy Procurement Policy

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Energy Management

8.3 Key Performance Indicators

The Port is committed to quantify, monitor, report, and keep a record of all metrics defined as part of this energy management strategic implementation plan. The KPIs provide metrics to measure and report success and provide transparency for stakeholders engaged in the Port's environmental stewardship efforts. The performance of the strategies implemented at the Port will be assessed by analyzing a set of metrics over time at the Port. Due to the complexity of the Port's operations and breadth of tactics identified, establishing metrics for this policy will require a well thought out process. In order to establish these metrics, the Port will conduct a set of workshop sessions to evaluate the proper key performance indicator to evaluate the success of the strategies and tactics identified in Section 8.2.

8.4 Budget

The following matrix gives a range of budgetary estimates to conduct the short and long-term strategies established under Section 8.2. The Port will amend this Section as more information and definition to these tactics and strategies becomes available.

Strategy	Budgetary Cost Range	Basis of Estimate/Comments
EM-1 – KPI Definition and Improvement Goals	\$8,000 - \$12,000	1 to 2 days of workshops and deliverable with KPI, normalizer, and improvement goals.
EM-2 – Inventory of Port-owned Assets	\$15,000 - \$25,000	Includes collection of information, interviews, site visit, deliverable, and an optional creating a simple database of assets and attributes for future project evaluation use.
EM-3 – Asset Benchmarking	\$10,000 - \$16,000	Assumes that STS-1 and STS-2 are completed and that the benchmarking information is readily available. Includes tracking real estate under EPA Portfolio Manager. Assume 150-250 assets, grouped in no more than 10 different categories.

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Strategy	Budgetary Cost Range	Basis of Estimate/Comments
EM-4 – Energy Audits	\$40,000 - \$75,000	5 to 8 Level II energy audits. Cost is depending on type of audit and asset evaluated. There is an opportunity to audit a group of assets to increase cost-efficiency. Assumes utility assessments are free of charge.
EM-5 – Improvement Prioritization and Planning	\$3,000 - \$5,000	4 to 8 hours of meetings/support and revised Policy deliverable.
EM-6 – Energy Stewardship Communication and Outreach Plan	\$10,000 - \$25,000	Includes strategy meetings and creation of the Plan. This Plan can vary significantly in complexity and scope depending on the stakeholders, marketing materials created in conjunction with the plan, translations, etc.
EM-7 – Strategy Reprioritization	\$3,000 - \$5,000	4 to 8 hours of meetings/support and revised Policy deliverable.
Short-Term Strategies Subtotal	\$89,000 - \$163,000	None.
EM-8 – Technology Advancement Program (TAP)	\$25,000 - \$35,000	Establishing and managing the Program for the first year. The cost varies widely depending on scope and complexity of the plan. Does not include TAP initiative funding (to be established by the Port)
EM-9 – Energy Efficiency Incentive Program for Tenants	\$18,000 - \$25,000	Establishing and managing the Program for the first year. The cost varies widely depending on scope and complexity of the plan. Does not include incentive funding (to be established by the Port)

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Strategy	Budgetary Cost Range	Basis of Estimate/Comments
EM-10 – Energy Improvement Support Program for Stakeholders	\$15,000 - \$20,000	Establishing and managing the Program for the first year. The cost varies widely depending on scope and complexity of the plan.
EM-11 – Alternative Fuel/Energy Retrofit Incentive Program	\$18,000 - \$25,000	Establishing and managing the Program for the first year. The cost varies widely depending on scope and complexity of the plan. Does not include retrofit incentive funding (to be established by the Port)
EM-12 – Energy Procurement Policy	\$3,000 - \$5,000	Establishing and managing the Program for the first year. 4 to 8 hours of meetings/support and revised Policy deliverable.
Long-Term Strategies Subtotal	\$79,000 - \$110,000	None.
Total	\$168,000 - \$273,000	Does not include the cost to implement future strategies derived from the activities described thus far in this Policy.

8.5 Conclusion

The Port’s goal is to improve energy efficiency by implementing policies and procedures for energy management that will ensure the long-term protection of human health and the environment in the most sustainable manner possible. The energy management strategic implementation plan identifies both short- and long-term strategies and is supported by a series of KPI’s intended to evaluate progress. The tactical implementation of these strategies will not only ensure regulatory compliance, but also promote environmental stewardship, which would move the Port beyond compliance to a proactive energy management leader.

SECTION 9 CLIMATE CHANGE ADAPTATION

This climate change adaptation strategic implementation plan seeks to identify measures, both short- and long-term, which the Port can implement to improve its understanding, planning, administration, partnerships, and technical approach to anticipated effects of climate change.

9.1 Climate Change Adaptation and the Port Setting

The Port's mission statement affirms that 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 protect, enhance, and maintain the environmental resources within the harbor while promoting Port operations and supporting uses with its neighbor, the United States Navy. The Port conducts maritime terminal operations in accordance with generally accepted sustainable practices consistent with the public trust and applicable regulations.

Climate Adaptation planning is being driven by scientific study and evolving federal guidance that identifies varying effects, including

- Rising sea level
- Changes in weather patterns and regional climate and

These two factors have the potential to impact the operations, environmental resources, and service life of infrastructure. While the effects of climate change are perceived to be slow, small, and incremental, their additive effects may be frequent, intense, and unavoidable on a longer timeframe. Federal agencies including the EPA and US Geological Survey (USGS) published regional studies that identified low, medium, high, and very high risk areas. Additionally, the State of California has several organizations publishing regional and local guidance to address climate change and associated sea level rise. Both federal and state agencies publications provide various scenarios for sea level rise and both identify port and harbor areas as economically important and at higher risk for impacts from climate change and rising sea level. In recent years, many local ports, municipalities, and utility districts have initiated climate change and rising sea level impact studies to identify specific operations, infrastructure, and resources that may be impacted. The reports also identify and provide recommendations to plan for more extreme weather and climate conditions that could potentially impact infrastructure. The expected range and intensity of sea level rise, along with coastal geomorphology and wave energy, are used for modeling and predicting potential impacts.

Therefore, this Climate Change Adaptation Plan focuses on:

- Tracking new and emerging studies that may provide better regional and local resolution of predicted potential impacts, and

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- Identifying strategies that can be implemented by the Port to reduce operational and environmental impacts.

This plan recognizes that operations and service providers at the Port may produce GHG known to contribute to climate change, most notably CO₂; however, further discussion of the Port's strategies to partner and reduce emission of GHG to the atmosphere is discussed in the Air Quality Strategic Implementation Plan. This Climate Change Adaptation Plan focuses on reducing climate change induced effects and impacts on the operations and environmental resources of the Port.

It is essential to understand the variety of factors and operations at the Port to determine and prioritize appropriate strategies pertaining to Climate Change Adaptation. These factors are presented in Section 9.1.2 below. Subsequently, strategies for addressing these factors in the context of the port setting and key performance indicators are identified (Sections 9.2 and 9.3 respectively). The scope of this Climate Change Adaptation Plan is directed at Port property while acknowledging potential peripheral influences such as tributary watershed discharges, community land use planning, and US Navy operations.

9.1.1 State of Climate Change Adaptation Planning

Climate change is occurring at a pace that is within the scale of the lifespan of a typical infrastructure project such as Port infrastructure (i.e. 50 years). Of particular concern to the Port are the ramifications of sea level rise resulting from climate change. Sea level rise is forecast to be between 20 and 72 inches over the next 50 years. Though the specifics cannot be forecast precisely, what is known is that current infrastructure was most likely not designed to account for this change. Though the debate over magnitude continues, governmental and non-governmental organizations have begun developing and implementing guidance for climate change adaptation.

Federal

The EPA has published guidance by region on the potential and anticipated impacts to both inland and coastal resources from climate change and rising sea level. These comprehensive studies include identification of impact to the following from climate change and rising sea level: water resources, forestry, agriculture, and energy to name a few.

State of California and Pacific Coastline

The Pacific Council on International Policy (PCIP), led by an advisory panel, established principles for gathering information and decision making. The PCIP ultimately published its efforts in November 2010 in a document entitled, *Preparing for the Effects of Climate Change: A Strategy for California*. The study establishes standards for a strong science-based pool of information, cost considerations, and community / public agency / private business collaboration.

Local Municipalities

As an example of local initiative, the City of Chula Vista has both coastline and harbor resources and has developed strategies consistent with the federal guidance and state principles for open space and wetlands, wildfire management, local water supplies, and building code changes.

9.1.2 Factors Analysis: Sea Level, Weather Patterns, Groundwater and Key Issues: Operations, Environment, Community

The harbor is subject to water inputs that vary from day-to-day. The harbor balances these inputs provided by groundwater intrusion, discharges from surface waters (open channels, underground storm drains, and surface sheet flow), direct precipitation, and tidal exchange. While nearly unnoticeable under most circumstances, there are concurrent and extreme events that present unique conditions possibly affecting Port infrastructure, its environmental resources, and the community. These events include, concurrent extremely high tide, storm surge, and discharge from stormwater runoff. Such an event may create localized flooding, crashing waves that overtop breakwaters, and infiltrate water into infrastructure such as storm drains and vaults. While short lived, the impacts can be extensive and significant. Climate change adds a significant factor that will have direct and indirect effects on Port operations, the environment, and the community.

Climate change may alter the following factors and variability on Port operations, the environment, and community compounded by frequency, intensity and duration variables:

- **Rising Sea Level and Surge** – May affect water depth and flood infrastructure / utilities, erosion, weathering and sedimentation.
- **Extreme Temperature** – May affect service life of building and terminal paving materials, vehicle tire wear, heating/cooling requirements for occupational facilities and vehicles
- **Extreme Precipitation** – May affect localized harbor water quality, sedimentation and environmental habitats
- **Change in Groundwater Level** – May affect existing areas of contamination, building structural integrity, underground infrastructure, water resources availability, and stormwater infiltration.
- **Change in Water Quality** – May affect corrosion of infrastructure, beneficial uses of groundwater, conductivity.

Provided below is an Impact Matrix describing factors and Port assets affected by direct, indirect, and potential climate change impacts. Further local analysis would need to be conducted to better qualify the designations provided under this initial plan.

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Impact Matrix					
	Rising Sea Level and Surge	Extreme Temperature	Extreme Precipitation	Change in Groundwater Level	Change in Groundwater Quality
Operations Water Depth	Direct	Potential	Potential	Potential	Potential
Operations Berth and Terminal Infrastructure	Direct	Indirect	Indirect	Potential	Potential
Operations Supporting Infrastructure	Direct	Potential	Potential	Direct	Indirect
Environment Sediment Resources	Indirect	Potential	Indirect	Indirect	Indirect
Environment Water Resources	Direct	Indirect	Direct	Indirect	Indirect
Environment Beaches and Replenishment	Direct	Indirect	Indirect	Potential	Potential
Environment Landside Existing Contamination	Indirect	Potential	Indirect	Direct	Indirect
Environment Port Marine Habitat	Indirect	Indirect	Indirect	Indirect	Indirect

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Impact Matrix					
	Rising Sea Level and Surge	Extreme Temperature	Extreme Precipitation	Change in Groundwater Level	Change in Groundwater Quality
Community Harbor Vicinity	Indirect	Indirect	Indirect	Indirect	Potential
Community Agriculture	Indirect	Direct	Direct	Indirect	Indirect

The impact matrix should be incorporated into the prioritization process of managing operational, environmental, and community elements. As can be seen above, based on initial designations, which are subject to validation and revision, the anticipated impacts of climate change affect the entire spectrum of Port infrastructure, environmental resources, and the community.

9.1.3 Federal Climate Change and Sea Level Rise Guidance

The US Government is currently developing draft guidance on the appropriate target and ranges of sea level rise to utilize to determine potential impacts in various time-planning increments through 2100. Current guidance suggests planning for sea level rise in the range of 7 inches to 23 inches by 2100 with many model simulations using 20 inches. The guidance recognizes the work of independent scientific and technical groups working to identify the anticipated effects of climate change, including global sea level rise.

9.2 Strategies to Address Climate Change

The strategies identified herein were selected based on federal risk indices and state regional models. Additionally, the initial factors analysis was used to develop short-term (1 to 3 years) and long-term (3+ years) strategies that improve the Port’s resiliency to climate change factors while ensuring continuity of Port operations, protection of environmental resources, and continued service to the community.

9.2.1 Short-Term Strategies

Short-term activities are those activities that should be implemented within 1 to 3 years and are intended to establish foundations for long-term climate change strategy implementation. These activities are relatively simple initiatives that leverage existing effort at the Port. Completing these activities will improve the longer-term understanding of potential impacts of

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rising sea level, extreme temperatures and extreme precipitation, as well as changes in groundwater level and quality. Deliverables under each strategy will support the ongoing documentation of scientific foundations referenced, consideration of cost implications, and intentional coordinated and collaborative public decision making.

CC 1 - Track Existing and Emerging Scientific Study and Federal and State Guidance on Climate Change Adaptation

This strategy will track the updates to federal guidance on estimated sea level rise and federal strategies for guiding and assisting ports with climate change adaptation. Tracking these updates and strategies adaptation will ensure that the Port is making the best use of publicly available research to adapt appropriately. It is anticipated that federal guidance will move from a draft format to a final policy within the next few years.

Deliverable

- The Port will be required to adopt and implement policies consistent with the federal guidance due to the harbor’s designation as a “waters of the United States.”

CC 2 - Acknowledge and Integrate Climate Change Adaptation into Existing Port Policy

This strategy will insert general language into long-term vision plan, departmental operating procedures, planning and permitting, contract documents, annual budgets, and staff development and training. By inserting general language into the documents and plans, the Port will make climate change adaptation part of its culture. This effort will create an organizational recognition of the need for climate change adaptation planning, provide the administrative framework for supporting it, and develop departmental operations that incorporate necessary planning and construction/building principles. This effort to align policy with expected climate change and rising sea level impacts may also provide consistency expected from federal and state agencies responsible for allocating appropriations and grant funding.

Deliverable

- For Calendar year 2014, insert general language into long-term vision plan, departmental operating procedures, planning and permitting, contract documents, annual budgets, and staff development and training.

CC 3 - Assess Existing Asset Inventory

By conducting the inventory within the context of climate change, this strategy will identify potential deficiencies in existing asset and infrastructure inventories including storm drain pipe, sewer lines, fuel pipelines, tanks, vaults, electrical services, pump systems, buildings, wharves, berths, piles, groins, sediment, and vehicles. Identifying deficiencies will enable the Port to determine the potential for qualitative and quantitative impacts from its current baseline.

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During the regular course of operations, maintenance, land holding management, and capital projects, the Port will identify opportunities to augment its existing inventories of assets and the asset information adding new classes of information if necessary.

Deliverable

- Conduct Asset inventory

CC 4 - Integrate Climate Change Adaptation into an Environmental Management Information System Improvements

Conducting a “preliminary needs evaluation” to identify appropriate and phased application of technology enhancements will enable port staff, its contractors, and the community, including the US Navy, to share, join, and integrate existing and future streams of information. Additionally, there will be a focus on developing an administrative record capturing and associated all potential relevant data and information including local community meeting summaries, outside website links, contractor technical reports and laboratory data, and work by the US Navy.

Deliverable

- Conduct preliminary data evaluation

CC 5 Develop Initial, Integrated, and Compounding Impact Models / Maps

After collecting and integrating the above information, reporting of the information should be conducted using a combination of individual and multiple factor impacts on Port facilities, environmental resources, and the community. In order to effectively deliver this content to a diverse user group, data should be displayed on graphical maps supporting interpretation by the Port’s staff, technical contractors, regulatory agencies, and the community. This strategy will yield deliverables in phases and each phase of deliverables will improve with incremental improvement in asset inventories.

Deliverable

- Develop impact maps/models

9.2.2 Long-Term Strategies and Deliverables

CC 6 - Tracking Existing and Emerging Scientific Study and Federal and State Guidance on Climate Change Adaptation

While this strategy is identified in the Short-Term Strategies and Deliverables, it is anticipated that guidance from federal and state agencies will move from planning guidance to implementation guidance. This strategy will track updates to federal and state guidance on

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estimated sea level rise and federal strategies for guiding and assisting the Ports with implementation of climate change adaptation. It will be important to identify national, state, and local efforts that are recognized as credible for planning and implementation. It is anticipated that federal programs may provide funding for the more complex planning and implementation of strategies to adapt the Port to climate change.

Deliverable

- Create and manage an issue tracking log specific to climate change

CC 7 - Incorporating Cost and Funding Implications of Climate Change Adaptation into Existing Port Policy.

This strategy will begin to identify climate change adaptation costs by inserting general language into the Port's annual budgets and long-term vision plans acknowledging the need to consider the estimated staff, consultant, and infrastructure resources, as well as the operation and logistical implications of implementing planning strategies identified.

Deliverables

- Include climate change adaptation costs in annual budgets and long-term vision plans

CC 8 - Augment Environmental Management Information Systems Capabilities

This strategy will begin to implement improvements to EMIS, including:

- Improving the data and information capture, storage, and reporting functions
- Joining, relating, and cross-walking data and information for integrated assessment capabilities and
- Supporting the reporting of annual implementation and tracking metrics.

Deliverables

- Organized, useful and integrated data

CC 9 - Improving the Resolution of Port Impact Models/Maps

This strategy will improve the resolution of initial impact models on Port facilities, environmental resources, and the community. The improved resolution will be effected through improvements in EMIS capabilities and provide for more informed decision making, better planning, and effective implementation strategies.

9.3 Key Performance Indicators

Key Performance Indicators provide metrics to measure and report success and provide transparency for stakeholders engaged in the Port's environmental stewardship efforts. The

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Port is committed to quantifying, monitoring, reporting, and keeping a record of all metrics used to evaluate the success of the strategies outlined herein.

The performance measures have been developed based upon the short- and long-term strategies identified and may be amended as new and more accurate data and information becomes available. KPIs pertaining to climate change adaptation include:

- An anticipated sea level rise with a confidence interval that may be used for planning
- Identification and updating of appropriate port policies and operating procedures
- Improvement and evaluation of existing asset inventories
- Improvement of EMISs
- Development of a Climate Change Adaptation Technical Guidance Document with climate change impact maps

	Current 2013	2014 Update	2017 Update	2025 Update
Key Performance Indicator	Short Term		Long Term	
1. Sea Level Interval			Track Changes	
2. Port Policy	Evaluate Plan and Sections	Include CCA strategy	Integrate CCA into all Sections	Update CCA in all Sections
3. Asset Inventory	Develop Inventory	Identify Deficiencies		
4. Integrate Implementation Plans				
5. EMIS	Evaluate Port Technology Plan	Provide Recommendations	Phase I Improvements	Complete Technology Improvements
6. Impact Maps	Phase I – Sea Level Rise Priority Direct Physical Impacts	Phase II – Priority Sea Level Rise Indirect Impacts	Phase III – Qualify Potential Impacts and Review Direct and Indirect Impact Designations	

9.4 Budget

The Port plans to leverage the efforts and activities implemented under the Air Quality, Water Quality, Marine Resource, Soil and Sediment, Energy Management Strategic Implementation Plans to support development of a more complete asset inventory and environmental management information system capable of capturing, storing, reporting, and integrating the data and information. Additionally, climate change adaptation will be incorporated, as appropriate, into many of the future grant applications and capital improvement budgets as required by Port policies and standard operating procedures. It is estimated that the planning, data, and information management necessary to support capital improvements to protect and enable operations under anticipated climate change conditions would require approximately \$2-5M in Port staff and technical support effort over the next 10 years. The implementation effort is significantly more to accommodate the effects of climate change and anticipated to be

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in the \$20-30M range in the next 10 years while in the \$10B+ to continue and enhance operations while protecting infrastructure according to draft federal guidance sea level rise estimates through 2100.

The following matrix gives a range of budgetary estimates to conduct the short- and long-term strategies established under Section 9.2. The Port will amend this Section as more information and definition to these tactics and strategies becomes available.

Strategy	Budgetary Cost Range	Basis of Estimate/Comments
CC-1 – Track Federal and State Guidance on Climate Change Mitigation	\$5,000 - \$15,000	Attendance at workshops of regional significance, conference calls / webinar participation
CC-2 – Integrate Climate Change Mitigation into Existing Port Policy	\$10,000 - \$25,000	Includes review of existing Port Policies, engagement of Port Departments, and drafting language. Public review, comment, and revision.
CC-3 – Assess Existing Asset Inventories	\$35,000 - \$60,000	Review and inventory existing asset, EHS, and electronic data inventories.
CC-4 – Integrate Climate Change Adaptation into an Environmental Management Information System Improvements	\$25,000 - \$30,000	Integrate findings from CC-3 and develop a user needs analysis, strategic plan, preliminary design details, and deployment options.
CC-5 – Develop Initial, Integrated, and Compounding Impact Models / Maps	\$25,000-\$45,000	Assumes integration of assess inventories, improved function of EMIS, and applies regionally significant guidance on climate change mitigation.
Short Term Strategies Subtotal	\$100,000 - \$175,000	
CC-6- Track Federal and State Guidance on Climate Change Mitigation	\$10,000 - \$25,000	Attendance at workshops of regional significance, conference calls / webinar participation. Identifying implications to existing planning.
CC-7 - Incorporating Cost and Funding Implications of Climate Change Mitigation	\$15,000 - \$25,000	Identifying key sections of Port Policy /Strategic Plan and implications throughout planning,

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Strategy	Budgetary Cost Range	Basis of Estimate/Comments
into Existing Port Policy.		operations, and fiscal analysis sections.
CC-8- Augment Environmental Management Information Systems	\$85,000 - \$125,000	Improving the functionality and integration with website functions to capture, store, and report information necessary to enhance operations, resources management, and climate change mitigation planning and implementation.
CC-9- Improving Resolution of Port Impact Models and Maps	\$20,000 - \$35,000	Updating models and maps through the augmentation of asset information, impact factors, and improved regional model resolution.
Long Term Strategies Subtotal	\$130,000 - \$210,000	
Total	\$230,000 - \$385,000	Does not include the cost to implement future strategies derived from the activities described thus far in this Policy.

9.5 Conclusion

The Port’s goal to develop a policy on climate change adaptation according to existing scientific study and draft federal guidance is being accomplished by evaluating the factors of climate change (rising sea level, extreme weather, and changing groundwater quality and level) along with potential effects to Port operations, environmental resources, and the community. The impact matrix is a tool that can be used to prioritize strategies. These strategies will ensure that the Port continues to operate and maximize its social and economic value to the community. The strategies are pooled into short- and long-term approaches that identify activities in the 1 to 3-year and 3+-year range, respectively. Generally, these strategies include tracking federal climate change guidance and policy, improving asset inventories and information management systems, integrating findings from operational and resource management plans, and developing simple and integrated impact and risk models that present findings in easily usable maps and figures. Climate change adaptation should be considered during all planning, budgeting, and capital improvement programs existing and proposed in the future.

SECTION 10 RECOMMENDED NEXT STEPS

The following is a set of recommended next steps following the completion of the strategic implementation plans.

Prioritize Focus Areas and Strategies

The planning and development of an environmental management framework is a long-term process requiring regular review and modification. Prioritizing Environmental Management Framework focus areas and subsequent implementation strategies will help guide limited Port resources and funding in a way that is consistent with broader management goals. Prioritization of the focus areas and strategies also affirms commitment to methodically building the Port's environmental management framework and will also help with the pursuit of additional funding.

Three screening criteria have been identified to help prioritize the strategies listed in each of the strategic implementation plans. The three screening criteria include:

- 1) Requirement defined by current regulatory compliance
- 2) Enhancement of Port operations and logistics
- 3) Effective pollution prevention and sustainable Port operations

The screening criteria are intended to focus resources on those programs that are not only required but provide the most value to the Port.

Lastly, assigning a Program Manager will help to optimize accountability and effectiveness.

Pursue Grant Funding for Tactical Implementation of Strategies

As previously noted, the planning and development of an environmental management framework is a long-term effort requiring a commitment of resources and funding. Actively pursuing grant funding consistent with the Port's prioritized focused areas will help the Port achieve its environmental goals while minimizing fiscal impacts of environmental programs. Grant funding is a key component to achieving more sustainable Port operations.

Consider Implementation of Environmental Management Information System

Actively managing the Port's regulatory requirements and environmental data requires dedicated resources. The implementation of an EMIS would help the Port automate this process and serve as the repository for all related information and/or data. Given the Port's limited resources, an EMIS would help with knowledge transfer and the archiving of important regulatory information.

TABLES

Strategy Cost Summary Table

		Budgetary Estimate	
I.P. ID	Strategy	Min	Max
AQ-1	Update Emissions Inventory	\$24,000	\$34,000
AQ-2	Maintain Drayage Truck Compliance	\$5,000	\$7,000
AQ-3	Maintain Shore Power Project Compliance and Reporting	\$10,000	\$20,000
AQ-4	Develop Terminal Equipment Upgrade Program	\$20,000	\$25,000
AQ-5 -	Design and Implement an Environmental Management Information System		
AQ-6 -	Pursue Grant Funding	\$30,000	\$42,000
AQ-7	Green Lease Program	\$15,000	\$20,000
AQ-8	Technology Advancement Program	\$50,000	\$75,000
	AQ Subtotal	\$154,000	\$223,000
MR-1	Wildlife Assessment	\$50,000	\$75,000
MR-2	Invasive Species Seminar	\$20,000	\$30,000
MR-3	Track and Monitor Marine Resources		
MR-4	Wetlands Conservation	\$10,000	\$15,000
	MR Subtotal	\$80,000	\$120,000
SS-1	Define existing soil and sediment conditions at the Port/ Prepare a Baseline Soil and Sediment Conditions Report	\$50,000	\$200,000
SS-2	Development of Soil and Sediment Management Guide	\$20,000	\$40,000
SS-3	Conduct annual review of regulatory changes pertinent to soil and sediment management at the Port (Annual Cost)	\$10,000	\$20,000
SS-4	Perform annual review and update of SSMG (Annual Cost)	\$5,000	\$15,000
SS-5	Design and Implement EMIS		
	SS Subtotal	\$85,000	\$275,000
WQ-1	Storm Water Pollution Prevention Plans and Industrial Storm Water Reporting	\$25,000	\$50,000
WQ-2	Spill Prevention, Control and Countermeasure Plans	\$15,000	\$25,000
WQ-3	Offsite Storm Water	\$15,000	\$35,000
WQ-4	Design and Implement an EMIS	\$85,000	\$140,000
WQ-5	Harbor Craft Replacement	\$45,000	\$60,000
WQ-6	Oceangoing Vessel Ballast Assessment	\$10,000	\$25,000
	WQ Subtotal	\$195,000	\$335,000
EM-1	KPI Definition and Improvement Goals	\$8,000	\$12,000
EM-2	Inventory of Port-owned Assets	\$15,000	\$25,000
EM-3	Asset Benchmarking	\$10,000	\$16,000
EM-4	Energy Audits	\$40,000	\$75,000

Strategy Cost Summary Table

		Budgetary Estimate	
I.P. ID	Strategy	Min	Max
EM-5	Improvement Prioritization and Planning	\$3,000	\$5,000
EM-6	Energy Stewardship Communication and Outreach Plan	\$10,000	\$25,000
EM-7	Strategy Reprioritization	\$3,000	\$5,000
EM-8	Technology Advancement Program (TAP)	\$25,000	\$35,000
EM-9	Energy Efficiency Incentive Program for Tenants	\$18,000	\$25,000
EM-10	Energy Improvement Support Program for Stakeholders	\$15,000	\$20,000
EM-11	Alternative Fuel/Energy Retrofit Incentive Program	\$18,000	\$25,000
EM-12	Energy Procurement Policy	\$3,000	\$5,000
	EM Subtotal	\$168,000	\$273,000
CC-1	Track Federal and State Guidance on Climate Change Mitigation	\$5,000	\$15,000
CC-2	Integrate Climate Change Mitigation into Existing Port Policy	\$10,000	\$25,000
CC-3	Assess Existing Asset Inventories	\$35,000	\$60,000
CC-4	Integrate Climate Change Adaptation into an Environmental Management Information System Improvements	\$25,000	\$30,000
CC-5	Develop Initial, Integrated, and Compounding Impact Models / Maps	\$25,000	\$45,000
CC-6	Track Federal and State Guidance on Climate Change Mitigation	\$10,000	\$25,000
CC-7	Incorporating Cost and Funding Implications of Climate Change Mitigation into Existing Port Policy.	\$15,000	\$25,000
CC-8	Augment Environmental Management Information Systems	\$85,000	\$125,000
CC-9	Improving Resolution of Port Impact Models and Maps	\$20,000	\$35,000
	CC Subtotal	\$230,000	\$385,000

APPENDIX A

Environmental Management Framework

Policy Statement & Guiding Principles

Environmental Policy Statement

The following draft policy statement was developed based on review of the District's overall mission, current plans and future goals. The policy statement is intended to be an overarching guide for future decisions related to sustainability and environmental initiatives at the District.

The Oxnard Harbor District shall fully comply and adhere to the California Environmental Quality Act (CEQA), as well as, applicable local, state and federal regulations related to District 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 as well as applicable local, state and federal regulations, through the implementation of pollution prevention measures and by partnering with vendors and customers that have shared environmental goals.

Guiding Principles

The draft policy statement was built around three guiding principles. The principles are intended to reflect the District's commitment to maximizing commerce, environmental stewardship and community involvement.

Optimize commerce in an environmentally responsible manner. Encourage and foster environmental stewardship and the protection of natural resources.

Engage, educate, and collaborate with the local community, port customers and tenants and Naval Base Ventura County.

Policy Goals

Clearly defined policy goals ensure a policy statement is actionable. The following policy goals align with the guiding principles and seek to reach all areas of port operations and management.

Identify and implement sustainable practices in marine terminal and industrial operations and management Educate and inform the local community, port customers and tenants, and Naval Base Ventura County about port operations and environmental programs.

Program Focus Areas

Program development is where policy takes action. Six program focus areas have been identified based on regulatory requirements and the District's future goals. The program focus areas are as follows:

Clean Air Program
Clean Water Programs
Soil/Sediment Programs
Sustainability Programs
Community Engagement Programs
Marine Resources, Fisheries and Wildlife Programs

APPENDIX B

Environmental Management Framework White Papers



**Environmental
Management Program
*White Papers***

Prepared for:



April 24, 2012



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Executive Summary

Section 1 Community Engagement

Section 2 Air Quality

Section 3 Water Quality

Section 4 Soil and Sediment Focus Area

Section 5 Marine Resources Focus Area

Section 6 Sustainability Focus Area



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

Prepared for:



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March 1, 2012



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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_x) and sulfur oxide (SO_x) 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_x emissions standards for new engines and new fuel quality requirements beginning in 2010. The Tier II NO_x standards apply globally to new or retrofitted marine engines built from 2011 to 2015, while the Tier III standards only apply to NO_x 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_x emissions below the Tier I levels.

Table 1 Tiered Emissions Standard

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

† In NO_x 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_x, and SO_x 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 ¹	Marine gas oil (DMA) at or below 1.5% sulfur; or Marine diesel oil (DMB) at or below 0.5% sulfur
	August 1, 2012 ²	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 ³	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_x 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_x 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_x, 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_x 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 (CO₂).

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, CO₂, carbon monoxide (CO), and nonmethane hydrocarbon (NMHC) emissions
- Rich calibration shows high NMHC and CO emissions, but lower NO_x emissions
- Lean calibration shows slightly higher NO_x 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

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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/ft²) 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 (ft²) of warehouse space and 1.1 million ft² 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/ft²) 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/ft²) 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 (CO₂).

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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