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Chula Vista Bayfront Master Plan

Natural Resources Management Plan

Final
May 2016

CITY OF CHULA VISTA

Unified Port of San Diego

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Appendices

1.0 Introduction

This Natural Resources Management Plan (NRMP) implements a vision for promoting and enhancing natural resources in this bay-estuarine, urban setting for a sustainable future that sets far-reaching goals for living with climate change. It envisions a thriving, healthy ecosystem that fosters the human experience of nature. This NRMP contains goals, objectives, and strategies for achieving a cooperative vision. The NRMP will serve as an important environmental guidance and implementation document, applicable to all development within the Chula Vista Bayfront project area. All projects, both public and private, will be evaluated by the Port and City relative to furthering the goals, objectives, standards, and strategies contained herein.

The 500-plus-acre Chula Vista Bayfront Master Plan (CVBMP) project footprint is recognized as one of the last great development opportunities to create a legacy destination for the public on San Diego Bay. The CVBMP Amendment was unanimously approved by the California Coastal Commission (CCC) on August 9, 2012, after ten years in development.

1.1 The NRMP Vision

Our vision for the Chula Vista Bayfront is to sustain habitats and ecosystems that protect and nourish both native resident and migratory fish and wildlife, especially those that are at risk and dependent on the south bay.

The goals, objectives, and strategies articulated in this plan are intended to transform the way we conserve and restore nature in coastal urban environments with a changing global climate, and to preserve precious natural resources for generations to come.

The Chula Vista Bayfront will offer varied opportunities for human encounters with nature that are engaging, tranquil, support human and ecological health and well-being, and are accessible to all. Once completed, the world-class bayfront will be a destination for global travelers as well as local residents and visitors, reflect strong planning and design principles for sustainability of resources, economic feasibility, and community benefit.

1.2 The NRMP's Origin

The Wildlife Advisory Group (WAG) was formed to advise the San Diego Unified Port District (Port or District) and the City of Chula Vista (City) on 1) the creation and content of this NRMP, and 2) to initiate and support funding requests to the Port and City as well as identify priorities for the use of these funds, and engage in partnering, education, and volunteerism to support the development of the Chula Vista Bayfront in a manner that protects and enhances the fish, wildlife, and habitats of the area and

educates and engages the public. The WAG was formed following a Settlement Agreement in May 2010 between the Port, the City of Chula Vista, and the Bayfront Coalition, which consists of the Environmental Health Coalition, the San Diego Audubon Society, the San Diego Coastkeeper, the Coastal Environmental Rights Foundation, the Southwest Wetlands Interpretative Association, the Surfrider Foundation (San Diego Chapter), and Empower San Diego. Other WAG members include the Living Coast Discovery Center, South County Economic Development Council, Port tenants, Pacifica Companies, Resource Conservation Commission, three residents from the City of Chula Vista, Zoological Society of San Diego, Sportfishing Association of California, San Diego Foundation, U.S. Fish and Wildlife Service (USFWS), National Marine Fisheries Service, Regional Water Quality Control Board (RWQCB), California Department of Fish and Wildlife (CDFW), and the CCC.

The CVBMP Settlement Agreement requires the adoption of environmental protection measures above and beyond those required by federal, state, and local regulations, including for sea level rise and other expected impacts of climate change. This NRMP is developed as a condition of the CVBMP Settlement Agreement to include management objectives and performance standards to guide the promotion of natural resources.

1.3 The Bayfront Environ's Core Natural Resource Values

The bayfront and its adjacent areas provide important and unique natural resources values. These include:

- Resting and foraging habitat for Pacific Flyway migratory shorebirds and waterbirds, many of which are of conservation concern.
- A productive marine life nursery for fishes that come into San Diego Bay for its sheltered, warmer water to begin their growth.
- An unusually biodiverse fish assemblage with species unique to southern California.
- The green sea turtle.
- A productive salt marsh, sheltering rare birds and sustaining the life-cycle needs of other wildlife.
- Transitional coastal uplands, supporting native endemic plants and wildlife and buffering storm surge and sea level rise.
- A haven for seabird nesting and fledging of young.
- The regulating function of carbon sequestration tied to salt marsh and other vegetation, as well as other organic matter in soils and sediment.
- Water quality purification and maintenance functions of wetlands.

Existing habitat connections provide for fish and wildlife movement, and opportunities for habitat migration during the stress of climate change adaptation. These connections improve use by native fish and wildlife that are irreplaceable, especially those uniquely dependent on eelgrass, estuaries, marshes, stream openings, and access to natural shores. Opportunities for maintaining these needed habitat linkages into the future include the creation of upland refugia for wildlife from high tides, more meaningful size and connection of mudflat and salt marsh fragments, and better connection to incoming streams for fish and wildlife that need these. The water entering the bay from the watershed is currently altered from its natural cycle of winter storm pulses of fresh water and sediment. However, it still meets quality standards for water contact recreation, as well as fish/invertebrates that are safe to eat.

1.4 The NRMP's Core Guiding Principles

Certain overarching guiding principles are common elements throughout the NRMP. They describe the intended targets and desired outcomes that help to shape the goals, objectives, and strategies of this document.

1.4.1 Guiding Principle I—Consistency with the Coastal Commission Development Policies, CVBMP Settlement Agreement, and all Regulatory Compliance Requirements

This NRMP will be consistent with the Chula Vista Bayfront Development Policies (issued by the CCC and so herein after referred to as the Chula Vista Bayfront Master Plan Coastal Commission Development Policies [CCDP]) and the May 2010 CVBMP Settlement Agreement between the Port, the City of Chula Vista, and the Bayfront Coalition. It will also be consistent with the San Diego Bay Integrated Natural Resources Management Plan (INRMP) and all regulatory requirements as appropriate and identified in the Environmental Impact Report (EIR) for each jurisdiction, including the Multiple Species Conservation Program (MSCP) Subarea Plan on City lands.

1.4.2 Guiding Principle II—Ecosystem-Based Management and Ecosystem Services

As part of ecosystem-based management (see Section 1.6.3: Non-Regulatory NRMP Facilitates Ecosystem-Based Management and Ecosystem Services and Appendix B: Ecosystem-Based Management and Ecosystem Services), this NRMP is intended to promote the protection, restoration, and enhancement of the natural resources that are unique, characteristic, and globally important to the Chula Vista Bayfront ecosystem. These actions will occur against a backdrop of unprecedented change and uncertainty about the future of those resources due to local and global challenges. Ecosystem-based management is an approach that should:

- Design for the future by conserving the essential elements underpinning habitat function and quality of the Chula Vista Bayfront. As a first goal, provide for no net loss of bay-dependent habitats over time, and promote design guidelines using natural habitat versus built solutions (soft versus hard).
- Facilitate resilience to climate change by identifying and implementing adaptation strategies for sea level rise and managing carbon emissions.
- Apply sustainable living solutions in the midst of and in the built environment, adjacent to natural resources under global climate pressure.
- Minimize impacts of human presence on wildlife, while fostering the benefits that nature provides for human well-being.
- Use ecosystem services (see Section 1.6.3: Non-Regulatory NRMP Facilitates Ecosystem-Based Management and Ecosystem Services). Appendix B: Ecosystem-Based Management and Ecosystem Services has a framework to communicate values of ecosystems and biodiversity, and to evaluate the pros and cons of management approaches as well as their effect on human well-being and environmental sustainability.

1.4.3 Guiding Principle III—Exemplary Transboundary Connections and Integrated Planning

The implementation of this NRMP within the project boundaries may influence resources across boundaries at local, watershed, and regional scales as it is connected ecologically, culturally, socio-economically, and organizationally. It should:

- Create an enabling environment for cooperation and innovation in implementing natural resources management.
- Empower organizations and stakeholders to work together towards the shared vision of the NRMP.
- Provide clear decision authority and process, allowing for residents, visitors, decision-makers, and natural resources managers to jointly and efficiently protect and sustain this unique environment.
- Inform decision-makers of the risks, anticipated impacts, costs, and trade-offs of proposed management strategies.
- Guide actions within the CVBMP footprint (see Map 1-1 and Map 1-2) to minimize impacts to Wildlife Habitat Areas (WHAs) and connected areas, as defined in the Settlement Agreement. This context includes the USFWS National Wildlife Refuge (NWR) and cooperative intertidal management areas.
- Unify habitat planning among organizations for the best possible outcome for dependent wetland, marine, upland transition, and riparian natural resources. Projects of individual organizations would benefit from collaborative objectives and targeted outcomes for the recovery of fisheries, water quality, habitats, and from buffering the ecosystem for the impacts of sea level rise.

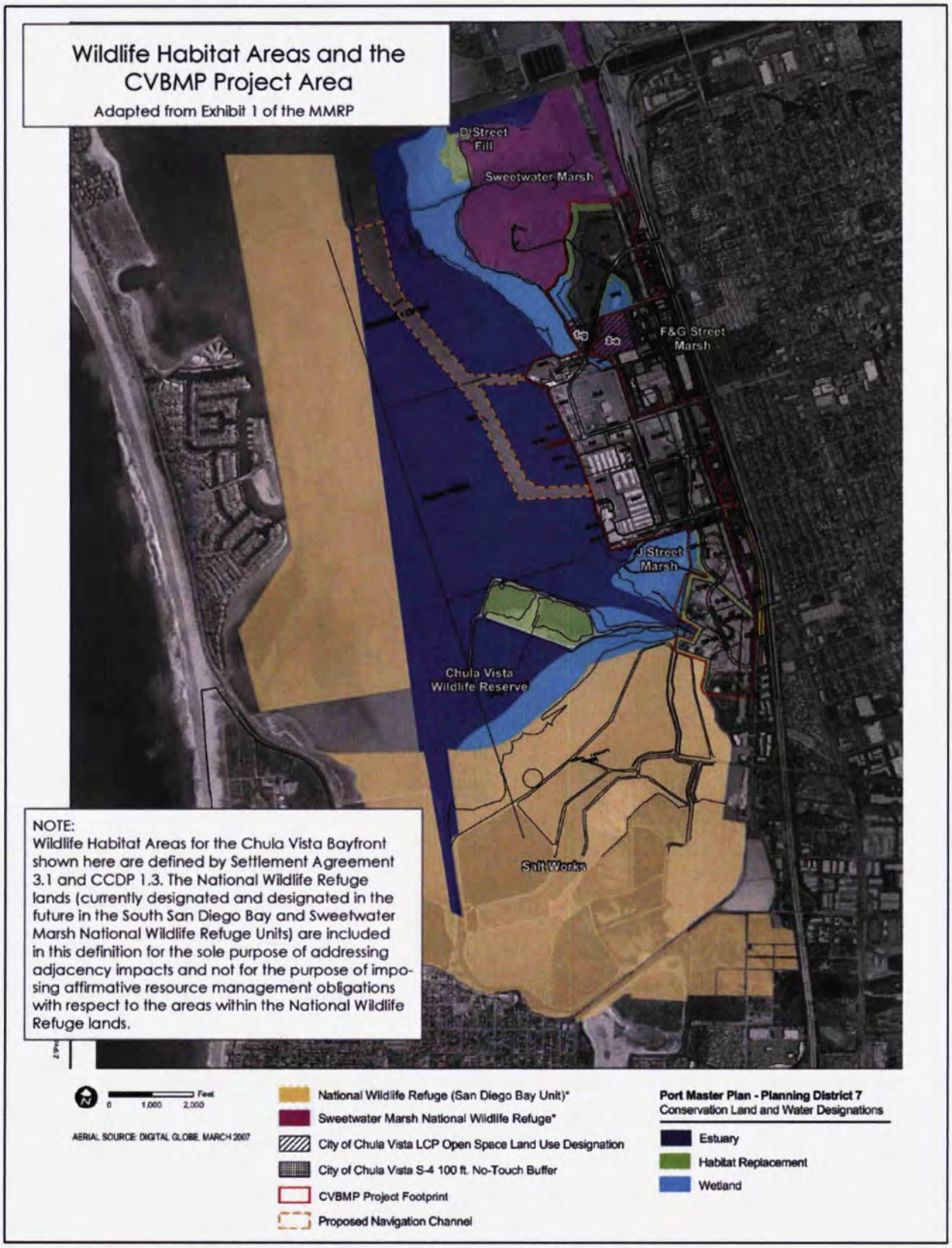
1.4.4 Guiding Principle IV—Benefits from Natural Resources are Accessible to All

Public access to natural resources for all residents of and visitors to the CVBMP project, and the people of California should enable multi-faceted experiences and provide ecosystem services. This includes experiences of discovery, wonder, tranquility, and responsibility.

1.4.5 Guiding Principle V—Best Science for Accountable, Adaptive Management

Adaptive management means a systematic approach to natural resource management that incorporates changes to management practices, including corrective actions based upon study results and review of overall project performance.

Adaptive management should give the NRMP longevity, while addressing estuarine complexity and issues that emerge over time. Decisions should be accountable and based on independent, peer-reviewed evidence, transparent research analysis, and the precautionary principle for protecting vulnerable natural resources. While evidence-based conservation should always be sought, available science will have limits for decision-making due to scale, complexity, data availability, social considerations, legal frameworks, and the affected community's vision. Therefore, decision-makers may want to consider risk, degree of consequences, vulnerability, and cost-effectiveness.



Map 1-1. Wildlife Habitat Areas and the Chula Vista Bayfront Master Plan footprint.

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Map 1-2. Chula Vista Bayfront Master Plan planning footprint.

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Conservation solutions should not be delayed by gaps in available evidence, but should promote innovation with pilot studies using the latest technology. Pilot projects should be supported by monitoring in an adaptive framework, designed to determine whether project outcomes are benefiting the NRMP's goals and objectives, and whether they are achieved efficiently and equitably. Monitoring will benefit accountability among partners in NRMP implementation.

1.4.6 Guiding Principle VI—Planning is Non-Regulatory

Planning is a tool for retaining what we value about a place. While information contained in the NRMP may be included in regulatory documents, it is in itself non-regulatory. In this NRMP, the elements of regulatory compliance that are already established are incorporated, such as through the certified CCDP, while building around these a natural resources planning framework that looks into the future of valued and vulnerable natural resources for the life of the CVBMP development.

Extended horizons make for better natural resources planning. This means looking beyond the immediate footprint of the development to surrounding areas as defined in the Settlement Agreement (see Section 1.2: The NRMP's Origin and maps in this chapter), since the Bayfront is an unnatural boundary in terms of ecosystem function. It also means looking at longer time frames (a decade and longer). This expanded view can serve as a good foundation for partnerships and collaborative planning. This NRMP is consistent with and does not override any other Port planning documents, such as the San Diego Bay INRMP, the Climate Action Plan, and others.

1.4.7 Guiding Principle VII—Collaborative Action

The CVBMP is a visionary and significant achievement for the region. It has been exemplary in its collaboration to date, and resource management and protection will be funded, in part, by successful development projects.

Collaboration makes for better ecological, social, and economic outcomes. Recognizing that many types of knowledge are needed to reach consensus in an ecosystem-based approach, the partnerships built through collaborative planning are an alternative to gridlock in getting beneficial work done. Collaboration must continue to be a hallmark of this effort across jurisdictions, artificial political boundaries, communities, and agencies.

While collaboration and partnership are core themes of this NRMP, they do not change jurisdictional authority or responsibility. For example, WHAs (refer to Map 1-1) discussed in the NRMP include lands administered by the Port and City, as well as:

> All National Wildlife refuge lands, currently designated and designated in the future, in the South San Diego Bay and Sweetwater Marsh National Wildlife Refuge Units. Anything in this Agreement to the contrary notwithstanding, National Wildlife Refuge lands are included in the definition of the WHAs for the sole purpose of addressing adjacency impacts and not for the purpose of imposing affirmative resource management obligations with respect to the areas within the National Wildlife Refuge lands (Settlement Agreement 3.1.1, CCDP 1.3).

These NWR lands will remain under the jurisdictional authority of the USFWS, but will be addressed within the context of the NRMP to allow for the development of conservation measures that will help avoid or minimize adjacency impacts associated with development and intensified human use of the Chula Vista Bayfront. Likewise, the Port and City of Chula Vista will retain jurisdictional authority and responsibility for WHAs that they administer, including:

All District designated lands and open water areas in the Conservation Land Use Designations of Wetlands, Estuary, and Habitat Replacement as depicted in the Draft Precise Plan for Planning District 7; Parcels 1g and 2a from the City's Bayfront Specific Plan; No-Touch Buffer Areas as depicted on Exhibit 2 of the MMRP (Settlement Agreement 3.1.2 through 3.1.4; CCDP 1.3).

1.5 Setting

1.5.1 Planning and Jurisdictions

For planning purposes, the CVBMP project footprint was divided into three districts: the Sweetwater District, comprising the northern portion of the planning area; the Harbor District, including the central portion of the planning area near the marinas; and the Otay District, encompassing the southern portion of the planning area (refer to Map 1-2). These three districts were subdivided into smaller planning areas for the identification of specific development and/or management activities (Map 1-3; refer also to Table C-1 in Appendix C: Setting).

An important component of the CVBMP is the anticipated land exchange with North Chula Vista Waterfront L.P. (Pacifica) and the Port to achieve an improved mix of land uses. It shifted high-density residential land uses from the more environmentally sensitive Sweetwater District to the centrally located Harbor District, which would serve as an economic catalyst for the overall bayfront. The Port received 97 acres of land near E Street, immediately adjacent to the NWR. For the Port, the 97 acres is intended for open space buffers and areas for habitat replacement opportunities. There is also planned: a 21-acre Signature Park with connecting walking trails, overlooks, and picnic areas; 120,000 square feet of commercial recreation development; one campground/recreational vehicle park; and the relocation of the Living Coast Discovery Center's parking lot. Pacifica received 35 acres of land near J Street, immediately east of the Chula Vista Marina. The 35 acres is intended to include a mix of uses, including a 1,500 mid-rise and high-rise residential unit, 15,000 square feet of ground floor retail, 420,000 square feet of mixed-use commercial and office space, and a 250-room hotel.

The result was a net gain of 62 acres of land to the public for parks, open space, and lower-impact future development. Infrastructure improvement to J Street, Marina Parkway, and A Street around the harbor could occur, and Pacifica would be able to generate increased tax revenue for the City of Chula Vista. Pacifica contributed $3 million to the Port for future infrastructure improvements on the Chula Vista bayfront. Pacifica committed that its project will be certified under the Leadership in Energy and Environmental Design (LEED) rating system and will beat Title 24 energy efficiency standards for residential and non-residential buildings by 20 percent.

Further, the project resulted in the creation of a Community Benefits Fund, managed by the San Diego Foundation for the purposes of natural resources protection, sustainability, livability, affordable housing, and community impacts and culture (refer to Section 7.4.1.5 Community Benefits Fund).

Map 1-3. Jurisdictions and management parcels of the Chula Vista Bayfront Master Plan footprint.

1.5.2 Cultural Land Use History

Appendix C: Setting provides a synopsis of human uses of the Chula Vista bayfront. This history includes prehistoric Native American use, Spanish and Mexican use, and American use up to the present-day. Much of the historic tidal lands in the vicinity of the CVBMP project have been developed out. See Map 1-4 for bay habitat circa 1859.

Chula Vista is located within the historical territory of the Kumeyaay, which may have extended as far north as the San Luis Rey River, prior to European contact. At the time of Spanish contact, the Kumeyaay were a nomadic people who inhabited portions of present-day San Diego County, Imperial County, and Baja California, Mexico (Loumala 1978; City of Chula Vista 2012c). The Kumeyaay practiced a fairly typical hunting-and-gathering way of life common among California Native Americans. They subsisted on a diet of fish, small and large game, and wild seeds, nuts, and berries (City of Chula Vista 2012c). Kumeyaay living along the coast collected clams, abalone, scallops, starfish, octopus, and other marine species from lagoons and tidepools, and grunion were gathered during runs (Baksh n.d.).

The salt works is also a part of the historical land use of the Chula Vista Bayfront and region. In 1870, La Punta Salt Works was established in the southeast corner of the San Diego Bay, but the facility closed in 1901 (Otay River Watershed Management Plan [ORWMP] 2006). By 1916, the facility stretched across the entire end of the south bay. This expansion eliminated salt marsh and mudflats with the creation of diked evaporation ponds. In 1999, approximately 1,400 acres of the salt works created the South Bay Unit of the San Diego Bay NWR, including open water areas (ORWMP 2006; E. Maher, pers. com. 2013). Map 1-4 illustrates habitats historically present in San Diego Bay and the CVBMP footprint.

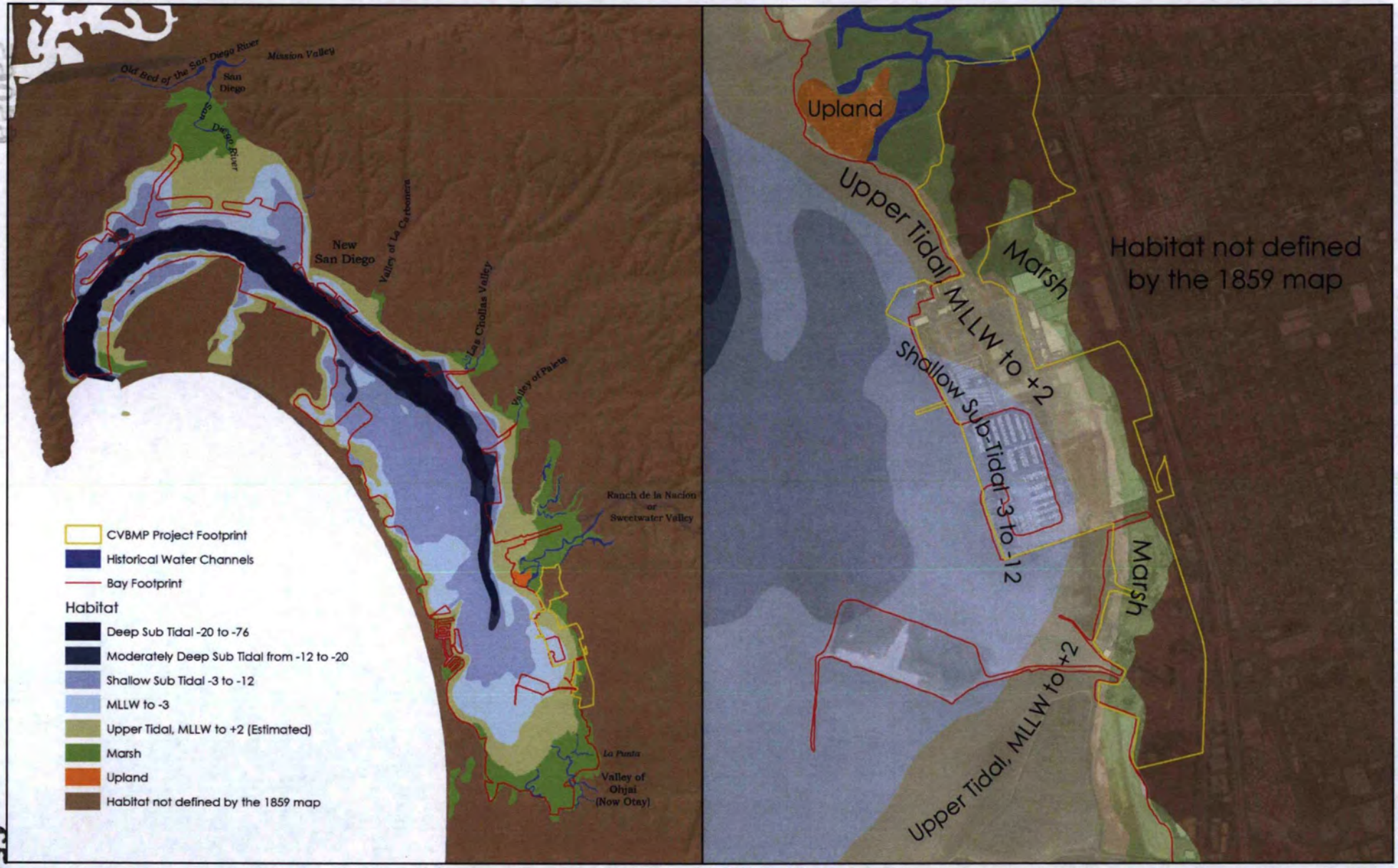
1.5.3 Current Natural Resources Setting

Map 1-5 presents the various vegetation and habitats found within the CVBMP footprint and WHAs. Many of these habitats, including shallow and intertidal habitats such as mudflat and marsh, are required by a number of important fishery and sensitive migratory species. These liminal ecological spaces are scarce because of the development of the many harbors, ports, and marinas of the southern California region. An overview of these resources is presented in Section 2.0: Sustainable and Improved Native Habitats and Communities, and in Appendix C: Setting. Detailed information on each habitat and survey results are presented in the EIR for the CVBMP.

1.6 Approach to Planning

1.6.1 Collaboration

The WAG engaged in a collaborative effort to develop this NRMP (see Guiding Principle VII). A kickoff meeting was followed by six focused topic subgroup meetings, and three consensus-building meetings. The NRMP was iteratively refined through a series of public drafts. An internal website facilitated ongoing comment review, information sharing, and compliance with the Brown Act (California Government Code 54950 et sec.).



*Depths and annotations reproduced from San Diego Bay, California, Survey of the Coast of the United States, 1859

0 1 2 Miles

Map 1-4

San Diego Bay Habitats Identified in 1859*

0 0.5 1 Miles

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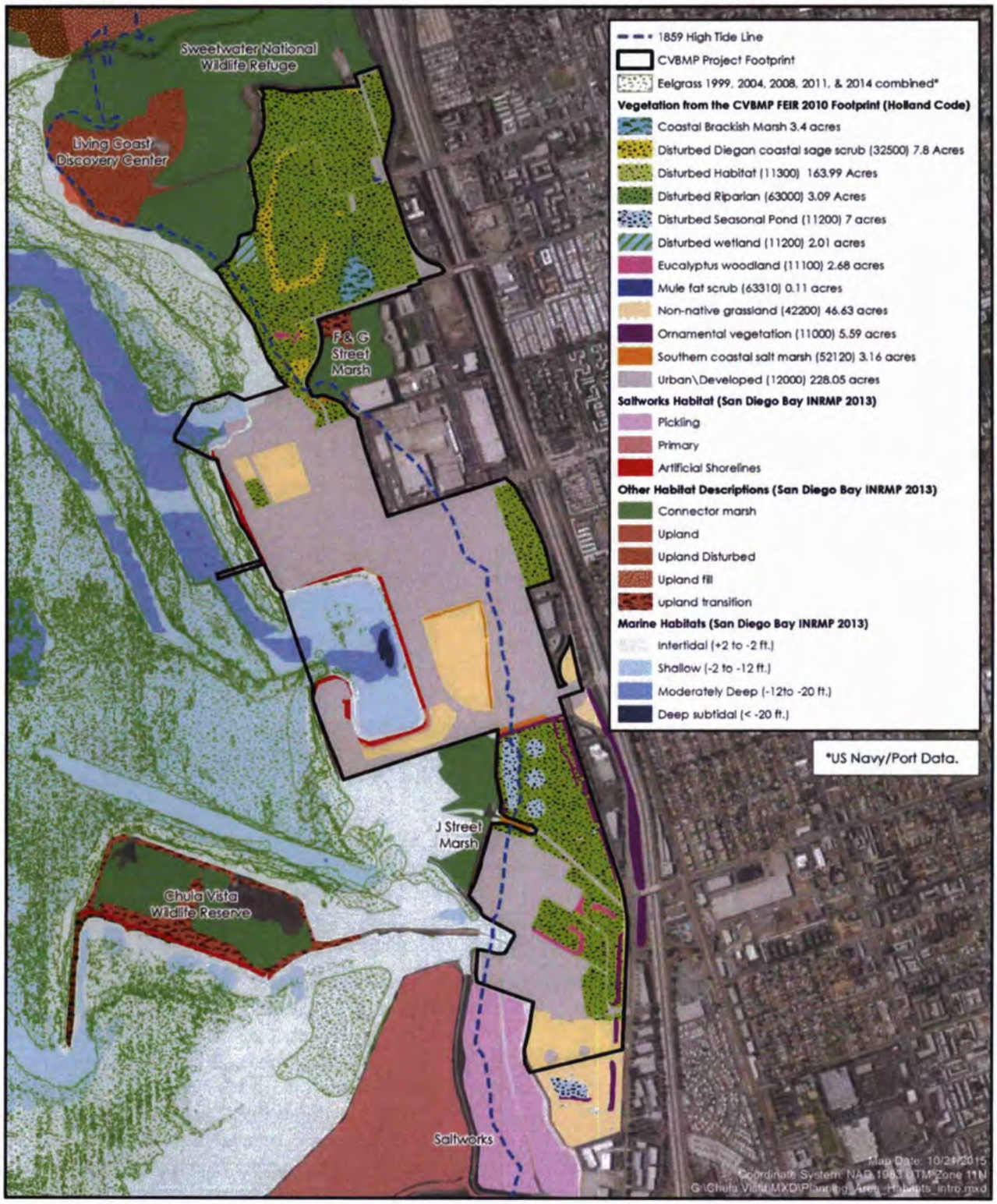

Habitats Within & Adjacent to the CVBMP Project Footprint

Miles
0 0.25 0.5
Kilometers
0 0.25 0.5

Map 1-5. Vegetation and habitats within and adjacent to the Chula Vista Bayfront Master Plan project footprint.

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1.6.2 Overriding Driver of Impacts to Natural Resources and People—Climate Change

Climate change adaptation is stressed throughout the NRMP as the defining critical issue for natural resources now, and over the coming decades. Warmer temperatures, rising waters, and other expected changes may bring new stresses for countless species of plants, animals, and fish. Some species are adaptable with wide ranges, and are likely to continue to thrive, while those that depend on particular habitats will be more vulnerable. This NRMP considers ***flooding from sea level rise*** and ***extended heat days*** as primary consequences of climate change in the footprint of the CVBMP. Climate change may also limit the ***availability of water*** to maintain landscaped areas in the future. This may require adjustments in the function of vegetation intended for environmental protection such as its use for erosion control, treatment wetlands, and for blocking sound or stray light from sensitive areas.

The strategies in this NRMP are built on existing or emerging science, adaptation, and conservation efforts, such as the U.S. Global Change Research Program, the Interagency Climate Change Adaptation Task Force, State Wildlife Action Plans, and Landscape Conservation Cooperatives.

See Appendix D: Sea Level Rise, Climate Change, and Carbon Sequestration Assumptions for depictions of projected sea level rise for the vicinity of south San Diego Bay.

1.6.3 Non-Regulatory NRMP Facilitates Ecosystem-Based Management and Ecosystem Services

This is a non-regulatory plan, however the cornerstones of the plan are those requirements found in the NRMP's controlling documents (the Mitigation Monitoring and Reporting Program [MMRP] of the EIR, the CVBMP Settlement Agreement, and the CCDP). While some impacts of the CVBMP development must be mitigated through regulatory processes, the underlying compliance requirements are documented in these controlling documents. Most of this NRMP's goals and objectives are not regulatory.

This absence of a species-specific regulatory driver is one of this NRMP's strengths. It facilitates ***ecosystem-based management*** and planning for the crucial functions of the coastal environment that underpin its productivity and uniqueness. This 50-year plan seeks to provide a unifying approach to broad management considerations as outlined inAppendix B: Ecosystem-Based Management and Ecosystem Services.

As stated in Guiding Principle II, goals and objectives of this NRMP emphasize natural resource functions that benefit the entire ecosystem. These are then linked to proposed indicators of successful natural resources management. Ecosystem functions are primarily based on the great, global cycles of matter and energy that make life on this planet habitable for wildlife and humans: water, carbon, nitrogen, phosphorus, and sulfur are the major ones. Disruption of these cycles can lead to floods, droughts, climate change, pollution, and many other environmental problems. Soils provide critical ecosystem services, especially for sustaining ecosystems and growing food and fiber. Ecosystem functions include the interactions between organisms and the physical environment, such as nutrient cycling, soil development, and water budgeting, as well as interactions among the biota, such as food webs and mutualistic relationships, and biodiversity as a basis for a resilient ecosystem. Mobile and migratory wildlife provide critical links and increase ecosystem resilience by connecting habitats and

ecosystems through their movements. Their services include pollination, seed dispersal, nutrient deposition, pest control, and scavenging. Ecosystem functions range from global to microscopic in scale.

Ecosystem services are the set of ecosystem functions that are useful to people, communities, and economies every day. Appendix B: Ecosystem-Based Management and Ecosystem Services provides a primer on these functions. They are the direct and indirect contributions of ecosystems to human well-being, most of which are traditionally unpriced since they are not traded economically. This integrative approach to conservation planning and economic practice for stewardship of natural resources has become federal policy in the United States, and is applied internationally. It was formalized by the U.S. National Research Council and the United Nations' Millennium Ecosystem Assessment in 2005. This latter effort was a four-year assessment of the condition and trends of the world's ecosystems, supported by 1,300 experts. Consistent with these sources and federal policy, this NRMP classifies ecosystem services according to the following:

- **Provisioning services** (the goods or products obtained from ecosystems): food, fiber, raw material, fresh water, medicinal resources, and genetic resources.
- **Regulating services** (the benefits obtained from an ecosystem's control of natural processes): local climate and air quality regulation, carbon sequestration and storage, moderation of extreme weather events, water purification and wastewater treatment, erosion prevention and maintenance of soil fertility, pollination, and pest regulation through biological control.
- **Habitat or supporting services:** habitats for species, maintenance of genetic diversity, primary productivity (photosynthesis), soil formation, nutrient cycling, and water cycling.
- **Cultural services** (the non-material benefits people obtain from ecosystem services): recreation and mental and physical health, tourism and scenic values, aesthetic appreciation and inspiration for culture, art and design, ethical values, education, spiritual experience, and sense of place.

It is intended that implementation of this CVBMP NRMP showcase the benefits of ecosystem services in the urban/wildland and coastal water/wetland interface, and in the built environment through the true valuation of the important role they play in our daily lives. It is hoped that this NRMP serves as a model to help resolve impasses in the conservation of San Diego Bay's natural resources.

1.6.4 NRMP Content and Footprint

The CVBMP Project Area is set forth in the CVBMP Settlement Agreement and consists of the CVBMP project footprint and the WHAs. As set forth in the Settlement Agreement, the NWR lands are included in the definition of WHAs for the sole purpose of addressing adjacency impacts and not for the purpose of imposing affirmative resource management obligations with respect to the areas with the NWR Lands. Wildlife management objectives outlined in the Controlling Documents are to be achieved in the Port/City WHAs to the extent that they address such adjacency issues.

This NRMP provides strategies for managing natural resources within the CVBMP footprint and WHAs. Fulfillment of the CVBMP's vision could influence the integrity of WHAs both internal and adjacent to the CVBMP footprint in both positive and negative ways (refer to Map 1-1). At the same time the CVBMP footprint is influenced by activity from the upstream watershed and from coastal-estuarine areas with which it is contiguous. Recommendations are made to manage positive and negative influences in both directions. The Project footprint boundaries are

defined in the CVBMP Settlement Agreement and depicted herein on Map 1-1 and Map 1-2. The goals, objectives, and strategies set forth in the NRMP shall apply to the Project footprint and WHAs.

This NRMP does *not* provide: 1) strategies for design, expansion, or adaptation to sea level rise of the Sweetwater Marsh Unit or other bay-side units of the San Diego NWR; or 2) a plan to manage the marine habitat and resources within the south bay that are outside of the CVBMP footprint and WHAs; management of natural resources within San Diego Bay as a whole is covered by the San Diego Bay INRMP (Port and U.S. Navy 2013). The NRMP seeks to be consistent and integrated with the USFWS Comprehensive Conservation Plan for the refuges, the INRMP, and other related Port and City plans. The goal is to have seamless management of wildlife throughout the entire area that influences habitat values of the CVBMP.

The NRMP ***does*** seek maximum possible and necessary actions within the CVBMP footprint and WHAs under the jurisdiction of the Port and City to achieve management objectives for those areas and their resources (see Map 1-2 and other maps on this chapter) as these resources are part of our collective commons and responsibility.

Taking into consideration the potential changes in functionality of WHAs due to rising sea levels, the NRMP will promote, at a minimum, the following objectives ("Management Objectives") for the WHAs (Settlement Agreement 3.2, CCDP 1.3):

- Long-term protection, conservation, monitoring, and enhancement of: wetland habitat, with regard to gross acreage as well as ecosystem structure, function, and value; coastal sage and coastal strand vegetation; upland natural resources for their inherent ecological values, as well as their roles as buffers to more sensitive adjacent wetlands. Upland areas in the Sweetwater and Otay Districts will be adaptively managed to provide additional habitat or protection to create appropriate transitional habitat during periods of high tide and taking into account future sea level rise (Settlement Agreement 3.2.1, CCDP 1.3).
- Preservation of the biological function of all bayfront habitats serving avifauna as breeding, wintering, and migratory rest stop uses (Settlement Agreement 3.2.2, CCDP 1.3).
- Protection of nesting, foraging, and rafting wildlife from disturbance (Settlement Agreement 3.2.3, CCDP 1.3).
- Avoidance of actions within the Proposed Project area that would adversely impact or degrade water quality in San Diego Bay or watershed areas or impair efforts of other entities for protection of the watershed (Settlement Agreement 3.2.4, CCDP 1.3).
- Maintenance and improvement of water quality where possible and coordination with other entities charged with watershed protection activities (Settlement Agreement 3.2.5, CCDP 1.3).

To that end, the NRMP includes potential proactive actions and recommendations that address inevitable impacts to adjacent resources to the maximum extent it can be done *within* the CVBMP footprint and in WHAs under the jurisdiction of the Port and City. In the NRMP, these goals, objectives, and strategies will be stated as applying to the CVBMP "project area" as stated in the Controlling Documents (see Map 1-1).

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In addition, the NRMP includes recommendations suggested for its influencing region - the upstream watershed and adjacent coastal-estuarine resources of south San Diego Bay (Map 1-6 shows this sphere of influence). These bigger-picture actions influence (both positively and negatively) the health and ecosystem services provided within the CVBMP project area. The NRMP also provides recommendations, goals, objectives, and strategies to catalyze grant funding or other important conservation work.

One of the intents of this NRMP is that it be used as a reference by others in the future for natural resources management planning in the south bay outside of the current CVBMP project footprint, and to build on the Port's suite of plans and initiatives for its jurisdiction and responsibilities. These include the Climate Action Plan (Port 2013); the future Comprehensive Integrated Port Master Plan (PMP) Update; the Final San Diego Bay INRMP (Port and U.S. Navy 2013); Sea Level Rise Adaptation Strategy for San Diego Bay (January 2012); future plans for Pond 20; and considerations for future planning overlays and regulatory compliance facilitation including mitigation banking that advances NRMP goals.

1.7 How to Use This Plan

1.7.1 Plan Organization

This NRMP is organized hierarchically in tiers from broad to specific, starting with the Vision statement described above (Section 1.1: The NRMP Vision), then by goals, objectives, and strategies in each of the following chapters. The Table of Contents reflects the underlying ecosystem-based management and ecosystem service themes carried throughout the plan, organized in the following groupings:

- Productive and Diverse Habitats and Communities
- Minimizing Harm to Wetlands and Marine Waters
- A Wildlife-Friendly Urban-Wildland Interface
- Maximum Ecosystem Services in the Built Environment and Open Space
- Education to Inspire and Promote the Human Experience of Nature
- Integration and Implementation

The final chapter on implementation integrates all of the previously presented work in the NRMP, prioritizes the work, and identifies roles and responsibilities.

The supporting appendices provide detail on the background and approach to this NRMP.

1.7.2 Definition of Planning Terms

The following terms are used throughout this NRMP.

Vision

The Vision includes inspiring words chosen to clearly and concisely convey direction of the organization and outcome for the plan area. It uses present tense guiding principles, communicates both purpose and values, and motivates realization of an attractive and common vision for the future (see Section 1.1: The NRMP Vision).

Ideally, what will natural resources and their management look like in support of the CVBMP?

Hydrologic Units and Natural Resources Context of the CVBMP

Miles
0 0.25 0.5
Kilometers
0 0.5 1

Map 1-6. Selected wildlife habitat and watersheds adjacent to and influencing the Chula Vista Bayfront Master Plan project footprint.

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Goal

A Goal is a broad guiding principle that lasts for the life of the plan and sets the course. It is not necessarily fully reachable, but an intention to act.

What course of action will help achieve the Vision of the NRMP for natural resources and their management?

Objective

An Objective establishes the desired condition for each resource or area of concern. It can be qualitative or quantitative, but should be measurable. It can address multiple scales and time frames.

What is the conservation target for the resource? What indicator describes what success looks like for the resource?

Standard (for implementing Goals and Objectives)

A Standard is an expression of a minimum, measurable level of physical and biological condition or degree of function required for a healthy, sustainable natural resource. It is generally long-term, but can be adjusted with improved knowledge. It is based on a conceptual model of a range of outcomes possible for a resource/ecological site. It focuses on structure and function. It is attainable and complies with applicable statutes, policies, and directives.

Strategy (for how to achieve the Standard and Objective)

What is needed to ensure that objectives and standards can be met or progress made toward them. Adjusted over time as knowledge and experience from monitoring improves. Management approaches, actions, and practices need to achieve desired natural resources condition.

The following terms relate specifically to the implementation of NRMP Core Strategies (refer to Section 1.7.4) and the NRMP Implementation Table presented in Chapter 7.

Project Approval

As defined below for each specific project type:

1. Public Works Project in Port Jurisdiction: Approval of plans and specifications by the Board of Port Commissioners or its designee pursuant to Board Policies.
2. Public Works Project in City Jurisdiction: Issuance of Grading or Building Permit by City of Chula Vista, whichever occurs first.
3. Port Tenant Project: Final approval of plans by the Board of Port Commissioners or its designee pursuant to Board Policies.
4. City Developer Project: Issuance of Grading or Building Permit by City of Chula Vista, whichever comes first.

Project Proponent

Developer or agency that submits an application or initiates a project and is thereby responsible for design, cost, permit acquisition, implementation, and compliance with all Chula Vista Bayfront Controlling Documents, CVBMP NRMP, and Port or City policies.

1.7.3 Sources and Levels of Funding Not Yet Defined

The implementation of the NRMP is a multi-decade effort and may, over the life of the project, include a significant number of projects of all sizes and scopes. The NRMP will evolve through an adaptive management process and the life of the NRMP. The CVBMP Financing Agreement between the City of Chula Vista and the Port requires that Operation and Maintenance sources commit to funding some types of work first. Also, 0.5 percent of each sale of a residential condo and $2,000 per room for the Pacifica hotel will be paid to a Joint Powers Authority (JPA). This is discussed further in Section 7.0: Moving Forward: Implementation of the NRMP, Monitoring for Adaptive Management, Addressing SLR, and Future Funding.

The visionary goals, objectives, and strategies set forth in the NRMP are intended to establish the requirements to protect natural resources and must be incorporated in future decisions of the Port and the City of Chula Vista within the CVBMP. Once adopted by the Port and City and approved by the Coastal Commission, implementation of the NRMP is required to be funded and implemented as set forth in the Settlement Agreement. The Port and City may also seek alternative sources of funding to implement NRMP goals, objectives, and strategies where appropriate, including through federal and state grants.

Funding for the implementation of the NRMP will be from the Port and City through the JPA. The Port and City will ensure that the JPA will treat financial requirements of the NRMP as priorities, as revenue is identified and projects implemented, per Settlement Agreement 3.4 and 4.1.1. However, implementation of the NRMP is not required until project related revenues are identified.

Readers are encouraged to read the plan in its entirety, which is designed to identify direction and opportunities for future work.

1.7.4 Conventions Used in the NRMP

The underlying requirements for development of the CVBMP project footprint derive from the planning and permitting documents that preceded the development. They provide the basic framework from which this NRMP is built. Throughout the NRMP, requirements from these documents are embedded into a comprehensive approach for natural resources protection that is longer term and broader in scope than regulatory mitigation alone. The NRMP Controlling Documents include (Appendix I: NRMP Controlling Documents):

- the MMRP as described in the CVBMP Final EIR (May 2010);
- CCDP conditions (July 2012); and
- the CVBMP Settlement Agreement (May 2010).

The NRMP strategies that are mandatory compliance (that is, covered in the MMRP, CCDP, or the CVBMP Settlement Agreement) are identified by a blue shaded box.

Implementation of the Controlling Documents referenced in the blue box and certain other strategies is identified with a green bar to the left. These are referred to as Core Strategies. (Sub paragraphs under green bar core strategies are only required implementation if they too have a green bar next to them.)

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All other strategies will be considered during project approvals for both public and private projects, as applicable, and as part of future adaptive management efforts. Strategies offered in this plan are intended to help decision-makers in project review and to seek grant funding.

As a first approach and as much as possible, the need for funding is minimized through design guidelines presented herein. For example, prevention strategies are promoted over enforcement or control for invasive species. Also, this NRMP reflects in its recommendations a preference for performance-based outcomes, rather than specific practice prescriptions.

In addition, when the NRMP uses such terms as practicable, feasible, or possible, considerations of whether the item can be accomplished in a successful manner within a reasonable amount of time in view of economic, environmental, legal, social and technological factors shall be taken into account.

The inclusion of shaded boxes with descriptions of requirements imposed by the NRMP's controlling documents (CVBMP Settlement Agreement, the MMRP, and the CCDP) is for information and reference purposes only. Should any ambiguity or apparent conflict exist between the Controlling Documents and the NRMP, the Controlling Documents shall control for all purposes. The NRMP does not modify the Controlling Documents nor do the descriptions provided within shaded boxes of the NRMP modify or create obligations in addition to those already imposed by the Controlling Documents.

Contextual Information

Information that is contextual or explanatory in nature is provided throughout the NRMP to contribute to a more complete understanding of the relevant compliance and recommended strategies.

In a number of cases, this information is presented within a box outlined in green or a table with green shading.

In other cases, the information is located in the left-hand margin adjacent to relevant strategies.

Use of Ecosystem Service Icons in Left Margin

The set of icons below represent ecosystem services provided by each strategy or project (see Section 1.6.3: Non-Regulatory NRMP Facilitates Ecosystem-Based Management and Ecosystem Services). These are color-coded by the category of ecosystem service. For relevant strategies, they appear in the left margin in two rows to indicate whether the NRMP action supports an ecosystem service at a primary (top row) or secondary (bottom row) level. For example, eelgrass habitat would provide multiple ecosystem services, including provisioning, regulating, and habitat services.

Provisioning Services


Food


Raw Materials


Fresh Water


Medicinal Resources

Regulating Services


Local Climate and Air Quality


Carbon Sequestration and Storage


Moderation of Extreme Weather


Wastewater Treatment


Erosion Prevention, Soil Fertility


Pollination


Biological Control

Habitat or Supporting Services


Habitat for Species


Maintenance of Genetic Diversity

Cultural Services


Recreation, Mental and Physical Health


Tourism


Aesthetic Appreciation, Inspiration for Culture, Art, and Design


Spiritual Experience, Sense of Place

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2.0 Sustainable and Improved Native Habitats and Communities

Migratory shorebirds—such as the black brant—flock, rest and forage in the mudflats and wrack lines to regain their strength for migration for the long journey south. Eelgrass and sheltered intertidal shores are abundant in young fish that feed until they are large enough to enter the open ocean. The green sea turtle ripples the water surface now and again. Endemic gobies abound in the warm shallow waters, and game fish regain their numbers in the grassy underwater nursery. Nesting seabirds come to nest and fledge their chicks on exposed flats where abundant silver fish, small enough for a young, school nearby. The salt marsh is black with anaerobic activity and the salt-loving pickleweed and cordgrass obscure the nests of herons, rails, and sparrows. In the tidal transition that buffers storm surge salt-tolerant grasses, herbs, and shrubs provide cover for specialized insects and their pollinator host flowers, beetles, and black-tailed jack rabbits.

2.1 Key Messages

- Compliance through normal regulatory channels as described under the Chula Vista Bayfront Development Policies, which were approved by the Port Commission and the CCC in 2012, will help avoid net loss of habitat acreage or value within the Chula Vista Bayfront area that are due to development impacts in the CVBMP footprint. This NRMP proposes the same standard, while accommodating impacts of climate change unrelated to the development itself. This is primarily achieved through establishment and design of sea level rise Buffer Areas (No-Touch, Limited Use, and Transitional Use Buffer Areas; refer to Map 2-1). Additionally, the parks and open space, where appropriate, will be designed to accommodate flood waters from the bay, as well as feature exemplary treatment wetlands. There may also be a need to accommodate impacts from sea level rise in areas adjacent to the Sweetwater salt marshes and at the J Street marsh.
- Sea level rise will provide unique opportunities to create/restore sensitive wetland habitats; it will also pose threats to established sensitive wetland habitats.
- There is opportunity to improve existing habitat in the CVBMP footprint and WHAs through restoring and enhancing size, connectivity, and complexity (in microtopography and substrate). Of current habitat values within the CVBMP area, the upland transition appears the most degraded. While ecosystem functions are impaired in the wetlands and shallow nearshore habitats due to historic losses, they continue to support uniquely productive fish and wildlife communities.
- Core ecosystem values of the south San Diego Bay can be represented within the CVBMP footprint and WHAs by selecting conservation planning species or species groups that use important and unique attributes of the bay-estuarine environment. Considering the life cycles of these species helps to ensure conservation of the key physical and biological attributes of habitat that support them.
- Future conservation and restoration of south bay habitat values may entail partnerships with agencies and organizations that manage lands outside the footprint of the CVBMP.

There are several primary concerns for the sustainability of habitat functions, and the flora and fauna they support, in the CVBMP footprint, adjacent WHAs, and their connections to the rest of south San Diego Bay. These are:

- The historic loss of the size and quality of habitat (See Appendix Table C-4 which shows estimated habitat losses within San Diego Bay from 1859 to 1995 by comparing a 1859 geodetic chart and 1995 aerial photo, updated in 2007). This primarily affects the shallow shores (intertidal mudflat and salt marsh are the most impacted), intact natural shorelines, upland transition areas, and the fresh water flow regime from streams. Poor quality habitat supports few native species.
- Migration pathways are impaired by loss of connectivity and "stepping stones" for rest and replenishment, such as avian and pollinator pathways.
- Habitat fragmentation impairs local movement of fish and wildlife among habitats to complete life-cycle needs.
- Invasive species are an increasing threat to local native flora and fauna. This threat interacts with climate change vulnerabilities.
- The increasing pace of climate change and change in sea level rise predictions complicate the ability to design management strategies to address it adequately. There is no universally accepted or used approach to address sea level rise, and there is a need for more refined analysis of expected flooding to direct early actions or forestall impacts. Multiple lines of decision-making authority and jurisdictions complicate this issue. The Port/City will utilize as appropriate the California Coastal Commission's Sea Level Rise Policy Guidance (2015).

- The scale of natural resources issues, including climate change, does not match the solution space provided by the CVBMP project footprint available to planners. Many important natural resources issues will only be resolved at a bay-wide or regional scale by collaboration among agencies (as described in the Settlement Agreement Management Objectives).
- The degree of indirect impacts from future adjacent development remains uncertain.
- There is concern about the ecosystem's capacity to adapt to the cumulative impacts of all of the above, including the possibility of destabilized food webs or system collapse.

The above concerns were used to establish the NRMP habitat goals and objectives.

Ecosystem function depends on its structure, diversity, and integrity at scales from microscopic to regional (Ecological Society of America [ESA] 2013). Biological diversity is a critical component in strengthening ecosystems against disturbance, and diversity itself is a dynamic property of ecosystems (ESA 2013). This dynamic property is amplified by climate change. Therefore, it follows that management of biological diversity requires recognizing that the complexity and function of any particular location is influenced heavily by the surrounding system. Refer to Appendix B: Ecosystem-Based Management and Ecosystem Services. This NRMP emphasizes ecosystem function as the key target of conservation for the CVBMP footprint, the adjacent WHAs, and the seamless ecological interlinkages in the system that influence these functions (see Settlement Agreement 3.1.1 through 3.1.5, and Exhibit 1).

This chapter is organized in four sections:

2.2 Mitigation Compliance and Improving Habitat Quality in the CVBMP Footprint and WHAs
- Objective 2.2-1 Promote the goal of no net loss due to direct and indirect effects of development
- Objective 2.2-2 Long-term habitat conservation
- Objective 2.2-3 Habitat for conservation planning species

2.3 Improving Habitat and Community Connections
- Objective 2.3-1 Resilient habitats through connectivity
- Objective 2.3-2 Cooperative agreements for neighboring habitats
- Objective 2.3-3 Re-establish and improve watershed connections

2.4 Sea Level Rise and Buffer Areas
- Objective 2.4-1 No net loss due to climate change
- Objective 2.4-2 Habitat migration
- Objective 2.4-3 Ensure buffer areas add habitat value and other ecosystem services
- Objective 2.4-4 Habitat connectivity
- Objective 2.4-5 Buffer area use

2.5 Effective Restoration to Meet NRMP Goals and Objectives for Climate Change Resilience and Habitat Value
- Objective 2.5-1 Resilient habitats providing ecosystem services
- Objective 2.5-2 Make the most of built shorelines and in-water structures
- Objective 2.5-3 Ensure built structures promote water quality and habitat
- Objective 2.5-4 Sediment replenishment
- Objective 2.5-5 Restoration priorities
- Objective 2.5-6 Multiple benefits to core resource values

2.2 Mitigation Compliance and Improving Habitat Quality in the CVBMP Footprint and WHAs

Goal

No Net Loss of Habitat Area and Ecological Functions. *Strive for no net loss or degradation of marine, wetland, and upland transition habitat area, value, function, or related ecosystem services within the footprint and WHAs due to development in the CVBMP project footprint, and long-term improvement of habitat quality.*

Objective 2.2-1

Promote the Goal of No Net Loss Due to Direct and Indirect Effects of Development. Development projects will comply with avoidance, minimization, and compensation requirements for marine and wetland systems, and sensitive vegetation communities, as required by law, the CCDP, and the MMRP.

I. *Eelgrass and Open Water Development Impact Avoidance.* Development in San Diego Bay waters shall be reviewed for potential impacts to open water (foraging) and eelgrass, including any direct (e.g., construction activity) and indirect (e.g., shading from structures or boats) impacts. Efforts must be made to maintain the eelgrass habitat available and to improve water quality (CCDP 25.2).

> *Prior to Project Approval of site-specific development proposals, the Port/City will review and approve studies prepared by the Project Proponent or Port/City environmental consultant that document the potential for impacts to eelgrass or open water.*

II. *Eelgrass and Open Water Mitigation for Development Impacts.* No net loss of eelgrass meadows shall be permitted. Pre-construction and post-construction eelgrass surveys shall be prepared in full compliance with the "Southern California Eelgrass Mitigation Policy" or any later revised policy adopted by the National Marine Fisheries Service. Any existing eelgrass impacted shall be replaced at a minimum 1.2:1 ratio, in accordance with the Southern California Eelgrass Mitigation Policy[a]. In addition, impacts to open water habitat shall be assessed and mitigated (CCDP 25.2). Prior to construction of the H Street Pier, the Port shall create 0.96 acre of eelgrass habitat [surface water foraging habitat, see also MMRP 4.9-1] to mitigate for the loss of surface water foraging habitat in accordance with the Southern California Eelgrass Mitigation Policy. The creation of eelgrass habitat shall be conducted in accordance with EIR Mitigation Measures 4.9-1 and 4.9-2 in Section 4.9, Marine Biological Resources (MMRP 4.8-8). Prior to completion of in-harbor work in Phase IV, the Port shall create 1.93 acres of eelgrass habitat. The creation of eelgrass habitat shall be conducted in accordance with EIR Mitigation Measure 4.9-2 in Section 4.9, Marine Biological Resources. When project-specific designs are proposed for the remaining project components affecting 1.61 acres of surface water foraging habitat and intertidal mudflats, the mitigation of impacts shall be re-evaluated by the Port during subsequent environmental review pursuant to the California Environmental Quality Act (CEQA) Guidelines Section 15168 to determine accurate net loss and mitigation for the loss of foraging habitat (MMRP 4.8-9).

a. The Southern California Eelgrass Mitigation Policy (SCEMP) has been replaced by the California Eelgrass Mitigation Policy (CEMP). The Port/City will comply with the new policy.

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Prior to Project Approval of construction documents for the H Street Pier and in-harbor development plans, the Project Proponent shall conduct surveys and mitigation, if required, in compliance with paragraph II above.

III. *Wetland Delineation by Coastal Act and Coastal Commission Regulations.* Wetlands shall be defined and delineated consistent with the Coastal Act and the Coastal Commission Regulations, and shall include, but not be limited to, lands within the coastal zone which may be covered periodically or permanently with shallow water and include saltwater marshes, freshwater marshes, open or closed brackish water marshes, swamps, mudflats, and fens. Any unmapped areas that meet these criteria are wetlands and shall be accorded all of the protections provided for wetlands in the PMP. Wetlands shall be further defined as land where the water table is at, near, or above the land surface long enough to promote the formation of hydric soils or to support the growth of hydrophytes, and shall also include those types of wetlands where vegetation is lacking and soil is poorly developed or absent as a result of frequent and drastic fluctuations of surface water levels, wave action, water flow, turbidity, or high concentrations of salts or other substances in the substrate. Such wetlands can be recognized by the presence of surface water or saturated substrate at some time during each year and their location within, or adjacent to, vegetated wetlands or deep-water habitats (CCDP 2.2). Where the required initial site inventory indicates the presence or potential for wetland species or other wetland indicators, the District shall require the submittal of a detailed biological study of the site, with the addition of a delineation of all wetland areas on the project site. Wetland delineations shall be based on the definitions contained in Section 13577(b) of Title 14 of the California Code of Regulations (CCDP 2.3).

Prior to Project Approval of site-specific construction documents, the Project Proponent shall conduct surveys in compliance with paragraph III above.

IV. *Mitigation for Impacts to Jurisdictional Waters of the U.S.:*

A. In Port jurisdiction, the Port or Port tenants, as appropriate, shall mitigate for permanent and temporary impacts to U.S. Army Corps of Engineers (USACE) jurisdictional waters at the following ratios: 1:1 for permanent impacts to non-wetland waters of the U.S.; 4:1 for impacts to wetlands; and 1:1 for all temporary impacts. A minimum of 1:1 mitigation must be created in order to achieve the no-net-loss requirement of the Clean Water Act (CWA). Table 4.8-8 of the EIR provides a breakdown of the required mitigation acreages for all USACE impacts within the Port's jurisdiction. Mitigation for impacts from the Bay and Marina components of the Proposed Project will be established through USACE regulations, once final designs for this work in Phases II through IV are finalized. Prior to the commencement of grading activities for any projects that impact USACE jurisdictional waters, the Port or Port tenants, as appropriate, shall prepare and initiate implementation of a restoration plan detailing the measures needed to achieve the necessary mitigation (MMRP 4.8-12).

B. In City jurisdiction, prior to the issuance of the first clearing and grubbing or grading permit for activities that impact USACE jurisdictional waters, the project developer(s) within the City's jurisdiction shall prepare a restoration plan detailing the measures needed to create/restore impacts to USACE jurisdictional waters within the City's jurisdiction in accordance with the acreage identified in EIR Table 4.8-9 (MMRP 4.8-12).

C. The guidelines for this plan (Port or City jurisdiction) will be developed in consultation with the regulatory agencies. The plan shall summarize the approach taken to avoid and minimize impacts to sensitive habitats, detail the target functions and values, and address the approach to restoring those functions and values. Typically, the restoration plan shall detail the site selection process; shall propose site preparation techniques, planting palettes, implementation procedures, and monitoring and maintenance practices; and shall establish performance criteria for each mitigation site. Typical success criteria may include percent canopy cover, percent of plant survival, and percent of native/nonnative c.anopy cover. A minimum five-year maintenance and monitoring period would be implemented following installation to ensure each area is successful. The restoration plan shall address monitoring requirements and specify when annual reports are to be prepared and what they shall entail. Qualitative and quantitative assessments of the site conditions shall be included. If the mitigation standards have not been met in a particular year, contingency measures shall be identified in the annual report and remediation will occur within three months or the start of the growing season (MMRP 4.8-12).

   1. The Port shall be responsible for ensuring that all of the success criteria are met to the satisfaction of the Port in consultation with the regulatory agencies (MMRP 4.8-12).
   2. The project developer(s) shall be required to implement the restoration plan subject to the oversight and approval of the City (MMRP 4.8-12).

D. Prior to issuance of the first clearing and grubbing or grading permit, for activities that impact USACE jurisdictional waters, the Port or Port tenants, as appropriate, and project developer(s) within the City's jurisdiction shall obtain a Section 404 permit from USACE. The permit application process would also entail approval of the restoration plan from the USACE, as described above with regard to areas that fall under the jurisdiction of USACE (MMRP 4.8-12)

The requirements as noted above in paragraph IV shall be implemented in compliance with the MMRP.

V. *Wetland and Riparian Buffers.* Wherever wetlands are identified, a buffer of at least 100 feet in width from the upland edge of wetlands and at least 50 feet in width from the upland edge of riparian habitat shall be established (CCDP 2.6 and 3.1).

   A. Buffers should take into account and adapt for rises in sea level by incorporating wetland migration areas or other sea level rise adaptation strategies as appropriate (CCDP 3.1).

   B. The CDFW and USFWS must be consulted in such buffer determinations (CCDP 3.1)

   C. In some unusual cases, smaller buffers may be appropriate, when conditions of the site as demonstrated in a site-specific biological survey, the nature of the proposed development, etc. show that a smaller buffer would provide adequate protection. In such cases, the CDFW must be consulted and agree that a reduced buffer is appropriate and the District, or Commission on appeal, must find that the development could not be feasibly constructed without a reduced buffer. In no case shall the buffer be less than 50 feet (CCDP 2.6).

   D. In other cases, the required buffer could be greater than 100 feet, especially for salt marsh wetlands, depending on results of the consultation (CCDP 3.1)

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The Port will develop maps that depict the location of baseline wetland habitat and 100-foot and 50-foot buffers as discussed in paragraph V above. Prior to Project Approval of site-specific construction documents, the Project Proponent shall conduct surveys in compliance with paragraph III above and delineate any buffer in compliance with paragraph V above.

VI. *Mitigation Ratios to Offset Fill or Development Impacts.* Where wetland fill or development impacts are permitted in wetlands in accordance with the Coastal Act and any applicable PMP policies, mitigation measures shall include creation of wetlands of the same type lost. Adverse impacts will be mitigated at a ratio of 4:1 for all types of wetland, and 3:1 for non-wetland riparian areas. Replacement of wetlands on-site or adjacent to the project site, within the same wetland system, shall be given preference over replacement off-site or within a different system. Areas subjected to temporary wetland impacts shall be restored to the pre-project condition at a 1:1 ratio. Temporary impacts are disturbances that last less than 12 months and do not result in the physical disruption of the ground surface, death of significant vegetation within the development footprint, or negative alterations to wetland hydrology (CCDP 2.5). See also Section 7.0: Moving Forward: Implementation of the NRMP, Monitoring for Adaptive Management, Addressing SLR, and Future Funding.

Prior to Project Approval of site-specific construction documents, the Project Proponent shall ensure that adverse impacts to wetlands shall be mitigated at the appropriate ratio in compliance with paragraph VI above.

VII. *Development Activities Permitted.* The diking, filling, or dredging of open coastal waters, wetlands, estuaries, and lakes shall be permitted in accordance with other applicable provisions of this Plan, where there is no feasible less environmentally damaging alternative, and where feasible mitigation measures have been provided to minimize adverse environmental effects, and shall be limited to the following: 1) new or expanded port, energy, and coastal-dependent industrial facilities, including commercial fishing facilities; 2) maintaining existing, or restoring previously dredged, depths in existing navigational channels, turning basins, vessel berthing and mooring areas, and boat launching ramps; 3) in open coastal waters, other than wetlands, including streams, estuaries, and lakes, new or expanded boating facilities and the placement of structural pilings for public recreational piers that provide public access and recreational opportunities; 4) incidental public service purposes, including but not limited to, burying cables and pipes or inspection of piers and maintenance of existing intake and outfall lines; 5) mineral extraction, including sand for restoring beaches, except in environmentally sensitive areas; 6) restoration purposes; and 7) nature study, aquaculture, or similar resource dependent activities (CCDP 2.4).

Prior to Project Approval of site-specific projects, the Port/City will conduct preliminary environmental review of alternatives per paragraph VII above.

VIII. *Riparian Habitat or Sensitive Vegetation Communities.* Prior to the commencement of grading for development in each phase that impacts riparian habitat or sensitive vegetation communities within Port jurisdiction, or prior to the issuance of any clearing and grading permits withing the City's jurisdiction that would affect riparian habitat or sensitive vegetation communities (MMRP 4.8-10, 4.8-11):

A. The Port or Port tenants (in Port jurisdiction), as appropriate, shall prepare and initiate implementation of a restoration plan for impacts to riparian habitat and sensitive vegetation communities in accordance with the mitigation requirements presented in EIR Table 4.8-6. Prior to the commencement of Phase I grading that impacts riparian habitat or sensitive vegetation communities, the Port shall coordinate with the wildlife agencies for the preparation and approval of a detailed restoration plan within the Port's jurisdiction. The plan will be prepared by a qualified biologist and approved by the Port. The guidelines for this plan shall be developed in consultation with the regulatory agencies (MMRP 4.8-10).

B. The project developer(s) in City jurisdiction shall acquire mitigation credits or prepare and initiate implementation of a restoration plan for impacts to riparian habitats and sensitive vegetation communities in accordance with the acreages identified in EIR 4.8-7. Mitigation credits shall be secured in a City-approved mitigation bank, or land acquisition shall be provided at an approved location. Verification of mitigation credits or a restoration plan shall be provided to the City for review and approval. Development of a detailed restoration plan shall be done in consultation with the regulatory agencies and implemented to the satisfaction of the City and the regulatory agencies (MMRP 4.8-11).

C. For both City or Port jurisdiction, the plan shall summarize the approach taken to avoid and minimize impacts to sensitive habitats, detail the target functions and values, and address the approach to restoring those functions and values. Typically, the restoration plan shall detail the site selection process; shall propose site preparation techniques, planting palettes, implementation procedures, and monitoring and maintenance practices; and shall establish performance criteria for each mitigation site. Typical success criteria may include percent canopy cover, percent of plant survival, and percent of native/non-native canopy cover. A minimum five-year maintenance and monitoring period shall be implemented following installation to ensure each area is successful. The restoration plan shall address monitoring requirements and specify when annual reports are to be prepared and what they shall entail. Qualitative and quantitative assessments of the site conditions shall be included. If the mitigation standards have not been met in a particular year, contingency measures shall be identified in the annual report and remediation will occur within three months or start of the growing season (MMRP 4.8-10, 4.8-11).

    1. For Port jurisdiction, the Port shall be responsible for ensuring that all success criteria are met to the satisfaction of the Port in consultation with the regulatory agencies (MMRP 4.8-10).

D. Prior to initiating any construction activities in Port jurisdiction or issuance of any clearing and grubbing or grading permits in City jurisdiction that would affect riparian habitat or sensitive vegetation communities, including clearing and grubbing associated with program-level phases, an updated project-level assessment of potential impacts shall be made, based on a specific project design (MMRP 4.8-10, 4.8-11).

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1. In Port jurisdiction, the Port or project developer(s), as appropriate, shall retain a qualified, Port-approved biologist, to update appropriate surveys, identify the existing conditions, quantify impacts, and provide adequate mitigation measures to reduce impacts to below a level of significance. This updated assessment shall be submitted to the Port for review and approval (MMRP 4.8-10).
2. In City jurisdiction, the project developer(s) shall retain a City-approved biologist to update appropriate surveys, identify the existing conditions, quantify impacts, and provide adequate mitigation consistent with the City's MSCP Subarea Plan. This updated assessment shall be submitted to the City for review and approval (MMRP 4.8-11).

The requirements as noted above in paragraph VIII shall be implemented in compliance with the MMRP.

IX. *MSCP Species Permit.* Prior to issuance of any clearing and grubbing or grading permits within the jurisdiction of the City, the project applicant within the City's jurisdiction shall be required to obtain a Habitat Loss and Incidental Take (HLIT) permit pursuant to Section 17.35 of the Chula Vista Municipal Code for impacts to Covered Species and Vegetation Communities protected under the City's MSCP Subarea Plan. In addition, the MSCP requires additional protective measures for the western burrowing owl (MMRP 4.1-4, 4.8-2, 4.8-5, 4.8-11).

The requirements as noted above in paragraph IX shall be implemented in compliance with the MMRP.

X. *Wetland Ponds In Otay District.* At the time of adoption of the CVBMP, the seasonal ponds designated "Former Industrial Areas in Process of Remediation" on O-1 and O-4 have been identified as wetland habitat. These areas will be preserved and infrastructure rerouted to preserve the resource. Site-specific studies to assess the extent and quality of natural resources on the site will be required at the time development is proposed (CCDP 2.7).

Prior to Project Approval of site-specific construction documents, the Project Proponent shall conduct surveys in compliance with paragraph X above.

A. The area around the existing wetlands will be considered, if necessary, as a site for mitigation for the loss of wetlands elsewhere or as part of adaptive management. The removal of the rock revetment wall between these wetlands and the J Street Marsh to provide a better wetland/upland transition may also be considered to provide future wetland mitigation or adaptive management.

XI. *Impacts to Environmentally Sensitive Habitat Areas (ESHAs).* Impacts to native habitat that does not constitute ESHA that cannot be avoided through the implementation of siting and design alternatives shall be fully mitigated, with priority given to on-site mitigation. Off-site mitigation measures shall only be approved when it is not feasible to fully mitigate impacts on-site or where off-site mitigation is more protective. Mitigation for impacts to native habitat shall be provided at a 3:1 ratio (CCDP 5.19). If located in or adjacent to ESHA, new development shall include an inventory conducted by a qualified biologist of the plant and animal species present on the project site. If the initial inventory indicates the presence or potential for sensitive species or habitat on the project site, a detailed biological study shall be required. Sensitive species are those listed in any of three categories: federally listed, state listed or designated species of special concern or fully protected species, and California Native Plant Society (CNPS) categories 1B and 2 (CCDP 5.13).

Prior to Project Approval of site-specific construction documents, the Project Proponent shall conduct surveys in compliance with paragraph XI above. Surveys shall analyze design alternatives that minimize impacts and determine appropriate locations for required mitigation with a preference for on-site mitigation.

XII. *Definition of ESHA.* An ESHA means any area in which plant or animal life or their habitats are either rare or especially valuable because of their special nature or role in an ecosystem, and which could be easily disturbed or degraded by human activities and developments. The following areas shall be considered ESHA, unless there is compelling site-specific evidence to the contrary (CCDP 5.9):

A. Any habitat area that is rare or especially valuable from a local, regional, or state-wide basis.

B. Areas that contribute to the viability of plant or animal species designated as rare, threatened, or endangered under state or federal law.

C. Areas that contribute to the viability of species designated as Fully Protected or Species of Special Concern under State law or regulations.

D. Areas that contribute to the viability of plant species for which there is compelling evidence of rarity, for example, those designated by the CNPS as "1b" (rare or endangered in California and elsewhere), such as Nuttall's scrub oak or "2" (rare, threatened or endangered in California but more common elsewhere), such as wart-stemmed ceanothus.

ESHA were identified as part of the environmental review process for the CVBMP, and are presented in Map C-1.

Prior to Project Approval of site-specific project plans, the Port/City will review and approve studies prepared by the Project Proponent or Port/City environmental consultant per paragraph XII above.

XIII. *Coastal Sage Scrub on Berm.* At the time of adoption of the CVBMP, the Coastal Sage Scrub on the berm in the S-1 and S-2 parcel areas and the non-native grasslands located in various locations within the CVBMP footprint were not identified as ESHA. Site-specific studies to assess the extent and quality of natural resources on a site will be required at the time development is proposed (CCDP 5.11).

Prior to Project Approval of site-specific project plans, the Port/City will review and approve studies prepared by the Project Proponent per paragraph XIII above

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XIV. *Habitat Buffer Areas in Sweetwater District.* Phase I Signature Park improvements (including development of Parcel SP-2, within the Transition Buffer Areas and Limited Use zones of parcel SP-1, and the fencing of the No-Touch Buffer Area of Parcel SP-1) will be completed, prior to the issuance of Certificates of Occupancy for projects developed on either Parcel H-3 or H-23 and after any additional necessary environmental review. The public participation process for the design of the park will be completed prior to District staff seeking Concept Approval from the Board of Port Commissioners (Settlement Agreement 7; CCDP 18.2) (refer to Map 2-1).

Prior to the Certificates of Occupancy for H-3 or H-23, the Port and City shall complete the Phase I Signature Park Improvements per paragraph XIV above. The Port will hold public workshops inclusive of the Bayfront Cultural and Design Committee to review the park concept design.

Objective 2.2-2

Long-term Conservation. Provide long-term conservation and enhancement of habitat acreage and values within the footprint and WHAs.

I. *Wetland Habitat Values Protection.* The NRMP will promote, at a minimum: long term protection, conservation, monitoring, and enhancement of wetland habitat with regard to gross acreage as well as ecosystem structure, function, and value (Settlement Agreement 3.2.1.1; CCDP 1.3(a); MMRP 4.8-7).

This NRMP promotes these goals.

A. Promote ecosystem structure, function, and value that includes connections with appropriate adjacent habitats, including wetland/upland and wetland/bay transitions.

II. *Habitat Enhancement and Priorities.* Include habitat enhancement objectives and priorities (CCDP 1.4). The biological productivity and the quality of wetlands shall be protected and, where feasible, restored (Settlement Agreement 4.4.6.6; CCDP 2.1).

This NRMP includes habitat enhancement objectives and priorities.

III. *Marine Nursery and Bay-estuarine Fishes.* Protect fish nursery productivity and the unique assemblage of bay-estuarine marine species, their abundance and diversity. Target clear and specific functions for marine life in enhancement planning and implementation through the use of conservation planning species as a measure of success. Refer to Section 7.0: Moving Forward: Implementation of the NRMP, Monitoring for Adaptive Management, Addressing SLR, and Future Funding.

Map 2-1. Buffer Areas and the Chula Vista Bayfront Master Plan footprint.

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A. This NRMP recognizes the important interconnection between the ocean, bay and estuarine environments. The transfer of nutrients, sediment and freshwater between the marine, bay and estuarine environments is critical for the health of this interlinkage of ocean, bay and estuarine systems, and the dynamics of energy and movement among biotic and abiotic elements of the system. The transfer of energy at the mouth of the bay, or estuarine/riverine system to the ocean holds special characterization creating eddies, currents and shoals augmenting ocean currents and acting as a biological (larval) transport system connecting bays, estuaries and the ocean. These energy systems create a special harmonic that leads to optimal functionality in the near shore. There is an augmentation of the littoral cell transport system for sand and sediment along beaches and the near shore in the coastal zone.

IV. *Habitat Enhancement Objectives.* Establish enhancement objectives for habitat features and complexity that favor native species reproduction, growth and biodiversity. Seek grant funding to enhance habitat size and complexity to support the natural life cycle functions of native upland flora and bay-estuarine dependent fish and wildlife. Attributes to be targeted are appropriately warm, shallow, quiet water with adequate tidal exchange; clean water and sediment; broad intertidal shorelines with gentle slopes connecting to upland refugia to provide protection during high tides, tidal surges, and sea level rise; islands; eelgrass; algae and emergent vegetation; a range of estuarine salinity conditions; fine sediment; and complex secondary microchannels. As a general principle, topographic and vegetation complexity with maximum edge habitat fosters productivity and biodiversity. For example, certain estuarine fish can shelter in secondary channels, invertebrate burrows, or attach eggs to macroalgae or emergent vegetation.

A. To protect the natural resources in the Chula Vista Bayfront one strategy is to look at conservation planning species or species groups that represent habitat conditions that support the south bay's core values (Section 1.3, Appendix C.2.1). The development of specific habitat objectives and priorities for assessing the effects of sea level rise, and planning restoration, and enhancement would consider the life cycle needs of these species. Refer to Section 7.0: Moving Forward: Implementation of the NRMP, Monitoring for Adaptive Management, Addressing SLR, and Future Funding.

B. Establish baselines for marine and tidal habitats area, function, and value. In addition to the standards described above, the NRMP will include establishment of baseline conditions (Settlement Agreement 4.4.6.5; CCDP 1.4).

1. Baseline conditions for the area, function, and value of marine and tidal habitats are defined within the CVBMP footprint, and for adjacent WHAs in this NRMP as of its issue date. Refer to Map 1-1, Map 1-2, and Map 1-6 for a view of these areas. Map 7-1, Map 7-2, Map 7-3, Map 7-4, Table 7-1, and Table 7-2 include depictions and details regarding their habitat acreage extents. For additional project work to describe these baseline conditions, please refer to Objective 2.2-3.I.A. below, and Section 7.0: Moving Forward: Implementation of the NRMP, Monitoring for Adaptive Management, Addressing SLR, and Future Funding.

Goal

Habitat Quality Improvement. *The quality of habitats in the CVBMP footprint and WHAs is protected and enhanced to its highest potential for supporting fish, wildlife, and flora that are indicators of a healthy ecosystem and the focus of conservation.*

Objective 2.2-3

Habitat for NRMP Conservation Planning Species. Establish baseline conditions and targets for habitat that support the NRMP conservation planning species to reflect and provide for their needs as opportunity arises.

I. Consider using conservation planning species to develop enhancement designs and success criteria. Conservation planning species, or species groups, that are dependent on the south bay conditions can add an important level of detail to a program of monitoring successful habitat enhancement or restoration. They help relate physical, chemical, and structural features to specific life history needs in its local use of the bay. The role of particular habitats or environmental factors may go undetected if at least some species are not examined at a fine, life-history scale. For example, the mudflat foraging conditions of tall-legged shorebirds differ from those with short legs. Refer to Section 7.0: Moving Forward: Implementation of the NRMP, Monitoring for Adaptive Management, Addressing SLR, and Future Funding.

   A. Describe baseline conditions cost-efficiently by integrating as shown in maps and tables in Section 7.0: Moving Forward: Implementation of the NRMP, Monitoring for Adaptive Management, Addressing SLR, and Future Funding and in Appendix C: Setting:

      1. Existing bay datasets, especially long-term sets, such as that of the long-term fish surveys (Port-Navy), avian surveys (Port-Navy); bathymetric data; Regional Harbor Monitoring Program, and other Port, Navy, university studies, LIDAR elevation data available from the county, and Audubon Christmas bird counts.
      2. Project-specific data sets.
      3. On an as-need basis, access new datasets as they are developed using broadly accepted and standardized methods of evaluating wetland habitat value, such as the California Rapid Assessment Method (CRAM). It is generally most reliable to monitor abiotic factors that relate to habitat value for the conservation planning species, rather than monitor for status or trends in the species themselves.
      4. Ecosystem service indicators as described in Chapter 7.

II. For upland transitions, the conditions for and presence of upland transition species are improved, where practicable, above pre-CVBMP development levels for:

   A. Flora: salt-tolerant types.

   B. Native pollinators.

   C. Fauna characteristic of upland areas adjacent to the bay shore.

III. For salt marsh, the marsh condition and the presence of salt marsh-dependent species are improved, where practicable, above pre-CVBMP development levels, as evaluated by the CRAM or a similar aquatic assessment method. Examples of conservation planning species could be curlews, or herons and rails as a group.

IV. For intertidal flats, mudflat condition is improved in quality, where practicable, above the pre-CVBMP development functional condition, as evaluated by CRAM, periodic avian and fish surveys, and Regional Harbor Monitoring Program (RHMP) and Southern California Coastal Water Research Project (SCCWRP) routine data and special studies programs (for invertebrates). Other ways to evaluate functional value are:

   A. Residence time of fish and shorebirds in mudflats (relates to usability of intertidal zone for life needs).

   B. Abundance of fish endemics as a group: gobies (arrow, shadow), deepbody anchovy, and slough anchovy (based on periodic baywide fish surveys which includes survey in habitats of the south bay).

   C. Migratory connectivity shorebirds: The consequences of habitat loss from sea level rise is believed to be magnified for shorebird populations, due to bottlenecks along their migratory pathways (Iwamura et al. 2013). Examples to consider as a group are: godwits, western sandpipers, curlew, phalarope, long-billed curlew, red knot (National Shorebird priority), or shorebirds as sub-guilds.

   D. Wetland invertebrates: ghost shrimp/California horned snail burrows, crab burrows, and predatory insects such as the mudflat tiger beetle.

V. *Continue to monitor nursery stock and endemics.* For subtidal marine life, total nursery stock and diversity of species are stable or improved, where practicable, above baseline levels. Consider monitoring the presence and abundance of significant nursery stock for all National Marine Fisheries Service (NMFS) trust resources and of endemic southern California estuarine species, by taking advantage of existing baywide fish surveys conducted periodically by the Port and Navy.

   A. Nursery Stock: Larval silversides, California halibut, yellow-fin croaker, giant kelpfish, spotted sand bass, and barred sand bass as reported in periodic fish surveys.

   B. Eelgrass and estuaries are designated by NMFS as Habitat Areas of Particular Concern (HAPCs), which are a subset of Essential Fish Habitat. under the Pacific Coast Groundfish Fishery Management Plan (FMP).The California scorpionfish is a NMFS trust resource under this FMP. The Pacific sardine is a NMFS trust resource under the Coastal Pelagic Species FMP. Other commercial fisheries supplied by south bay are: bonefish, shortfin corvina, striped mullet, California halibut, kelp bass, and barred sand bass.

   C. Twelve fish species endemic to southern California estuaries, including: deepbody anchovy, slough anchovy, arrow goby, California killifish, bay blenny, cheekspot goby, spotted sand bass, shadow goby, and bay pipefish.

   D. Production of Fish for Avian Foraging: Certain schooling fishes form an important forage base for rare seabirds. These include deepbody anchovy, slough anchovy, northern anchovy, California halfbeak, topsmelt, jacksmelt, and shiner perch. The most abundant in the south bay are slough anchovy, topsmelt, and shiner perch.

   E. Use of subtidal resources by migratory waterfowl and wading shorebirds. Black brant, lesser scaup, and dowitchers as reported in baywide periodic avian surveys.

   F. Presence of green sea turtles.

2.3 Improving Habitat and Community Connections

Goal

Quality of Habitats and Communities in Connected Areas. *The quality of WHAs adjacent to the CVBMP footprint and in other connected areas to the CVBMP footprint is protected and enhanced to its highest potential for supporting fish, wildlife, and flora that are indicators of a healthy ecosystem and the focus of conservation.*

Objective 2.3-1

Resilient Habitats Through Connectivity. Promote resilience to sea level rise, and to other threats, for CVBMP footprint and WHA habitats through protecting, restoring, and enhancing marine, intertidal, salt marsh, and upland transition connections.

I. *Protect and improve habitat connections over time.* Connections to incoming stream habitats, such as riparian, freshwater marsh, and brackish marsh to tidal communities promote functions of native biodiversity and productivity, and other ecosystem services, including assimilative capacity for water runoff and carbon sequestration.

II. *Enhance Connectivity Between the CVBMP footprint and the adjacent Refuge areas and sensitive habitats.* Contour or otherwise prepare the No Touch Buffers to facilitate future potential marsh migration in Sweetwater and Otay Districts. Over time, establish a habitat corridor/connection via redesign for E Street cross-over, allowing for movement of species between the CVBMP footprint and the NWR.

III. *J Street Marsh and Salt Pond Connectivity.* Improve the habitat connection between J Street Marsh and salt ponds, with NWR staff input, as predator control may be a concern. Look into the potential to maximize the amount of intertidal connection between J St. Marsh and salt ponds/intake/discharge channels.

IV. *J Street Channel Enhancement.* Consider the elimination of the bridge over the J Street Channel and the road it leads to, so that the wetlands there can be expanded and connected with the shoreline and the J Street Channel to enhance habitat value. Implement as a project mitigation opportunity.

V. *Fish Connections.* Where possible and effective, provide habitat connectivity for fish and wildlife movement and for migration during the stress of climate change adaptation, such as for species uniquely dependent on access to eelgrass, estuaries, marshes, stream mouths, and soft (not rocky) shores. Connectivity includes some brackish water, and upstream watershed elements.

VI. *Connectivity Indicators.* Consider connectivity for these conservation planning species:

   A. Fish habitat connections: presence of striped mullet, and California halibut

   B. Upland transition host plants and presence of migratory pollinators (periodic vegetation inventory).

   C. Migratory shorebird "stepping stone" functional groups (short-medium legged shorebirds, long-legged shorebirds)

   D. Avian habitat connections to upland.

   E. Recovery of salt marsh connections to intertidal mudflat, and connection of marsh fragments

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VII. *Tidal Connectivity by Removing Lagoon Drive and Reconnecting to the F & G St. Marsh.* As a future and separate project, the District will investigate, in consultation with the USFWS, the feasibility of restoring an ecologically meaningful tidal connection between the F & G Street Marsh and the upland marsh on parcel SP-2, consistent with USFWS restoration concepts for the area. At a minimum the investigation will assess the biological value of tidal influence, the presence of hazardous materials, necessary physical improvements to achieve desired results, permitting requirements, and funding opportunities for establishing the tidal connection. This investigation will be completed prior to the initiation of any physical alteration of SP-2, F Street, and/or the F & G Street Marsh. In addition, once emergency access to the CVBMP project area has been adequately established, such that F Street is no longer needed for public right-of-way, the District and City will abandon/vacate the F Street right-of-way for vehicular use, but may reserve it for pedestrian and bicycle use if ecologically appropriate (Settlement Agreement 4.4.5; CCDP 14.5).

The Port will conduct an investigation into the feasibility of restoring the tidal connection between the F&G Street Marsh with the seasonal wetlands.

A. It is important to maintain and enhance where possible connectivity of impacted and degraded wetlands to enhance ecosystem services, including biodiversity, filtration, carbon sequestration etc., due to the habitat fragmentation that has occurred over time.

VIII. A pedestrian bridge is proposed to create a linkage over a tidal inlet associated with the F & G Street Marsh. Tidal habitats should be treated as ESHA and the bridge crossing must be designed to enhance the habitat values present and reduce erosion. This bridge span must be extended and the existing incised channel slope should be cut back, reducing the slope and then creating additional salt marsh habitat on the created floodplain. Site-specific studies to assess the extent and quality of natural resources at the site will be required at the time development is proposed (CCDP 5.12).

Prior to Project Approval, the Port/City will review the site-specific development proposal for compliance with the above.

IX. The Port/City will utilize as appropriate the California Coastal Commission's Sea level Rise Policy Guidance (2015).

Objective 2.3-2

Cooperative Agreements for Neighboring Habitats. Cooperate with entities managing nearby areas, adjacent to and/or influencing habitat conditions of the CVBMP footprint and WHAs to foster a resilient estuarine system, based on conservation indicators.

I. Cooperative Agreements for Habitat Management and Protection. The District will exercise diligent and good faith efforts to enter into the following cooperative agreements with the USFWS or other appropriate agency or organization (Settlement Agreement 4.4.1; CCDP 14.1).

A. An agreement providing for the long-term protection and management of the sensitive biological habitat, running north from the South Bay Boatyard to the Sweetwater River Channel (known as the Sweetwater Tidal Flats), and addressing educational signage, long-term maintenance, and additional protection measures such as increased monitoring and enforcement, shared jurisdiction and enforcement by District personnel with legal authority to enforce applicable rules and regulations ("District Enforcement Personnel"), shared jurisdiction and enforcement by District Enforcement Personnel and other appropriate Resource Agencies of resource regulations, and placement of enforcement signage. Subject to the cooperation of the applicable Resource Agency, such cooperative agreement will be executed prior to the Development Commencement of any projects subject to District's jurisdiction within the Sweetwater or Harbor Districts (Settlement Agreement 4.4.1.1; CCDP 14.1(a)).

B. An agreement for long-term protection and management of the J Street Marsh and addressing additional protective measures such as educational signage, long-term maintenance, and monitoring and enforcement by District Enforcement Personnel and enforcement of resource regulations by District Enforcement Personnel and other Resource Agencies and placement of enforcement signage. Subject to the cooperation of the applicable Resource Agency, such cooperative agreement will be executed prior to the Development Commencement within the Otay District (Settlement Agreement 4.4.1.2; CCDP 14.1(b)).

C. If either of the cooperative agreements contemplated above is not achievable within three years after Final EIR certification, the District will develop and pursue another mechanism that provides long-term, additional protection and natural resources management for these areas (Settlement Agreement 4.4.1.3; CCDP 14.1(c)).

The Port will consult USFWS with the goal of creating a cooperative agreement in accordance with the above requirement.

II. Working with USFWS or other appropriate agency or organization, develop early actions to forestall or minimize the severity of the sea level rise impacts to area resources. Examples could be to fast track the South Bay Power Plant restoration, improving connectivity of the F&G Street marsh to the on-site seasonal marsh, placing structures to retain or build up fine sediment, or many other possible actions (refer Appendix E: Potential Concepts for "Beyond Compliance" Conservation). The Port/City will utilize as appropriate the California Coastal Commission's Sea level Rise Policy Guidance (2015).

Goal

Habitat Quality Enhancement through Improved Watershed Function. *The long-term quantity and quality of marine and wetland habitats are enhanced through improvement in the natural watershed functions supporting them.*

Objective 2.3-3

Re-establish and Improve Watershed Connections. Design and maintain connections between the project area and the watershed to provide water filtering and other functions that benefit fish and wildlife.

This objective is addressed in Section 3.2.

2.4 Sea Level Rise and Buffer Areas

Goal

To Promote the Goal of No Net Loss of Habitat Value Due to Climate Change. *Assure no net loss of marine, wetland, and upland transition function and values, due to sea level rise and other effects of climate change, within the CVBMP footprint and WHAs.*

Objective 2.4-1

No Net Loss Due to Climate Change. Assure that the acreage, quality, function, and variety of habitats used by coastal shore, estuarine-, and eelgrass-dependent fish and wildlife within the WHA consistent with NRMP Controlling Documents, continue into the future with no net loss due to climate change.

I. *Managed Retreat.* Facilitate retreat as sea level rises in the Sweetwater and Otay Districts in a manner that will promote wetland and shoreline functions and values.

   A. Bayfront plans should accommodate habitat for marsh to migrate both vertically and horizontally. Horizontal migration may be constrained by hardened infrastructure, hence vertical migration will be critical to maintain the optimal structure and function of the ecosystem.

   B. Identify specific areas where habitat migration could occur within the Chula Vista Bayfront.

II. *Upland Transitions to Support Sea Level Rise Adaptation.* Upland areas in the Sweetwater and Otay Districts will be adaptively managed to provide additional habitat or protection to create appropriate transitional habitat, during periods of high tide, and taking into account future sea level rise (Settlement Agreement 3.2.1.3; CCDP 1.3(a), 1.3(b), 3.3).

> *Pursuant to this NRMP, the buffer areas will be adaptively managed per paragraph II above.*

III. Consider adding appropriate type of soil or sediment to elevate wetlands and mudflats, when needed to preserve area, functions, and values in spite of sea level rise.

IV. The Port/City will utilize as appropriate the California Coastal Commission's Sea Level Rise Policy Guidance (2015).

Goal

Multi-purpose Protective Buffer Areas. *Plan and manage the Buffer Areas and transition zones to maximize the protection of natural resources, allowing for habitat migration due to sea level rise and opportunities for human connection with nature.*

Objective 2.4-2

Habitat Migration. Design and manage the No-Touch, Limited Use, and Transitional Use Buffer Areas to accommodate habitat migration, due to sea level rise, as described in CCDP 3.1.

I. *Comply with CCDP obligations related to Sea Level Rise Buffer Areas.* Uses and development within buffer areas shall be limited to minor passive recreational uses, with fencing, desiltation or erosion control facilities, or other improvements deemed necessary to protect the habitat, to be located in the upper (upland) half of the buffer area; however, water quality features required to support new development shall not be constructed in wetland buffers. All wetlands and buffers identified and resulting from development and use approval shall be permanently conserved or protected through the application of an open space easement or other suitable device. All development activities, such as grading, buildings and other improvements in, adjacent to, or draining directly to a wetland must be located and built so they do not contribute to increased sediment loading of the wetland, disturbance of its habitat values, or impairment of its functional capacity (CCDP 3.1).

Prior to Project Approval of site-specific development proposals, the Port/City shall comply with paragraph I above.

A. In light of habitat migration due to sea level rise, review Buffer Areas, as necessary, so as to maintain a buffer between areas of human activity and sensitive fish and wildlife habitat, as practicable in light of existing and planned development. Consider sufficient buffering of sensitive habitat to protect its value for fish and wildlife, and to accommodate expected inundation and flooding from sea level rise. Refer also to Appendix D: Sea Level Rise, Climate Change, and Carbon Sequestration Assumptions.

B. Evaluate sea level rise progression. Compare actual rise with predicted levels to determine if early actions may be appropriate to forestall detrimental impacts of sea level rise.

C. Alter the design, as necessary, of the Buffer Areas as sea level rises.

D. As needed, provide for flexibility in Buffer Areas configuration based on sea level rise modeling using updated guidelines (local, state, federal) or peer-reviewed projections.

E. Identify and evaluate any other areas inland of the Buffer Areas that may be suitable and could be planned to accommodate habitat migration.

II. *City of Chula Vista Compliance for Sea Level Rise and Storm Drains.* Comply with City of Chula Vista requirements (for property within the City) regarding development within tidally influenced bayshore. Prior to Tentative Map Approval, or grading plan approval, ensure that: 1) the storm drain system for the project is designed to maintain at least one dry driving lane in each direction, during a 50 -year design storm that occurs at the highest high tide with a projected 1.5 feet of sea level rise; and 2) the storm drain system for the project is designed to prevent any property damage with a 100-year storm, occurring at the highest high tide with a projected 1.5 feet of sea level rise. This requirement will have a major impact on the sizing of the water treatment basins between the roads and the habitat areas. If this requires a basin area that is either impractical or too costly, consideration should be given to relaxing this requirement for specific locations. Implementing the City's requirement should not be done at the expense of water quality or erosion damage in the habitat areas.

A. In concert with this, the Port/City will utilize as appropriate the California Coastal Commission's Sea Level Rise Policy Guidance (2015).

III. Protect and maximize ecosystem functions of habitats and species, where practicable, to provide sustainable cultural, subsistence, recreational, and commercial benefits in a changing climate.

A. *Maintain Ecosystem Function Through Habitat Features.* Enhance habitat features, where necessary and practicable, to maintain ecosystem function and resiliency to climate change. Restore habitat quality elements that improve each area's ecosystem function and capacity to adapt to sea level rise, as project opportunities come up.

B. Use the life needs of conservation planning species groups to develop specific management approaches, such as elevations in relation to the tide, to address critical climate change impacts, where necessary and practicable.

Objective 2.4-3

Ensure Buffer Areas Add Habitat Value and Other Ecosystem Services. Design designated Buffer Areas to contain variable topography, complex edges and species composition so that they will, in the near term, function as intertidal and natural upland transition habitat, while adequately protecting adjacent sensitive resources from sea level rise.

I. Design Buffer Areas with appropriate vegetation structure to support intertidal wetland-dependent, native species that need upland refugia, and as transition zones to landscaped areas and for sea level rise.

II. Consider grading and contouring Buffer Areas to allow for future cordgrass establishment as sea level rise occurs.

III. Habitats in Buffer Areas should function as refugia by managing interaction with human activity. Provide upland transition and high tide refugia with vegetation cover, where practicable.

IV. Plant palettes used for the Buffer Areas should be restricted to native plants of the lower, middle and upper salt marsh and the marsh/upland transition of coastal southern San Diego County. To the maximum extent practicable, plant selection and placement should be pollinator-friendly for bats, birds, and insects and include larval host plants. Manage the Buffer Areas to support special status-flora species (refer to Appendix F: Comprehensive Plant List).

V. Develop an invasive plant management plan for the Buffer Areas, distinct from the invasive plant management plan for the built environment. The former would have a higher level of restrictions, due to the presence of sensitive habitat.

A. A prohibited-plant list should be included for each specific area. No areas should include invasive species as identified by the California Invasive Plant Council (Cal-IPC 2006).

B. Develop a volunteer program for hand-weeding, within the Buffer Areas.

C. Provide specific criteria for the use of herbicides, consistent with the requirement to use Integrated Pest Management (IPM).

VI. Avoid creating *sinks*, where practicable, through habitat creation or zoning of human activity. For example, drawing in sensitive wildlife to isolated habitat fragments without enough connectivity may increase their isolation and make them vulnerable to predators.

VII. Prevent unnaturally abundant raptor predation on special status species of the salt marsh by restricting line-of-sight perches in the Buffer Areas (refer to Section 4.0: A Wildlife Friendly Urban-Wildland Interface).

Objective 2.4-4 *Habitat Connectivity.* Plan for the greatest degree of habitat connectivity throughout the Buffer Areas and into the parks and open space areas so that they are wildlife-friendly.

I. Work with planners and designers to identify opportunities as they arise for benefiting fish and wildlife through improved connections among buffer, open space, and park areas.

Objective 2.4-5 *Buffer Area Use.* Ensure the primary purpose of the Buffer Areas is habitat, and the secondary purpose is to support ecological services/recreation/education.

I. The Signature park designer will consider use of shorter spur trails (as opposed to loop trails) within the Buffer Areas and integrate with the main trail in Signature Park. Limit trails in the Buffer Areas, minimizing impacts to wildlife, while facilitating wildlife viewing.

2.5 Effective Restoration to Meet NRMP Goals and Objectives for Climate Change Resilience and Habitat Value

Goal ***Restoration for Resilience.*** *Promote effective restoration to meet NRMP goals for climate change resilience and habitat value.*

Objective 2.5-1 *Resilient Habitats Providing Ecosystem Services.* Optimize ecosystem services provided by habitats and the resilience of these services to climate change.

I. To the extent feasible, implement practices to reduce and/or sequester emission of carbon dioxide and other climate change gases in the CVBMP footprint and adjacent WHAs. Consider carbon sequestration value of habitats, such as salt marsh, when planning and funding habitat work. Carbon sequestration occurs at a very high level in salt marsh soils, and somewhat less in mudflats and in upland vegetation. This should be part of the equation when considering habitat goals and optimizing mitigation strategy (refer to Appendix D: Sea Level Rise, Climate Change, and Carbon Sequestration Assumptions).

II. Optimize opportunities to implement the Port and City Climate Action Plans.

III. Require that public access is sited, designed, and managed to avoid potential for significant adverse impacts from sea level rise and shoreline flooding, or is designated to withstand intermittent flooding.

IV. Improve resilience of existing habitats by protecting, restoring, and enhancing marine, intertidal, salt marsh, and upland transition elements that promote functions of native biodiversity and productivity, and other ecosystem services, including assimilative capacity for water runoff and carbon sequestration whenever possible.

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A. As project opportunities arise, restore habitat quality elements that improve each area's ecosystem function and capacity to adapt to sea level rise. Enhance habitat size and complexity to support the natural life cycle functions of native flora and bay-estuarine fish and wildlife. Attributes to be targeted are warm, shallow, quiet water with adequate tidal exchange; clean water and sediment; broad and connected intertidal shorelines with gentle slopes; eelgrass; emergent vegetation; a range of estuarine salinity conditions; fine sediments; secondary microchannels, and upland refugia during tidal surges. Topographic and vegetation complexity foster productivity and biodiversity. For example, certain estuarine fish can shelter in secondary channels, invertebrate burrows, or attach eggs to macroalgae or emergent vegetation.

B. In partnership with other jurisdictions, look to provide habitat connectivity for fish and wildlife movement and for migration during the stress of climate change adaptation, such as for species uniquely dependent on access to eelgrass, estuaries, marshes, stream mouths, and soft (not rocky) shores. Connectivity includes some brackish water, and upstream watershed elements.

V. Create Transitional Gradients.

A. When site preparation is done in the Sweetwater and Otay Districts, re-contour the slope to prepare for sea level rise in the Buffer Areas.

B. Re-contour the slope of the shore along Sweetwater and Otay Districts, where practicable, to allow for high tide transitional habitat for improved wildlife value as sea level rise occurs.

C. Transitional native habitats may include cordgrass, estuary seablite *(Suaeda esteroa)*, maritime succulent scrub/boxthorn, coastal sage scrub, beach and beach wrack, moist grassland, grassland/ephemeral wetland complex, or inland dunes.

D. Consider providing appropriate vegetation structure to support fauna that are conservation planning species.

Objective 2.5-2

Make the Most of Built Shorelines and In-water Structures. Maximize habitat quality of necessary built shore structures while allowing public access and optimizing other ecosystem services.

I. Promote soft infrastructure.

A. Soften and Connect Shorelines. Provide soft-sediment and connected shorelines wherever possible and avoid the use of armoring that is not natural to the bay, has relatively low habitat value for bay-estuarine dependent species, and can harbor invasive species.

B. Evaluate the use of bio-engineered materials as an alternative to riprap in the Harbor District.

C. Review designs for integrating soft shoreline protection into hard shoreline protection structures, whenever feasible. Where armoring is demonstrably needed, integrate hard and soft stream channel or wave/tidal energy solutions, such as living banks or living levees.

D. Evaluate subtidal levees as a locally meaningful management strategy.

E. The Port/City will seek grant funding to promote the use of soft infrastructure.

Objective 2.5-3 *Ensure Built Structures Promote Water Quality and Habitat.* For structures interfacing marine waters, apply design, engineering, and construction practices to maintain or restore physical conditions that promote native fish and wildlife, such as appropriate tidal circulation, light, substrate conditions, or sediment replenishment.

I. Where they are necessary or beneficial, design artificial structures in the intertidal and subtidal zone for improved habitat value for native organisms and other ecosystem services. Use construction designs that provide habitat function and contribute to conservation, including adapting to climate change.

   A. Design principles may include surface roughening, sinuosity, particle or feature size, tidal exposure, hardness, etc.

II. Maintain natural physical processes (such as tidal circulation), and, when feasible, implement engineering practices that promote restoration of these processes.

   A. Evaluate restoration of the South Bay Power Plant channels and determine the best manner to address the long connector levee that divides the water there.

Objective 2.5-4 *Sediment Replenishment.* Restore the functions of episodic flood and sediment replenishment supporting the bay-estuarine ecosystem, while achieving water quality improvement objectives.

I. Naturalize and invigorate Telegraph Creek and J Street Channel through processes such as sediment supply and episodic flood, consistent with functions as stormwater conveyance, which can benefit the estuarine ecosystem.

II. Consider creating a sediment management plan for restoring sediment functions for estuarine habitats.

   A. Excess dredge material from within the project area shall be tested for beach compatibility and placed on local beaches if suitable (CCDP 25.1).

   > *Prior to Project Approval of site-specific development proposals, the Project Proponent will analyze if the dredge material is suitable for beach replenishment. If suitable, dredge material shall be offered for beach replenishment provided there is a not material impact to the project.*

   B. A process for beneficial re-use of dredge material as a source for benefiting marine habitat restoration and enhancement of marine life could include, but would not be limited to the following:

      1. Identify areas where natural sediment delivery could be enhanced or improved for habitat benefit.
      2. Identify areas that may require active placement of sediment to increase resiliency to sea level rise.
      3. Determine appropriate timing of sediment placement, using location-appropriate methods and monitoring.

III. Evaluate sediment placement options for sea level rise adaptation. As sea level rise continues over time, the water depth in the area undergoing sea level rise will increase. The reduction in sediment supply to San Diego Bay that has occurred historically and is expected to continue in the future will make it difficult for ground elevations to increase via sedimentation. Sediment could be added to the CVBMP WHAs if sediment augmentation is the strategy that all managers and resources agencies agree to counter the inundation effects of sea level rise.

A. Identify suitable sediment sources that could be used in the future to increase ground elevations in areas that are being inundated by sea level rise. For example, coastal salt marsh habitat would require the identification of marsh muds or terrestrial sediment conducive for production of marsh mud (e.g., clays and silts). In addition, the sediment would have to be free of contamination that might harm the ecological receptors that would use the habitat. Potential sources of suitable sediment would include sediment dredged from within, along, and adjacent to San Diego Bay as well as sediment from the watersheds that empty into San Diego Bay.

B. Two possible methods to introduce sediment to the system include: 1) Reduce, eliminate, or apply hydromodifications in the streams and creeks that empty into San Diego Bay, especially those closest to the locations most vulnerable to habitat transition associated with sea level rise. This method could provide a more natural approach to addressing the sea level rise impact; however, the volume, timing, and placement of sediment available utilizing this method might not match the needs of the particular locations. 2) Use equipment to place sediment directly in those areas in need of sediment. There must be an even transition gradient maintained between eelgrass beds and mudflat/estuarine plain, hence sediment placement will have to be implemented to mimic natural process through bioengineering and research. This will enhance both vertical and horizontal marsh migration as sea level rises maintaining ecological stability.

Objective 2.5-5 *Restoration Priorities.* Establish restoration priorities to ensure the protection of south bay-dependent ecosystems.

I. Use conservation planning species groups (see Section 2.2: Mitigation Compliance and Improving Habitat Quality in the CVBMP Footprint and WHAs), to consider specific habitat objectives and priorities for mitigation, restoration, and enhancement.

II. *Integrate hard and soft solutions.* Where feasible, the integrity of all systems from the eelgrass bed, mudflat, tidal creek, marsh plain and transition zone should be maintained by incremental sediment deposition in conjunction with using habitat as a buffer for sea level rise.

III. For streams, consider controlling the velocity of water coming into the system by using living systems that can accommodate flooding in the corridor, in cooperation with hydrologic engineers.

IV. *Marine Habitat Restoration at the Power Plant.* The District will include an analysis of the appropriate level and method for wetland and marine life habitat restoration of the intake/discharge channels associated with the South Bay Power Plant in the environmental review document for the demolition of the South Bay Power Plant that includes below grade or in water structures (Settlement Agreement 4.4.2; CCDP 14.2).

The requirement as noted above in paragraph IV shall be implemented in compliance with the Settlement Agreement and CCDP.

Objective 2.5-6 *Multiple Benefits to Core Resource Values.* Promote restoration that benefits multiple indicators of ecosystem health rather than a single or narrow set of benefits, and that benefits the south bay's core resource value as a fish and avian nursery, migratory rest stop, and home for rare and endemic fish, wildlife, and plants.

I. The following are (preliminary) indicators of successful habitat restoration (see also Section 7 and Appendix C: Setting). Indicators should be adapted based on research and best science.

   A. Acres of habitat restored to level of quality above pre-existing functional quality, based on CRAM, Hydrogeomorphic Assessment Method, or other method. For example, enhanced complex creek networks in intertidal areas, because this maximizes the interface between marsh and water.

   B. Recovery of tidal flats, for which loss has been even greater than that for tidal marsh in southern California and San Diego Bay (Macdonald et al. 1990; Port and U.S. Navy 2013) (see Appendix C: Setting).

   C. Presence and abundance of diverse functional groups of wetland-dependent fish, wildlife, and plants.

   D. Presence and abundance of functional groups of upland transition-dependent wildlife and plants.

   E. Fine-textured, clean sediment source identified for restoration work.

Figure 2-1. Rendering of a design concept for a boardwalk.

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Figure 2-2. Rendering of a design concept for the No-Touch Buffer Area.

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3.0 Minimizing Harm to Neighboring Wetlands and Marine Waters

Vision for the Future

The watershed promotes assimilation and purification of water to adjacent wetlands. The water and sediment that flows from or through the CVBMP footprint into adjacent wetlands contributes to healthy aquatic recreation, thriving wetland and marine habitats, and healthy, consumable fish and invertebrates in the Chula Vista Bayfront area. Preventing introduction and expansion of invasive aquatic species is promoted to contribute to aquatic habitat health.

3.1 Key Messages

Protecting water quality in the CVBMP area will minimize harm to wetlands and marine waters and sustain human and wildlife health. The CVBMP project is a component of the Sweetwater River and Otay River watersheds (refer to Map 1-6), which drain into San Diego Bay (Project Clean Water 2013; San Diego Coastkeeper 2013). The Chula Vista Bayfront area strategies for protecting water and sediment quality are an important element of watershed management. In this context, they are guided by localized challenges as well as larger watershed management objectives, such as the San Diego Bay Water Quality Improvement Plan (WQIP).

The landscape, within the boundaries of each watershed, is hydrologically connected because it drains (surface and subsurface) all water it receives to a common outlet, such as the San Diego Bay (ORWMP 2006).

The approach employed here emphasizes compliance with regulations, reducing or preventing potential impacts through the use of best management practices (BMPs), monitoring, coordination and enforcement to protect and restore water and sediment quality as a component of effective watershed management.

> Watershed management planning offers a comprehensive approach to the protection, enhancement, and restoration, as well as the uses of surface and groundwater (quality and quantity), floodplains, and estuaries within a logical landscape unit (ORWMP 2006).

The CCDP call for maintenance and improvement of water quality where possible and coordination with other entities charged with watershed protection activities (CCDP 1.3(f)).

Prevention of impacts is the preferred approach to maintain the health of wetland and marine habitats. As part of this, a range of BMPs are recommended, particularly to manage stormwater runoff effectively. When prevention is not possible, minimization and treatment are second lines of defense. A number of structural and non-structural BMPs included in this plan span the range of prevention, minimization and treatment approaches that are applicable to both construction and post-construction phases:

- Structural BMPs are a subset of BMPs which detains, retains, filters, removes, or prevents the release of pollutants to surface water (MS4 Permit 2013).
- "Non-structural BMPs are activities, programs and other non-physical measures that contribute to the reduction of pollutants from diffuse sources to the drainage system" (ORWMP 2006).

Decentralized and site-based applications of these strategies helps to manage both quantity and quality of runoff. Managing stormwater appropriately can provide benefits by reducing pollution, restoring natural hydrologic function, providing habitat and contributing to a healthier environment.

As a component of the proposed watershed approach, identifying and addressing existing and emerging threats will be important to sustaining thriving aquatic habitats. Moreover, monitoring that contributes to adaptive management and is consistent with regional approaches helps to derive greater interpretive power, which supports compliance obligations. In addition, to help address sea level rise impacts, the Port/City will utilize as appropriate the California Coastal Commission's Sea Level Rise Guidance document.

This Chapter is organized as follows:

3.2 Watershed Approach
- Objective 3.2-1 Compliance
- Objective 3.2-2 Prevention
- Objective 3.2-3 Marina and boating impacts
- Objective 3.2-4 Deposition of air pollutants
- Objective 3.2-5 Watershed-level coordination
- Objective 3.2-6 BMP monitoring
- Objective 3.2-7 Enforcement

3.3 Innovative and Best Practice Site Design and Management
- Objective 3.3-1 Site design and BMPs for Stormwater and Erosion, and Sedimentation Control
- Objective 3.3-2 Stormwater treatment controls

3.4 Existing and Emerging Threats
- Objective 3.4-1 Addressing contaminants
- Objective 3.4-2 Aquatic invasive species

3.2 Watershed Approach

Goal

Employ a Watershed Approach. *Activities in the CVBMP area employ a watershed approach to maintain and improve clean water and sediment for marine life, human health and compliance with relevant regulations.*

Objective 3.2-1

Compliance. Minimize impacts to water quality within the CVBMP footprint and WHAs, San Diego Bay, adjacent habitats or watershed areas by complying with and enforcing water quality requirements in the CVBMP project area. Protect the quality of coastal waters by promoting both the protection of water quality that meets state standards, and the restoration of waters that do not meet state standards (CCDP 13.2).

For new development:

I. Comply with the RWQCB Order No. R9-2007-0001, National Pollutant Discharge Elimination System (NPDES) Permit No. CAS0108758, Waste Discharge Requirements for Discharges of Urban Runoff from the Municipal Separate Storm Sewer Systems Draining the Watersheds of the County of San Diego, the Incorporated Cities of San Diego County, and the San Diego Unified Port District (Municipal Permit) as adopted, amended, and/or modified or replaced by the RWQCB with a new Municipal Permit. The Municipal Permit prohibits any activities that could degrade stormwater quality (CCDP 13.2(a)).

A. The most current permits include: RWQCB Order No. R9-2013-0001 and NPDES Permit No. CAS0109266 (June 2013)

Prior to Project Approval for site-specific development proposals, the City/Port will approve a Storm Water Quality Management Plan (SWQMP) prepared by the Project Proponent in accordance with the BMP Design Manual. The City/Port will ensure that the Project Proponent provides sufficient documentation to demonstrate that applicable requirements of the BMP Design Manual and the current Municipal Permit will be met.

II. Comply with the District Jurisdictional Urban Runoff Management Program (JURMP) Document and the District Standard Urban Stormwater Mitigation Plan, which provides BMP requirements for new development and redevelopment (CCDP 13.2(b)).

As required by the current Municipal Permit, the BMP Design Manual is an appendix of the updated 2015 Jurisdictional Runoff Management Plan and Standard Urban Stormwater Mitigation Plan. This Manual provides guidelines for compliance with post-construction storm water requirements in the current Municipal Permit. The Port developed the BMP Design Manual to implement the requirements of the Municipal Permit.

A. General operations and housekeeping, non-stormwater management, waste handling and removal, and employee training are among the BMPs designated by the BMP Design Manual to address potential pollutants associated with major municipal events.

III. Comply with all relevant mitigation measures in the MMRP for the CVBMP project, including guidance stipulating actions and approvals required prior to issuance of permits for grading, dredge or fill (MMRP 4.5-2, 4.5-3, 4.5-4).

The requirements as noted above in paragraph III related to dewatering, spill prevention/contingency planning, and dredging shall be implemented in compliance with the MMRP.

IV. Adhere to all applicable Clean Water Act and Porter-Cologne requirements.

V. Implement the Port's WQIP (2015).

Objective 3.2-2

Prevention. Avoid actions in the CVBMP footprint that result in urban runoff and pollution of stormwater that would adversely impact or degrade water quality in San Diego Bay or watershed areas, or impair efforts of other entities for protection of the watershed (Settlement Agreement 3.2.4; CCDP 1.3(e)). Include source-control BMPs, where feasible, in all developments (CCDP 13.2).

Source control BMPs are activities, practices, and procedures (primarily non-structural) designed to prevent urban runoff pollution. These measures either reduce the amount of runoff from the site or prevent contact between potential pollutants and stormwater. Source-control BMPs are often the best method to address non-storm (dry-weather) flows (ORWMP 2006). Examples can be found in the most recent BMP Design Manual.

I. Educate residents, visitors and recreational users about ways to reduce water-quality pollution. The District shall encourage and support public outreach and education regarding the water quality impacts of development (CCDP 9 and 13.2).

An Environmental Education Program is further outlined in Chapter 6.

A. Include messaging about water quality and pest control (relative to trash management) in appropriate locations. Facilitate recycling.

B. Facilitate collection of pet waste by pet owners by providing adequate waste collection and disposal stations, with messaging to educate about the problem.

C. Stencil storm drains with images or short phrases to discourage nearby dumping of trash or other waste that could reach the Bay through the storm drain system. Encourage reporting of illegal dumping of any substance (liquids, trash, etc.). Emphasize the County Household Toxics Program for disposal of household toxics (ORWMP 2006).

D. Enforce parking restrictions for street sweeping (ORWMP 2006).

E. Per the RWQCB Order No. R9-2013-0001, if individual residential vehicle washing occurs, wash water discharge should be directed to landscaped areas or other pervious surfaces, and other practices encouraged to prevent associated pollutants from entering the storm drain system. In addition, such discharges must be controlled through statute, ordinance, permit, contract, order, or similar means (RWQCB Order No. R9-2013-0001, E.2.a.(4)(b)).

F. Encourage residents, businesses and maintenance personnel to sweep sidewalks and to comply with existing regulations for washing impervious surfaces.

SDRWQCB Basin Plan, Water Quality Objectives for Toxicity: All waters shall be maintained free of toxic substances in concentrations that are toxic to, or that produce detrimental physiological responses in human, plant, animal, or aquatic life. Compliance with this objective will be determined by use of indicator organisms, analyses of species diversity, population density, growth anomalies, bioassays of appropriate duration, or other appropriate methods as specified by the Regional Board (Sect. 3, pg. 31).

See also the California Toxics Rule [40 Code of Federal Regulations 131.38] promulgated by the U.S. Environmental Protection Agency on May 18, 2000 and the National Toxics Rule [40 Code of Federal Regulations 131.36].

II. Train landscape maintenance staff to use integrated pest management to minimize the introduction of pesticides, fertilizers, or other harmful materials used in landscape practices into coastal waters.

A. Promote water conservation practices to prevent overwatering and runoff from areas with maintained landscapes.

B. Keep lawn clippings and other landscaping waste out of gutters and streets within the CVBMP footprint (ORWMP 2006; refer to Section 4.7: Trash Management).

C. Green waste compost station to be considered for future adaptive management.

SDRWQCB Basin Plan, Water Quality Objectives for Pesticides: No individual pesticide or combination of pesticides shall be present in the water column, sediments or biota at concentration(s) that adversely affect beneficial uses. Pesticides shall not be present at levels which will bioaccumulate in aquatic organisms to levels which are harmful to human health, wildlife or aquatic organisms (Sect. 3, pg. 29).

D. The use of insecticides, herbicides, rodenticides or any toxic chemical substance that drains into WHAs or which has the potential to significantly degrade ESHAs shall be prohibited within and adjacent to ESHAs, except where necessary to protect or enhance the habitat itself, such as eradication of invasive plant species, or habitat restoration. Application of such chemical substances shall not take place during the winter season or when rain is predicted within a week of application (Settlement Agreement 4.6.3; CCDP 13.5).

(See Section 5.0: Maximum Ecosystem Services in the Built Environment and Open Space).

E. Integrated Pest Management (IPM) must be used in all outdoor, public, buffer, habitat, and park areas (Settlement Agreement 4.6.3; CCDP 13.6).

Leases, contracts, and Covenants, Conditions & Restrictions (CC&Rs) will require compliance with Board of Port Commissioners' and City policies and regulations, which include IPM.

1. The Port's IPM Program is based on regular staff training; selected use of California-friendly plant species; proper irrigation scheduling; appropriately scheduled fertilizer applications; minimal use of pesticides and herbicides; proper storage and disposal of pesticides, herbicides, and fertilizer; elimination of toxicity Category I and pesticides containing a carcinogen; elimination of toxicity Category II pesticides; identification of pests that are considered potential public health problems an the least toxic method of eliminating or controlling them; and monitoring of pest population levels to determine treatment procedures. The Port's management of pesticides, herbicides and fertilizers also includes: use of drought-tolerant native plants; use of licensed Pest Control Advisor; and use of smart irrigation systems. See also Section 5.6: Landscape Maintenance.

2. Per RWQCB Order No. R9-2013-0001, BMPs must be implemented to reduce pollutants in stormwater discharges and effectively prohibit non-storm water discharges associated with the application, storage, and disposal of pesticides, herbicides and fertilizers from both commercial areas and residential facilities, including educational activities, permits, certifications and other measures for applicators and distributors (E.5.b.(1)(d) and E.5.b.(2)(d)). The public education program component for the above is discussed in E.7.a.(1) through (3) of RWQCB Order No. R9-2013-0001.

III. Seek to coordinate among jurisdictions and education partners for effective and unified outreach and messaging to target audiences.

Objective 3.2-3 *Marina and Boating Impacts.* Minimize impacts to water and sediment quality from increased marina and boating activities associated with the CVBMP project.

I. Educate marina users on practices that prevent pollution.

II. Promote and facilitate the use of BMPs to prevent water quality degradation.

A. An on-site pump out facility shall be required with the development of any new marinas (CCDP 13.3).

B. Boating in the project area will be managed in a manner that protects water quality and that ensures persons or employees maintaining boats in slips or using slips on a transient basis are made aware of water quality provisions (CCDP 10.6).

1. Approval of projects within CVBMP marinas shall include appropriate requirements from the District JURMP that includes appropriate BMPs for controlling adverse impacts to water quality related to the boating facilities, including those BMPs for activities occurring over water (CCDP 10.6(a)).

2. Approval of projects within the CVBMP marinas shall include a requirement for boating facilities to identify procedures for inspection of boater activities and sanctions for boaters that may be adversely impacting water quality (CCDP 10.6(b)).

3. Marinas in the CVBMP project area shall provide evidence of ongoing efforts to protect water quality, such as a current certification by the Clean Marinas program (cleanmarina.org), stormwater BMP Plan, or other equivalent documentation of clean marina practices (http://www.cleanmarina.org/cleanmanual.shtml) (CCDP 10.6(c)).

4. San Diego Bay is a federally designated No Discharge Zone. The District shall ensure that District-leased facilities are adequately informing their boater tenants of their responsibilities regarding the discharge of sewage and are providing information to boaters on ways to anonymously report violators (CCDP 10.6(d)).

A state or local peace officer who reasonably suspects that a vessel is discharging sewage in an area where the discharge is prohibited may board the vessel, if the owner or operator is aboard, for the purpose of inspecting the Marine Sanitation Device for proper operation and placing a dye tablet in the holding tank (California Harbors and Navigation Code, Section 782d; CCC 2013; California Clean Boating Network 2012).

Both boat basins within the Chula Vista Port Master Plan shall have a minimum of one pump out facility. Prior to project approval, Project Proponent shall ensure evidence of compliance with the MS4 Municipal Permit. Marinas are required to comply with Port policies and procedures.

a. Consider the use of dye tablets in boat waste holding tanks. If a boat illegally discharges any of its holding tanks, the dye is immediately visible in the surrounding water.

5. The District shall adopt an addendum to leasing agreements for boating facilities that specifies actions that should be taken to protect water quality. This addendum should reflect applicable water quality laws and regulations pertaining to San Diego Bay (CCDP 10.6(e)).

Port leasing agreements for boating facilities require compliance with State and Federal regulations and Port policies.

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C. Comply with the Port's In-Water Hull Cleaning regulations (Port 2013b).

D. Encourage boaters to convert copper hull paints to alternative hull paints. A study conducted by the Port concluded that alternative hull paints are environmentally friendly, work well and can save money over the long term as they last longer than copper hull paints. The Port provides recommendations for a number of alternative hull paints, based on this research and boat type and use (Port 2013a).

Objective 3.2-4 *Deposition of Air Pollutants.* Minimize aerial deposition of pollutants within the CVBMP watershed and marine waters that comes from sources such as car exhaust, boat exhaust and fireworks.

I. A maximum of three fireworks events can be held, outside of California least tern nesting season (March 15 through August 31) except 4th of July, which may be allowed if in full regulatory compliance and if nesting colonies are monitored during the event with any impacts reported to the Wildlife Advisory Committee, so they can be addressed. All shows must comply with all applicable water quality and species protection regulations. All shows must be consistent with policies, goals, and objectives in the NRMP (Settlement Agreement 4.9.2; MMRP 4.8-6).

City/Port will review all permit applications for fireworks displays in the Chula Vista Bayfront relative to the requirement in paragraph I.

II. Encourage visitors to the CVBMP area to walk, bike, carpool or use public transportation to reach the area. See Section 5.0: Maximum Ecosystem Services in the Built Environment and Open Space.

Objective 3.2-5 *Watershed-Level Coordination.* Participate in alliances and partnerships with others and align programs and resources to more efficiently achieve the water quality standards in the Sweetwater and Otay District watersheds. The NRMP will promote, at a minimum, the maintenance and improvement of water quality where possible, and coordination with other entities charged with watershed protection activities (Settlement Agreement 3.2.5; CCDP 1.3(f)).

Objective 3.2-6 *BMP Monitoring.* Monitor effectiveness of BMPs to adjust or update as needed. Inspections and routine maintenance should be scheduled prior to and following storms and storm seasons (ORWMP 2006).

Construction BMPs: Prior to Project Approval of site-specific development proposals, the Port/City will approve a Storm Water Pollution Prevention Plan (SWPPP), if applicable, prepared by the Project Proponent to ensure compliance with the current General Construction Storm Water Permit. The review process will verify that the SWPPP includes requirements for inspection and evaluation of BMPs at least weekly and before, during, and after a rain event.

Post-construction BMPs: Prior to Project Approval for site-specific development proposals, the City/Port will approve a SWQMP prepared by the Project Proponent in accordance with the BMP Design Manual. The review process will verify the responsibility for on-going inspection and maintenance of structural BMPs.

Objective 3.2-7 *Enforcement.* Water-quality and runoff regulations are enforced.

3.3 Innovative and Best Practice Site Design and Management

Goal

Promote Best Practices. *Innovative and best practice site design and management minimize soil erosion and impacts to water and sediment quality.*

Objective 3.3-1 *Site Design and Best Management Practice for Stormwater and Erosion, and Sedimentation Control.* Construct, renovate or restore drainage systems within the CVBMP footprint that mimic the natural role of watersheds to process water and sediment, and provide habitat for native biodiversity.

All new development shall be designed and managed to minimize the introduction of pollutants into coastal waters to the maximum extent practicable and minimize increases in peak runoff rate and volume to avoid detrimental water quality impacts caused by excessive erosion or sedimentation (CCDP 13.2(c), 13.2(d)).

> *Prior to Project Approval for site-specific development proposals, the City/Port will approve a SWQMP prepared by the Project Proponent in accordance with the BMP Design Manual. The City/Port will ensure that the Project Proponent provides sufficient documentation to demonstrate that applicable requirements of the BMP Design Manual and the current Municipal Permit will be met.*

I. Provide protection and setbacks to wetland and aquatic habitats designated as ESHAs as stipulated in CCDP 5.

See Section 2.0: Sustainable and Improved Native Habitats and Communities, and Section 4.0: A Wildlife Friendly Urban-Wildland Interface.

> *Prior to Project Approval, Port/City shall review and approve project plans to ensure that wetland aquatic habitats are adequately protected and appropriate setbacks are maintained.*

II. Channelizations or other substantial alterations of streams shall be prohibited except for: 1) necessary water supply projects where no feasible alternative exists; 2) flood protection for existing development, where there is no other feasible alternative; and 3) the improvement of fish and wildlife habitat. Any channelization or stream alteration permitted for one of these three purposes shall minimize impacts to coastal resources, including the depletion of groundwater, and shall include maximum feasible measures to mitigate unavoidable impacts. Bioengineering alternatives shall be preferred for flood protection over "hard" solutions such as concrete or riprap channels (CCDP 14.6).

> *Prior to Project Approval of site-specific development proposals involving stream alterations, the Port/City will review project documentation to ensure compliance with paragraph II above.*

"Stream bed alteration to decrease the velocity of flow could use freshwater vegetation. This will not only alter flow it will act as a natural filter for toxics and it will entrap sediment and silt and act as a natural sediment basin. Bioengineering using a living rather than a non-living system will protect the watershed and riparian corridor as it enters the transition zone, the estuarine plain, mudflats, the bay and ultimately the ocean." - Mike McCoy, Southwest Wetlands Interpretive Association

III. Include site design best management and Low Impact Development (LID) practices, where feasible, in all developments (CCDP 13.2(e)) to minimize risks from run-off to marine, estuarine and marsh habitats.

> *Prior to Project Approval for site-specific development proposals, the Port/City will approve a SWQMP prepared by the Project Proponent in accordance with the BMP Design Manual. The City/Port will ensure that the Project Proponent provides sufficient documentation to demonstrate that applicable requirements of the BMP Design Manual and the current Municipal Permit will be met. The review process will verify that storm water quality objectives were considered in the project planning process and that opportunities to incorporate BMPs have been identified.*

A. Retain stormwater on-site as much as possible, and encourage infiltration.

B. Incorporate design features for harvesting rainwater and stormwater to help meet irrigation needs to the extent feasible and cost-effective. See also Section 5.0: Maximum Ecosystem Services in the Built Environment and Open Space.

Site design BMPs aim to conserve natural areas and minimize impervious cover, especially impervious areas "directly connected" to receiving waters to maintain or reduce increases in peak flow velocities from the project site (ORWMP 2006). Examples can be found in the most recent BMP Design Manual.

IV. Minimize impervious surfaces in new development, especially directly connected impervious areas. Where feasible, increase the area of pervious surfaces in redevelopment (CCDP 13.2(g)).

> *Prior to Project Approval for site-specific development proposals, the City/Port will approve a SWQMP prepared by the Project Proponent in accordance with the BMP Design Manual. The City/Port will ensure that the Project Proponent provides sufficient documentation to demonstrate that applicable requirements of the BMP Design Manual and the current Municipal Permit will be met. The review process will verify that storm water quality objectives were considered in the project planning process and that opportunities to incorporate BMPs have been identified.*

V. Minimize the land disturbance activities of construction (e.g., clearing, grading, and cut-and-fill), especially in erosive areas (including steep slopes, unstable areas, and erosive soils), to avoid detrimental water quality impacts caused by increased erosion or sedimentation (CCDP 13.2(i)).

> *Prior to Project Approval of site-specific development proposals, the Port/City will approve a SWPPP, if applicable, prepared by the Project Proponent to ensure compliance with the current General Construction Storm Water Permit. Port/City will provide on-site storm water inspections during construction to ensure compliance with the approved project SWPPP.*

Construction BMPs are the schedule of activities, prohibitions of practices, maintenance procedures and other management practices that reduce or eliminate stormwater pollutants during the construction phase. They are generally temporary measures including soil stabilization, construction materials handling procedures, and silt fence installation. The goal is to control erosion and sediment leaving the construction site (ORWMP 2006).

VI. Minimize erosion, sedimentation, and polluted runoff from construction-related activities of development, to the maximum extent practicable (CCDP 13.2(h)). Incorporate soil stabilization BMPs on disturbed areas as soon as feasible (CCDP 13.2(i)).

Prior to Project Approval of site-specific development proposals, the City/Port will approve a SWPPP, if applicable, prepared by the Project Proponent to ensure compliance with the current General Construction Storm Water Permit. Port/City will provide on-site storm water inspections during construction to ensure compliance with the approved project SWPPP.

VII. Prior to issuance of a grading, excavation, dredge/fill, or building permit for any parcel, the applicant shall submit a Spill Prevention/Contingency Plan for approval by the Port or City as appropriate. Among other elements, the plan shall ensure that hazardous or potentially hazardous materials used or generated during the construction and operation of any project as part of the Proposed Project shall be handled, stored, used, and disposed of in accordance with NPDES permitting requirements and applicable federal, state, and local policies (MMRP 4.5-3).

The requirements as noted in paragraph VII above shall be implemented in compliance with the MMRP.

SDRWQCB Basin Plan, Water Quality Objective for Sediment: The suspended sediment load and suspended sediment discharge rate of surface waters shall not be altered in such a manner as to cause nuisance or adversely affect beneficial uses (Sect. 3, pg. 30).

SDRWQCB Basin Plan, Water Quality Objective for Suspended and Settleable Solids: Waters shall not contain suspended and settleable solids in concentrations of solids that cause nuisance or adversely affect beneficial uses (Sect. 3, pg. 30).

VIII. Prior to the commencement of in-water construction for all phases of development, the Port or Port tenants shall adhere to regulatory requirements, including the use of BMPs, which shall include use of silt curtains during all sediment suspension activities (MMRP 4.5-5).

A. Prior to issuance of a grading permit for marina redevelopment, the developer shall submit a work plan for approval by the RWQCB and Port/City that requires the implementation of BMPs, including the use of silt curtains, during in-water construction, to minimize sediment disturbances and confine potentially contaminated sediment if contaminated sediment exists. If a silt curtain is necessary, it shall be anchored along the ocean floor with weights and anchored to the top with a floating chain of buoys.

   The curtain shall wrap around the area of disturbance to prevent turbidity from traveling outside the immediate project area. Once the impacted region resettles, the curtain(s) shall be removed. If the sediment would be suitable for ocean disposal, no silt curtain shall be required. However, if contaminants are actually present, the applicant would be required to provide to the RWQCB and Port/City an evaluation showing that the sediment would be suitable for ocean disposal (MMRP 4.5-4).

The requirements as noted in paragraph VIII.A above shall be implemented in compliance with the MMRP.

IX. Where possible, minimize increased flow rates and durations likely to cause increased erosion of channel beds and banks, sediment pollutant generation, or other impacts to beneficial uses and stream habitat, due to increased erosive force.

X. Implement the requirements of Hydromodification Management Plan (County of San Diego 2011) developed pursuant to the Municipal Permit, as required (CCDP 13.2(f)).[a]

a. Hydromodification refers to changes in the magnitude and frequency of stream flows as a result of urbanization and the resulting impacts on receiving channels in terms of erosion, sedimentation, and degradation of in-stream habitat.

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"What happens in the watershed ultimately happens in the estuarine, bay and ocean environment. It is important to keep this interlinkage in mind when implementing development projects that might threaten the services provided by the ecological integrity of the system. If hardscape is dealt with creatively in the watershed it will dissipate velocity of flow along the corridors to the Bay. - Mike McCoy, Southwest Wetlands Interpretive Association

Prior to Project Approval of site-specific development proposals, the Port/City will approve a SWQMP prepared by the Project Proponent in accordance with the BMP Design Manual. The City/Port will ensure that the Project Proponent provides sufficient documentation to demonstrate that applicable requirements of the BMP Design Manual and the current Municipal Permit will be met.

A. Where applicable, implement hydromodification mitigation measures so that post-project runoff flow rates and durations do not exceed pre-project flow rates and durations, where such increases would result in an increased potential for erosion or significant impacts to beneficial uses, per the RWQCB Order No. R9-2013-0001 (refer to Section 3.2: Watershed Approach). Such mitigation can provide: demonstration of no post-project increase in peak flow rates as compared to pre-project conditions; installation of practices, such as bioretention facilities, to control runoff flows and durations from new impervious areas; flow duration control basins; and in-stream rehabilitation controls to demonstrate that projected increases in runoff peaks or durations would not accelerate erosion.

See also Section 5.0: Maximum Ecosystem Services in the Built Environment and Open Space.

Objective 3.3-2

Stormwater Treatment Controls. Require treatment control BMPs, in addition to site design and source control measures, when the combination of site design and source control practice is not sufficient to protect water quality (CCDP 13.2(j)). Link treatments to maximize pollutant removal by designing the flow of water from source to discharge point.

I. All new development shall design, construct and maintain any required treatment control BMPs (or suites of BMPs) so that they treat, infiltrate, or filter the amount of storm water runoff produced by all storms up to and including the 85th percentile, 24-hour storm event for volume-based BMPs, and/or the 85th percentile, 1-hour storm event (with an appropriate safety factor of 2 or greater) for flow-based BMPs (CCDP 13.2(k)).

Prior to Project Approval of site-specific development proposals, the City/Port will approve a SWQMP prepared by the Project Proponent in accordance with the BMP Design Manual. The City/Port will ensure that the Project Proponent provides sufficient documentation to demonstrate that applicable requirements of the BMP Design Manual and the current Municipal Permit will be met.

A. Ensure the long-term viability of built and management strategies for stormwater treatment. As part of this, the Port/City will utilize as appropriate the California Coastal Commission's Sea Level Rise Guidance document.

II. Where necessary and feasible, select treatment BMPs to collect runoff from surrounding impervious surfaces to allow for sediment settling and to reduce the negative impacts of bacteria, metals, pesticides/fertilizers, floating debris and trash. Treat urban runoff at priority locations, including former power plant lands and J Street.

III. New runoff treatment infrastructure can be located and designed to facilitate routine maintenance with minimal disturbance to native flora and fauna.

A. Provisions for access for non-destructive maintenance and removal of litter and excess sediment will be integrated into these facilities (Settlement Agreement 4.6.1; CCDP 13.1).

B. In areas that provide for the natural treatment of runoff, a plant palette of bulrush, mulefat, willow, and the like are permissible (Settlement Agreement 4.6.1; CCDP 13.1).

Refer to Appendix F: Comprehensive Plant List for recommendations on grass and grass-like aquatic emergent vegetation suitable for such purposes.

C. Vegetation-based storm water treatment facilities, such as natural berms, swales, and detention areas are appropriate uses for Buffer Areas so long as they are designed using native plant species and serve dual functions as habitat areas (Settlement Agreement 4.6.1).

Prior to Project Approval of site-specific plans, plans for storm water berms, swales, and detention areas in buffers shall be reviewed to allow for adequate access and non-destructive maintenance, as well as the incorporation of native landscape materials where appropriate.

Figure 3-1. Rendering of stormwater mitigation concept.

D. Long-term, ongoing maintenance responsibility and mechanisms will be required for all post-construction BMPs and flow control facilities. If not properly designed or maintained, hydromodification flow control devices may create a habitat for vectors, such as mosquitoes or rodents (County of San Diego 2011).

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IV. Fine trash filters are required for all storm drain pipes that discharge toward WHAs (Settlement Agreement 4.6.4; CCDP 13.7; MMRP 4.8-6).

A. Storm water and non-point source urban runoff into WHAs must be monitored and managed so as to prevent unwanted ecotype conversion or weed invasion. A plan to address the occurrence of any erosion or type conversion will be developed and implemented, if necessary. Monitoring will include an assessment of stream bed scouring and habitat degradation, sediment accumulation, shoreline erosion and stream bed widening, loss of aquatic species, and decreased base flow (Settlement Agreement 4.6.2; CCDP 13.4).

V. Water quality features required to support new development shall not be constructed in wetland buffers (CCDP 3.1).

Prior to Project Approval of site-specific development proposals, the City/Port will ensure the Project Proponent shall comply with the relevant design features and monitoring.

VI. Provide opportunities for on-site education on stormwater treatment to emphasize the CVBMP project footprint as a place of stewardship (See Section 5.0: Maximum Ecosystem Services in the Built Environment and Open Space and Section 6.0: Education to Inspire and Promote the Human Experience of Nature).

Stormwater "treatment control" and management BMPs provide treatment for stormwater emanating from the project site. The NPDES General Permit requires using such post-construction BMPs that remain in service to protect water quality throughout the life of the project. They include storage, filtration, and infiltration practices. The most frequently used include swales, buffer strips, infiltration basins and trenches, and extended detention basins and ponds (ORWMP 2006). Examples can be found in the most recent BMP Design Manual.

3.4 Existing and Emerging Threats

Goal

Protect Resources and Human Health from Threats. *Existing and emerging threats are addressed to protect human health and marine life from food web transfer of toxins residing in contaminated sediment, and the negative impacts of invasive species.*

Objective 3.4-1

Addressing Contaminants. Ensure protection of water and sediment quality from contaminants, which may affect human health or wildlife.

I. As part of the IPM, review new herbicide products before use.

II. Stormwater basins may be used to minimize pathways of migration or spread.

III. Parcels contaminated with hazardous materials will be remediated to levels adequate to protect human health and the environment (Settlement Agreement 8; CCDP 16.1).

Port/City shall seek to partner with or otherwise assist the relevant regulatory agencies to identify parties responsible for legacy contamination and to require that those responsible parties conduct the appropriate levels of investigation and remediation.

IV. As part of watershed partnerships, work with upstream partners to prevent contaminants from reaching the CVBMP footprint.

Objective 3.4-2 *Aquatic Invasive Species.* Ensure bay-estuarine communities and food webs thrive, without displacement from invasive species.

I. Educate boaters with regard to invasive species introductions whenever possible. See Chapter 6 Education.

II. Provide early detection with rapid response within the CVBMP area.

A. Coordinate with the CDFW and other partners to provide a means for early detection of invasive species similar to that used for detecting the invasive algae *Caulerpa*.

B. Coordinate with the CDFW's Draft Statewide Rapid Response Plan for controlling the spread of invasive species (Appendix A of California Department of Fish and Game 2008).

C. Encourage the formation of volunteer efforts to identify and respond to (including the removal of) new infestations of invasive species at their first appearance.

III. Prior to commencement of any in-water development that involves disturbance of the subtidal water bottom, surveys will be done of the project area and a buffer area to determine the presence of the invasive alga *Caulerpa taxifolia*. The survey protocol shall be prepared in consultation with the RWQCB, the CDFW, and the National Marine Fisheries Service (CCDP 25.3).

> *The Project Proponent shall conduct* Caulerpa taxifolia *surveys prior to any in-water development.*

IV. Provide support for sustainable, long term resistance to invasion through integrated planning and restoring of natural habitat resilience to non-native organisms whenever possible. Design structures for natural habitat resilience to invasion by minimizing hardened structures that provide substrate for species that are not native to the bay. Determine the propensity of hardened structures to harbor invasive species and measures to prevent or control.

V. Provide support for programs and resources through alliances and partnerships with others to achieve early and efficient detection. Align with water quality education and outreach. Ensure the work undertaken is consistent with strategies in the CDFW Aquatic Invasive Species Plan (2008).

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4.0 A Wildlife Friendly Urban-Wildland Interface

The CVBMP development strives to be a model for supporting and sustaining thriving native plant, wildlife, and aquatic habitats adjacent to an urbanizing area that provides opportunities for personal interaction with nature. Construction, design, management, and use of the CVBMP footprint avoids and minimizes disturbance of native wildlife behavior and life cycle needs. Nesting, residential, and migratory species are preserved, protected, and enhanced.

4.1 Key Messages

Avoiding and minimizing disturbance to native wildlife in the CVBMP project footprint and WHAs cuts across the entire spectrum of activities from construction and design of the development to its management and use. All areas within the CVBMP footprint contribute to sustaining and protecting wildlife from new and increased uses, ranging from the built environment to the designated WHAs.

To achieve this, innovative measures are proposed in built environment design, park design and maintenance, and public use management. Physical protective measures (e.g., buffers and fencing) are complemented by clear management directives and reinforced through comprehensive public education and enforcement in a wide variety of formats.

The goal is to accommodate the transformation of the CVBMP project footprint the increased and responsible use the new developments will attract, while preserving and sustaining the unique wildlife communities and habitats of south San Diego Bay.

This Chapter is organized as follows:

4.2 Use of Buffers to Protect Sensitive Habitats

Goal

Physical Protective Measures. *Wildlife and habitats within the CVBMP footprint and adjacent WHAs are protected and sustained through establishment and management of physical protective measures.*

Objective 4.2-1

Buffers and Fencing. Protect native wildlife and sensitive wildlife habitats from human, predator, and pest disturbances through design and installation of buffer areas and appropriate fencing (Figure 4-1).

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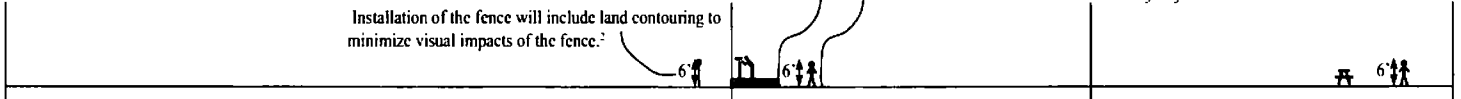
Buffer Areas in the Sweetwater District - Graphical Representation based on Controlling Documents

"Undeveloped land along the northern and western bountaries of the district will be established as a 400-foot-wide buffer/setback area. The buffer/setback is intended to preserve and protect the adjacent Sweetwater Marsh Wildlife Refuge from planned development and to provide a gradual transition from undeveloped native landscape to developed areas."[1]

Policy 5.1: 6' fence
The fence will be a minimum 6-foot high, black vinyl chain link fence or other equally effective barrier designed to take into consideration public views of the Bay and the need to protect natural resources.

Installation of the fence will include land contouring to minimize visual impacts of the fence.[2]

Policy 20.1
Shoreline promenades shall be a minimum of 25 feet in width allowing both pedestrians and bicyclists and shall be constructed directly along the waterfront where feasible and maintained free of private encroachment around the Bayfront. *Pathways and walking trails not proposed along the shoreline shall be a minimum width of 12 feet.*[2]



200 ft. No-Touch Buffer

The no-touch zone primarily consists of wetland and upland habitat.[1]

Mitigation Measure 4.8-6
The first 200 ft of buffer areas adjacent to sensitive habitats...will be maintained as a 'no touch' buffer and will not contain any trails or overlooks.[3]

Policy 5.2
Prohibit active recreation, construction of any road (whether paved or not), within No Touch Buffer Areas and "Transition Buffer Areas" as that term is defined and described in Exhibit 2, with the exception of existing or necessary access points for required maintenance.[2]

NRMP Framework and MMRP Mitigation Measure 4.8-7 include "Limited Use Buffer Areas"

Policy 23.4
Public views of the Bay and access along the waterfront shall be provided via a proposed "Baywalk" promenade. This pedestrian path will also connect to the Signature Park, and the pathway system within the Sweetwater District, ultimately linking the two districts and *enabling viewers to experience visual contact at close range with the Bay and marshlands.*[2]

100 ft. Limited Use Buffer

The limited use zone will contain outlook stations, open space areas, and a meandering trail system.[1]

The outlook stations, which will be connected by meandering trails designated as Promenade, will provide viewing areas of the bay and wildlife.[1]

Policy 19.1 (c)
Pedestrian and bike trails will be segregated where feasible. A meandering public trail will be provided along the entire length of the Bayfront. The meandering trail within the Sweetwater Park and adjacent to Buffer Areas will not be paved.[2]

Policy 11.1, Mitigation Measure 4.8-7
Walkways, paths, and overlooks near Wildlife Habitat Areas outside of the No Touch Buffer Areas will be designed in accordance with the following:
a)Alignment, design, and general construction plans of walkways and overlooks will be developed to minimize potential impacts to Wildlife Habitat Areas.
b)Path routes will be sited with appropriate setbacks from Wildlife Habitat Areas.
c)Paths running parallel to shore or marsh areas that will cause or contribute to bird flushing will be minimized throughout the Chula Vista Bayfront.
d)Walkways and overlooks will be designed to minimize and eliminate, where possible, perching opportunities for raptors and shelter for skunks, opossums or other Predators.
e)Walkways and overlooks that approach sensitive areas must be blinded, raised, or otherwise screened so that birds are not flushed or frightened. In general, walkway and overlook designs will minimize visual impacts on the Wildlife Habitat Areas of people on the walkways.[2,3]

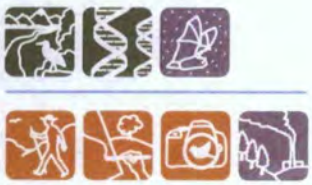
100 ft. Transitional Use Buffer

The transitional use zone will accommodate increased recreational uses such as picnic areas and trails, and consists of revegetated open space.[1]

Policy 20.3
Create a meandering pedestrian trail constructed of natural material that is easily maintained and interwoven throughout the Signature Park.[2]

[1]Chula Vista Bayfront Mater Plan & Port Master Plan Amendment (revised July 2012), certified by the California Coastal Commission
[2]Chula Vista Bayfront Development Policies (July 2012), certified by the California Coastal Commission
[3]Mitigation Monitoring and Reporting Program for the Chula Vista Bayfront Master Plan (May 2010)

Figure 4-1. No-Touch, Limited Use, and Transitional Use Buffer Areas in the Sweetwater District per NRMP Controlling Documents.



Buffer Purpose, Design, and Management:

The CVBMP area contains Buffer Areas along the shoreline within the Sweetwater and Otay Districts as well as buffers around sensitive resources within the project footprint. The purpose of the shoreline Buffer Areas ("no touch," "limited use," and "transitional use") is to preserve and protect the adjacent Sweetwater Marsh Wildlife Refuge and the J Street Marsh and wildlife reserve from planned development and to provide a gradual transition from undeveloped native landscape to developed areas (refer to Map 2-1). The purpose of the buffers around sensitive resources found within the project footprint is to protect them from both development and use impacts of the CVBMP area. Additional details for the design and permitted uses of each type of buffer are provided below as well as in Section 2.0: Sustainable and Improved Native Habitats and Communities.

I. All buffers shall be established and maintained by the Port/City (MMRP 4.8-6).

The requirement as noted above in paragraph I shall be implemented or cause to be implemented by the Port/City, their agents or designees, in compliance with the MMRP.

II. All boating, human, and pet intrusion must be kept away from F&G Street channel mouth and marsh (Settlement Agreement 4.11.1; CCDP 10.1).

Appropriate signage will be installed. City and Port ordinances will be enforced.

Resource-dependent uses include enhancement/restoration work, passive recreational parks and public access or recreational facilities such as trails and bike paths integrated into the natural environment and sited and designed to preserve, and be compatible with native habitat (CCDP 5.10)

III. New development shall be sited and designed to avoid impacts to ESHAs. ESHAs shall be protected against any significant disruption of habitat values, and only uses dependent on those resources shall be allowed within those areas. Development in areas adjacent to ESHA, parks, and recreation areas shall be sited and designed to prevent impacts which would significantly degrade those areas, and shall be compatible with the continuance of those habitat and recreation areas (CCDP 5.10). ESHAs are defined in CCDP 5.9.

Prior to Project Approval, the site-specific development proposals will be reviewed for compliance with paragraph III above.

IV. Development adjacent to ESHAs shall minimize impacts to habitat values or sensitive species to the maximum extent feasible. Native vegetation buffer areas shall be provided around ESHAs to serve as transitional habitat and provide distance and physical barriers to human intrusion. Buffers shall be of a sufficient size to ensure the biological integrity and preservation of the ESHA they are designed to protect (CCDP 5.14).

   A. All buffers around (non-wetland) ESHA shall be a minimum of 100 feet in width, or a lesser width may be approved by the District if findings are made that a lesser buffer would adequately protect the resource. However, in no case can the buffer size be reduced to less than 50 feet (CCDP 5.15).

   B. Habitat buffers shall include a 100-foot-wide buffer from the seasonal pond (SP-2) within the Sweetwater District, a 400-foot wide combined buffer in the Sweetwater District, and a minimum 100-foot buffer in the Otay District (Settlement Agreement 4.4.3; CCDP 5.8, 14.3).

Prior to Project Approval, the site-specific development proposals will be reviewed for compliance with paragraph IV above.

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Per the Port Master Plan: The limited use zone will contain outlook stations, open space areas, and a meandering trail system. The transitional use zone will accommodate increased recreational uses such as picnic areas and trails, and consist of revegetated open space.

C. No-Touch Buffer Areas will be defined as described in MMRP Exhibit 2 (Settlement Agreement 4.1.3; CCDP 5.1; MMRP 4.8-7). This includes the first 200 feet of buffer areas adjacent to sensitive habitats, or full width in the case of reduced buffer areas. They will not contain any trails or overlooks (MMRP 4.8-6). Refer to Map 2-1.

The requirements as noted above in paragraph C shall be implemented in compliance with the MMRP.

D. On Parcel S-4, fencing of the 100-foot buffer on the north side of the parcel is required prior to any physical alterations of the site. Also, at the time the project specific development is proposed on parcels S-4 and S-1, shading impacts, appropriate setbacks, step backs, and/or height reductions, will be analyzed as part of the necessary subsequent environmental review for those projects (Settlement Agreement 4.4.4; CCDP 14.4).

Prior to Project Approval of site-specific development proposals, the Port/City will ensure that the requirements noted in paragraph D above are implemented.

V. Active recreation and construction of any road (whether paved or not) are prohibited in the No-Touch Buffer Areas, "Transition Buffer Areas," and "Limited Use Buffer Areas" as defined in MMRP Exhibit 2, with the exception of existing or necessary points required for maintenance (Settlement Agreement 4.1.4; CCDP 5.2; MMRP 4.8-7).

The requirements as noted above in paragraph V shall be implemented in compliance with the MMRP.

A. In addition, roads should be sited as far from Buffer Areas as possible.

Refer to Section 2.0: Sustainable and Improved Native Habitats and Communities for additional strategies for managing habitat values and sea level rise adaptation benefits of Buffer Areas.

Fencing and Additional Controls:

VI. Measures including, but not limited to, signage, placement of boardwalks, and limited fencing shall be implemented as necessary to protect ESHA (CCDP 5.16).

Prior to Project Approval, the Port/City will review the site-specific development proposals for compliance with paragraph VI above.

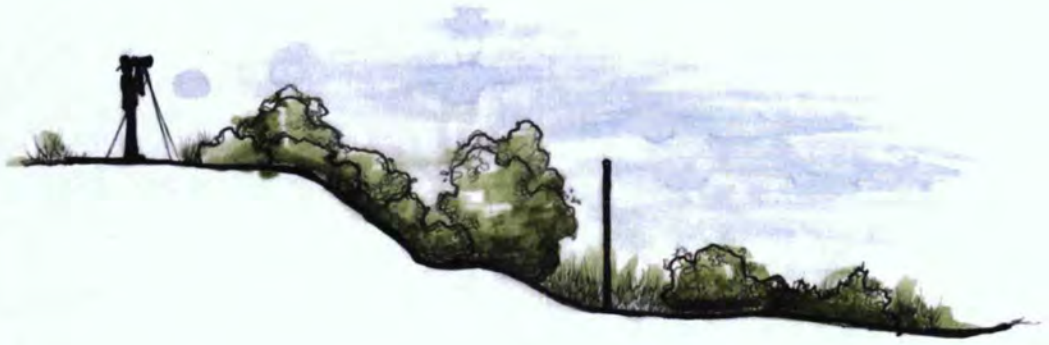
VII. Permanent fencing: prior to approval of landscape plans, a conceptual site plan or fencing plan shall be submitted to the Port or City, as appropriate, for review and approval to ensure areas designated as sensitive habitat are not impacted. Fencing shall be provided within the buffer area only, and not in sensitive habitat areas (MMRP 4.8-6).

The requirements as noted above in paragraph VII shall be implemented in compliance with the MMRP.

Per the Port Master Plan: Fence installation shall include land contouring to minimize visual impact of the fence.

A. In Buffer Areas, fencing provided should be hidden, as much as possible or feasible, by vegetation or contouring (see Figure 4-2). Consider layers of fencing, where feasible and most effective.

Access and Protection



Minimize appearance of barriers to protected areas without sacrificing security
+ Where possible fences will be hidden by constructed topography and vegetation

Figure 4-2. Rendering of a hidden barriers concept design.

VIII. Fencing should be sufficient to protect the No-Touch Buffer Areas from impacts of the CVBMP project. This includes, but is not limited to fencing to protect the Sweetwater Marsh and Sweetwater parcel tidal flats, the J Street Marsh next to the San Diego Bay NWR, and the north side of parcel H-3 (Settlement Agreement 4.1.5; CCDP 5.3; MMRP 4.8-7).

The requirement as noted above in paragraph VIII shall be implemented in compliance with the MMRP.

IX. No-Touch Buffer Areas will contain fencing designed specifically to limit the movement of domesticated, feral, and nuisance predators (e.g., dogs, cats, skunks, opossums, and other small terrestrial animals [collectively, "Predators"]) and humans between developed park and No-Touch Buffer Areas and WHAs (Settlement Agreement 4.1.3; CCDP 5.1; MMRP 4.8-7).

A. The fence will be a minimum 6-foot high, black vinyl chain link fence or other equally effective barrier designed to take into consideration public views of the Bay and the need to protect natural resources (built to specifications described in EIR) (Settlement Agreement 4.1.3; CCDP 5.1; MMRP 4.8-7).

B. Fence design may include appropriate locked access points for maintenance and other necessary functions. Installation of the fence will include land contouring to minimize visual impacts of the fence (Settlement Agreement 4.1.3; CCDP 5.1; MMRP 4.8-7).

The requirements as noted above in paragraph IX shall be implemented in compliance with the MMRP.

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C. The installation of such fencing in Sweetwater and Harbor Districts must be completed prior to the issuance of Certificates of Occupancy for development projects on either Parcel H-3 or H-23 (or the first buildings constructed in Phase I) and in conjunction with development or road improvements in the Sweetwater District (Settlement Agreement 4.1.3; CCDP 5.1; MMRP 4.8-6 and 4.8-7).

The requirements as noted above in section IX (A, B, and C) shall be implemented in compliance with the MMRP.

D. Fencing should not promote raptor or other predator perching and should comply with such strategies in Section 4.6: Management of Predators, Pests, and Pets.

X. Temporary fencing: Prior to issuance of any clearing and grubbing or grading permits, temporary orange fencing shall be installed around sensitive biological resources on the project site that will not be impacted by the Proposed Project. Silt fencing shall also be installed along the edge of the San Diego Bay NWR during grading within the western portion of the ecological buffer. In addition, the applicant must retain a qualified biologist to monitor the installation and ongoing maintenance of this temporary fencing adjacent to all sensitive habitats. This fencing shall be shown on both grading and landscape plans, and installation and maintenance of the fencing shall be verified by the Port's or City's Mitigation Monitor, as appropriate (MMRP 4.8-6).

The requirements as noted above in section X shall be implemented in compliance with the MMRP.

XI. Additional controls and strategies restricting movement of humans and predators into sensitive areas beyond the boundaries of the designated buffer areas may be developed (Settlement Agreement 4.1.6; CCDP 5.4).

See strategies identified in Section 4.6: Management of Predators, Pests, and Pets.

During review of site-specific development proposals, the Port/City may review and consider control strategies with Project Proponent.

A. Enforcement personnel should be trained in the importance of preventing human and pet encroachment in these areas.

B. Consider planting and cultivating native plants in the Buffer Areas that can contribute to reducing human and predator or pest intrusion into them and other sensitive wildlife habitats.

C. Appropriate signage will be installed adjacent to sensitive habitats and buffer areas to discourage public access and provide contact information for the Harbor Police to report trespassing within the sensitive areas (MMRP 4.8-6).

The requirement as noted above in paragraph C shall be implemented in compliance with the MMRP.

XII. Recreational Vehicle Parks within the CVBMP footprint are required to install fencing or other barriers sufficient to prevent passage of predators, [pets], and humans into sensitive adjacent habitat (Settlement Agreement 4.1.7; CCDP 5.5; MMRP 4.8-7).

The requirement as noted above in paragraph XII shall be implemented in compliance with the MMRP.

A. Identify and require, if needed, additional management strategies to protect wildlife values in the Sweetwater NWR and J Street Marsh (in Otay District), adjacent to the Recreational Vehicle parks.

XIII. Protection of ESHA and public access shall take priority over other development standards and where there is any conflict between general development standards and ESHA and/or public access protection, the standards that are most protective of ESHA and public access shall have precedence (CCDP 5.18).

XIV. For required development standards that are not related to ESHA protection (street setbacks, height limits, etc.), modifications shall be permitted where necessary to avoid or minimize impacts to ESHA (CCDP 5.17).

Prior to Project Approval, the Port/City will review the site-specific development proposals for compliance with paragraphs XIII and XIV above.

Also refer to the detailed depiction of regulated uses of the Buffer Areas in the Sweetwater District (Figure 4-1).

4.3 Low Impact Uses

Goal

Minimize Human Activity Impacts. *Opportunities, areas, and activities throughout the CVBMP footprint that allow for recreation and visitor interaction with nature are managed to avoid impacts to, and support the resiliency of, native wildlife communities and habitats.*

Objective 4.3-1

Low Impact Recreation. Provide and promote low impact passive recreational activities throughout the CVBMP footprint.

I. Park designer will consider designating and/or creating areas in the CVBMP footprint, appropriate for passive recreation and visitor interaction with nature, so that potential negative impacts to wildlife from these activities are contained and minimized.

A. Consider designing and managing specific areas within Signature Park to "bring nature to the people" by allowing hands-on play and interaction with habitats (Appendix B: Ecosystem-Based Management and Ecosystem Services and Section 5.0: Maximum Ecosystem Services in the Built Environment and Open Space).

B. Fishing and other resource uses, where permitted within the CVBMP footprint, should remain low impact and regulated by appropriate agencies (e.g., CDFW).

C. New access-ways and trails located within or adjacent to ESHA shall be sited to minimize impacts to ESHA to the maximum extent feasible. Public access-ways and trails are considered resource-dependent uses (CCDP 5.16).

Prior to Project Approval, the Port/City will review the site-specific development proposals for compliance with paragraph C above.

II. No hunting is permitted.

III. Collection of native plant materials is only allowed where expressly permitted; specific descriptions and instructions on plant collections will be detailed and, where applicable, educational signage will be present.

IV. Design walkways, paths and overlooks near the WHAs outside of the No-Touch Buffer Areas in accordance with the Settlement Agreement 4.2; CCDP 11.1, and MMRP 4.8-7. (See also Section 5.0: Maximum Ecosystem Services in the Built Environment and Open Space).

A. Alignment, design, and general construction plans of walkways and overlooks will be developed to minimize potential impacts to WHAs (Settlement Agreement 4.2.1, CCDP 11.1(a)).

B. Path routes will be sited with appropriate setbacks from WHAs (Settlement Agreement 4.2.2, CCDP 11.1(b)).

C. Paths running parallel to shore or marsh areas that could cause or contribute to bird flushing will be minimized throughout the CVBMP project (Settlement Agreement 4.2.3, CCDP 11.1(c)).

D. Design walkways and overlooks to minimize and eliminate, where possible, perching opportunities for raptors and shelter for skunks, opossums or other predators (see also Section 5.0: Maximum Ecosystem Services in the Built Environment and Open Space) (Settlement Agreement 4.2.4, CCDP 11.1(d))

E. Walkways and overlooks that approach sensitive areas will be blinded, raised, or otherwise screened so that birds are not flushed or frightened. In general, walkway and overlook designs will minimize visual impacts on the WHAs of people on the walkways (Settlement Agreement 4.2.5, CCDP 11.1(e))

Prior to approval of projects that include work in buffers, the Port/City will review the site-specific development proposals for compliance with paragraph V (A-E) above.

Objective 4.3-2

Reduce Impacts from Marine Recreation. Avoid and minimize impacts to native wildlife, particularly migrating, rafting, or feeding birds, from boating and recreational use of marine areas.

I. NRMP management objectives for WHAs promote the protection of nesting, foraging, and rafting wildlife from disturbance (Settlement Agreement 3.2.3, CCDP 1.3(d), and MMRP 4.8-7).

The requirements as noted in paragraph I above shall be implemented in compliance with the MMRP.

In addition to protecting migratory birds, this plan aims to minimize boating collisions with sea turtles and marine mammals, as well as boating activity-caused turbidity and eelgrass damage.

II. As feasible, take necessary action to protect biological use and values of F&G Street marsh, J Street marsh, and other marine areas identified as important for resting and migrating birds from frequent disturbance to avoid reducing birds' ability to recover and successfully return to nesting and breeding grounds.

Flocks of feeding, rafting, and resting water birds rely on the still waters of San Diego Bay to recover and prepare for migrations to their nesting grounds in the summer. The mouth of the F&G Street marsh is often full of resting and migrating shorebirds or Brant feeding on the eelgrass there. The J Street marsh and other offshore areas also provide rest and cover for many over-wintering species such as brant, pintail, scoters, etc. During the spring and summer, Ridgway's rails (formerly known as clapper rails), savannah sparrows, and many other species use the mudflats, shoreline and adjacent marsh areas.

Figure 4-3. Example of one bird blind design rendering.

III. Water areas will be managed with enforceable boating restrictions (Settlement Agreement 4.11.2; CCDP 10.2; MMRP 4.8-6).

A. No boating is allowed in the vicinity of J Street Marsh or east of the navigation channel in Sweetwater District during fall and spring migration and during the winter season when flocks of birds are present (Settlement Agreement 4.11.3; CCDP 10.2; MMRP 4.8-6).

B. No boating is allowed in the F&G Street channel mouth and marsh (Settlement Agreement 4.11.1; CCDP 10.1; MMRP 4.8-6).

C. All rentals of personal water craft (PWC)[1] are prohibited in the Chula Vista Bayfront (Settlement Agreement 4.11.4; CCDP 10.3; MMRP 4.8-6).

D. Use of PWCs is prohibited in WHAs, subject to applicable law (Settlement Agreement 4.11.5; CCDP 10.4; MMRP 4.8-6).

E. A five mile per hour speed limit will be enforced in areas other than the navigation channels (Settlement Agreement 4.11.6; CCDP 10.5; MMRP 4.8-6). Signage indicating the speed limit should be placed in appropriate areas. Consider installing "no wake" buoys in strategic areas.

F. Special exceptions to these restrictions may be made for bona fide research, law enforcement, or emergency activities (Settlement Agreement 4.11.7; MMRP 4.8-6).

G. The District will exercise diligent and good faith efforts to enter into a cooperative agreement with the Resource Agencies and Coast Guard to ensure monitoring and enforcement of no-boating zones and speed limit restrictions to prevent wildlife disturbances (Settlement Agreement 4.11.2).

1. A PWC is a motorboat less than 16 feet in length which uses an inboard motor powering a jet pump as its primary motive power and which is designed to be operated by a person sitting, standing, or kneeling on rather than in the conventional manner of sitting or standing inside the vessel (CCDP 10.3).

The requirements as noted above in section III shall be implemented in compliance with the MMRP utilizing the appropriate agency or law enforcement resource.

IV. Appropriate visual screening along shorelines in the Sweetwater and Otay Districts should be provided to minimize or avoid disruption to native wildlife. Screening to be integrated with design of Buffer Areas, including contouring anticipated for sea level rise adaptation and the placement of fencing to restrict access to sensitive WHAs. Such screening must comply with CCDP policies that regulate the preservation of harbor views and aesthetics. (See also Section 4.2: Use of Buffers to Protect Sensitive Habitats).

V. To protect native wildlife and habitats, protective measures for vulnerable mudflats and marine areas (or portions of them during critical seasons) shall be established to reduce visitor intrusion into those areas. These measures include, but are not limited to:[1]

A. Place buoys or other signage in the water to signal the edge of sensitive mudflats and waterfront channels as a *no access* area and to demarcate them from navigation channels.

B. Develop a plan to avoid and minimize avian disturbance in waters where recreational watercraft are allowed. This could take the form of improving escape cover, managing many levels of use, or managing routes taken.

C. Provide education to visitors to reduce bird flushing, during key seasons. Include relevant educational materials on flushing as part of kayak, fishing, and other water-based recreation rentals.

1. The management actions for strategies V.A through V.C are priority actions that will be a focus for early grant requests. In the event that grant funding is not secured prior to the issuance of a building permit in either Sweetwater District (including Signature Park), the Otay District, the residential development, or the resort conference center, Operations & Maintenance (O&M), Port Environmental funds, or other funding will be used to ensure these actions are implemented prior to issuance of the Certificate of Occupancy on any project located within the Sweetwater District (including Signature Park), the Otay District, or the resort conference center. If the first development is the residential development, the management actions contained in strategies V.A through V.C will be implemented no later than 90 days from the issuance of the first Certificate of Occupancy for any phase of any residential development.

4.4 Construction and Maintenance Impacts

Goal

Reduce Construction and Maintenance Impacts. *Construction and maintenance impacts to wildlife or habitats are avoided or minimized through permitting compliance, enforcement, effective control measures, education and design.*

Objective 4.4-1

Minimize Maintenance Needs Through Design. Design outdoor areas intended for public use, wildlife preserves, or treatment to minimize the need for maintenance that would otherwise impact native wildlife or plant communities.

I. Designate specific areas of Signature Park and Otay District park according to intended intensity of public use. All areas should be self-sustaining, according to anticipated public use, and require as little maintenance as possible to achieve both public use and habitat goals. Areas zoned for more intense use would likely require more maintenance than those zoned for infrequent or less impactful use. See also Appendix B: Ecosystem-Based Management and Ecosystem Services and Section 5.0: Maximum Ecosystem Services in the Built Environment and Open Space.

II. It is recommended that new runoff treatment infrastructure and drainage channels should be located and designed to replicate, to the extent feasible, natural pre-development flows, and to facilitate routine maintenance with minimal disturbance to native flora and fauna (as stipulated in RWQCB Order No. R9-2013-0001).

A. Provisions for access for non-destructive maintenance and removal of litter and excess sediment will be integrated into these facilities (Settlement Agreement 4.6.1; CCDP 13.1).

See also Section 3.0: Minimizing Harm to Neighboring Wetlands and Marine Waters.

Prior to Project Approval, the Port/City will review the site specific development proposals for compliance with paragraph A above.

B. All activities in drainages should be evaluated for conformance with Federal and State wetland permitting regulations. If required by law, federal (CWA, Section 404) and/or state (Fish and Game Code Section 1600 et seq.) permits should be obtained.

III. Establish protocols for routine and emergency maintenance activities that retain habitat value and avoid the breeding season (as feasible), so that while human life, health, and safety are given precedence, sensitive resources are also protected, as in stormwater basins or treatment areas.

Objective 4.4-2 *Permitting, Conservation Measures, and Monitoring.* Avoid construction and maintenance impacts to breeding birds and other sensitive resources through appropriate project timing, permitting, application of conservation measures, and monitoring.

I. Pursuant to permitting requirements of the Resource Agencies, preconstruction meetings will take place with all personnel involved with the project, to include training about the sensitive resources in the area (MMRP 4.8-6).

The requirements as noted in paragraph I above shall be implemented in compliance with the MMRP.

II. Clean equipment in temporary staging areas, or other designated areas in accordance with BMPs, prior to entering and departing the project corridor to minimize the spread and establishment of non-native invasive plant species.

III. To the extent feasible, schedule construction activities in areas with suitable nesting habitat for migratory birds so that they begin outside of the avian breeding season (January 15 through August 31). This will allow any necessary habitat removal prior to nesting and encourage birds to selectively nest away from the construction disturbances.

IV. Prior to construction in any areas with suitable nesting habitat or locations for (a) raptors (such as trees, utility poles, or other suitable structures), (b) burrowing owl, or (c) migratory birds, and, if grading or construction occurs during the breeding season for nesting raptors (January 15 through July 31), burrowing owl (January 15 through July 31), or migratory birds (January 15 through August 31), the project developer(s) shall retain a qualified, Port- or City-approved biologist, as appropriate (MMRP 4.8-1, 4.8-2, 4.8-3).

A. The biologist will conduct a pre-construction survey for active nests or burrows. It must be conducted no more than ten calendar days prior to the start of construction, the results of which must be submitted to the Port or City, as appropriate, for review and approval (MMRP 4.8-1, 4.8-2, 4.8-3).

B. If an active raptor or migratory bird nest is present, an appropriate setback distance will be determined in consultation with the applicant, Port or City, USFWS, and CDFW. The construction set back shall be implemented until the young are completely independent of the nest or the nest is relocated with the approval of the USFWS and CDFW (MMRP 4.8-1, 4.8-3).

C. If an active burrowing owl burrow is detected during the breeding season of January 15 to July 31, construction setbacks of 300 feet from occupied burrows shall be implemented until the young are completely independent of the nest. If an active burrow is found outside of the breeding season, or after an active nest is determined to no longer be active by a qualified biologist, the burrowing owl would be passively relocated according to the guidelines provided by the CDFW (1995) and in coordination with the CDFW (MMRP 4.8-2).

V. Prior to construction or grading in any areas of suitable nesting or foraging habitat for light-footed clapper rail, and, regardless of the time of year, the project developer(s) shall retain a qualified biologist who shall be approved by the Port or City, as appropriate, and shall be present during removal of southern coastal salt marsh vegetation within the inlet to the F & G Street Marsh to ensure that there are no direct impacts to foraging light-footed clapper rails. If a light-footed clapper rail is encountered, construction will be temporarily halted until the bird leaves the area of construction. The project developer(s) shall consult with the USFWS prior to impacting any areas of suitable nesting or foraging habitat for light-footed clapper rail so as not to prevent any unauthorized take of the light-footed clapper rail. Any take must be authorized by USFWS (MMRP 4.8-4).

VI. A biomonitor shall be present on site during initial grubbing and clearing of vegetation to ensure than perimeter construction fencing is being maintained. The biomonitor shall also perform periodic inspections of the construction site during all major grading to ensure that impacts to sensitive plants and wildlife are minimized. Depending on the sensitivity of the resources, the City and/or Port shall define the frequency of field inspections. The biomonitor shall send a monthly monitoring letter report to the City and/or Port detailing observations made during field inspections. The biomonitor shall also notify the City and/or Port immediately if clearing is done outside of the permitted project footprint (MMRP 4.8-1, 4.8-2, 4.8-3, 4.8-4).

The requirements as noted in paragraphs IV (A-C), V, and VI above shall be implemented in compliance with the MMRP.

4.5 Management of Operational and Construction Noise

Goal

Manage Noise to Avoid Impacts. *Noise levels associated with construction and regular use of the CVBMP project footprint are reduced as much as possible to protect wildlife from disturbance and to maintain the tranquility of the bayfront area.*

Objective 4.5-1

Fireworks Shows. Regulate and monitor fireworks shows to avoid and minimize impacts to native wildlife.

I. Per the Settlement Agreement and the MMRP of the EIR:

A. A maximum of three fireworks events can be held (Settlement Agreement 4.9.2; MMRP 4.8-6).

B. All shows are to be held outside of California least tern nesting season, except 4th of July fireworks show which is permitted only if it is in full regulatory compliance and is accompanied by monitoring of nesting colonies during the event. Any impacts to the nesting colonies during the event would be reported to the WAG so they can be addressed (Settlement Agreement 4.9.2; MMRP 4.8-6).

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C. All shows must comply with all applicable water quality and species protection regulations and be consistent with all other goals and objectives contained in this NRMP (Settlement Agreement 4.9.2; MMRP 4.8-6).

The requirements as noted above in paragraphs A-C above shall be implemented in compliance with the MMRP.

II. Fireworks shows should be appropriately located and timed to avoid as much disturbance to wildlife as possible. Adaptive management for placement and timing, based on monitoring results, is recommended.

III. Fireworks shows are encouraged to be low-noise producing and display altitudes adjusted pursuant to the best available science to minimize disruption to bird species. Duration of shows should remain as short as feasible to limit the duration of potential noise impacts. Whirling, sonic booms, and similar types of fireworks are discouraged.

Objective 4.5-2

Operation and Maintenance Noise. Minimize noise resulting from routine operation and maintenance of the CVBMP footprint.

I. Use Best Practice Designs as required to manage noise levels. The objective should be to generate the sound up instead of out and may include the following:

A. Consider using temporary wall structures for large/staged events.

B. Consider using temporary design structures or other innovative management techniques to protect against extreme and impulse noise that could create impacts beyond ambient noise levels.

C. To manage noise levels in the Recreational Vehicle Parks, consider requiring the use of electrical plug-in stations, instead of generators, and implement quiet hours.

D. Provide sufficient space between recreational vehicle slips and campsites, where feasible, as well as native vegetation throughout the area, to dissipate and absorb noise.

II. Noise levels from the following uses shall not exceed 60 dB(A) Leq. at the boundaries of the F&G Street Marsh and the J Street Marsh during the typical breeding season of January 15 to August 31 (MMRP 4.8-6):

A. Loading and unloading areas;

B. Rooftop heating, ventilation, and air conditioning facilities;

C. Other noise-generating operational equipment (MMRP 4.8-6). When feasible, use non-gasoline driven equipment that produce noise levels below 60 dBA Leq., particularly near buffers and sensitive wildlife areas.

The requirements as noted above in paragraph II shall be implemented in compliance with the MMRP.

III. Noise levels from use of operational and maintenance equipment adjacent to sensitive habitat areas should also be minimized, to the extent practical, during the migratory bird overwintering season.

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IV. General outdoor use areas (excepting the areas described above) shall not be exposed to noise levels exceeding 65 dBA Community Noise Equivalent Level. Project developers are required to submit site plans to the Director of Planning and Building of the City to demonstrate compliance. Prior to the issuance of building permits, noise barriers shall be installed to reduce sound levels below this level (MMRP 4.7-2, 4.7-6).

The requirements as noted above in paragraph IV shall be implemented in compliance with the MMRP.

A. While the use of glass or plexiglas as a sound barrier is permitted (per MMRP 4.7-2 and MMRP 4.7-6), use of these materials should be avoided, to the extent feasible, to reduce potential bird strikes and disorientation. No clear glass or plexiglas should be used; if glass or plexiglas is used, measures outlined in Section 4.8: Design of the Built Environment describing glass treatments should be required to minimize bird disorientation and mortality.

V. Prior to the approval of Design Review for the Pacifica project, the applicant shall submit a design plan for the project demonstrating to the satisfaction of the City's Director of Planning and Building that the noise level from operation of mechanical equipment will not exceed 50 dB(A) Leq. at any property line. Noise control measures may include, but are not limited to, the selection of quiet equipment, equipment setbacks, silencers, and/or acoustical louvers. Such measures must be designed and installed so as to achieve a cumulative sound level from mechanical equipment that does not exceed 40 dB(A) at 50 feet from the building façades adjacent to Marina Parkway, Street C, and J Street or 54 dB(A) at 50 feet from the building façades facing Street A (MMRP 4.7-4).

The requirements as noted in paragraph V above shall be implemented in compliance with the MMRP.

VI. Use of amplified sound equipment will be prohibited in Otay and Sweetwater District Parks (Settlement Agreement 6.7.1; CCDP 19.1 (g)(i)).

The requirements in paragraph VI above shall be implemented with applicable regulations and permitting processes.

VII. Amplified sound from the Harbor District should be effectively buffered or directed away from sensitive wildlife areas.

Objective 4.5-3

Construction Noise. Control construction noise using established methods and thresholds to minimize impacts to WHAs and the species using them, particularly during breeding season (Settlement Agreement 4.9.1; CCDP 8.1)

I. When possible, schedule construction activities in areas with suitable nesting habitat for migratory birds so that they begin outside of the avian breeding season (January 15 through August 31). This will allow any necessary habitat removal prior to nesting and encourage birds to selectively nest away from the construction disturbances.

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Construction-related noise shall be limited adjacent to the Sweetwater Marsh and South San Diego Bay Units of the San Diego Bay NWR, F&G Street Marsh, the mudflats west of the Sweetwater District, and the J Street Marsh, during the general avian breeding season of January 15 to August 31 (MMRP 4.7-1, 4.8-6). The current accepted threshold is 60 dB(A) Leq (MMRP 4.7-9).

II. Construction activity noise levels adjacent to sensitive wildlife areas must not exceed 60 dB(A) Leq., or ambient noise levels if higher than 60 dB(A) during the general avian breeding season (MMRP 4.7-1, 4.7-4, 4.8-6).

III. If construction does occur during the breeding season or adjacent to sensitive WHAs, the project developer(s) shall prepare and submit to the Port/City for review and approval an acoustical analysis and nesting bird survey to demonstrate that the 60 dB(A) Leq. noise level is maintained at the location of any active nest within the marsh. The analysis shall occur prior to the issuance of a building permit (or in the case of the Pacifica Project, prior to the approval of Design Review) (MMRP 4.7-1, 4.7-4, 4.7-9, 4.8-6).

IV. If the noise threshold is anticipated to be exceeded at a nest location per the acoustical analysis, the project developer shall construct noise barriers or implement other noise control measures to ensure that construction noise levels do not exceed the threshold (MMRP 4.7-1, 4.7-4, 4.7-9). Specific noise reducing measures for F&G Street Marsh include:

   A. The developer of Parcel H-3 shall install and place a 20-foot-high temporary noise barrier or wall along the northeast project property line and returns along the east and west property lines. This mitigation would be necessary for construction activity occurring within 800 feet of the habitat during the extended breeding season. The barrier must be of solid construction, with no gaps or cracks through or below the wall, and must have a minimum density of 3.5 pounds per square foot (refer to Figure 4.7-11 of the CVBMP EIR). The barrier must block line-of-sight between the source and receiver and be long enough to prevent flanking around the ends. Prior to the start of construction, upon selection of a contractor and once specific equipment models and locations, phasing, and operational duration, etc. are known, a detailed analysis shall be conducted by the project developer and approved by the Port and/or City to determine proper placement of the temporary noise barrier (MMRP 4.7-1, 4.7-5, 4.8-6).

   B. The developer shall install a 3-foot-high noise barrier along the east right-of-way of E Street for the extent of the habitat (refer to Figure 4.7-12 of the CVBMP EIR). The barrier must be of solid construction, with no gaps or cracks through or below the wall, and have a minimum density of 3.5 pounds per square foot. The barrier must block line-of-sight between the source and receiver and be long enough to prevent flanking around the ends (MMRP 4.7-7).

V. If noise attenuation measures, modifications to construction activities, or other methods are unable to reduce the noise level below 60 dB(A), either the developer(s) must immediately consult with the USFWS to develop a noise attenuation plan or construction in the affected areas must cease until the end of the breeding season (MMRP 4.7-1, 4.7-9, 4.8-6).

VI. Construction biomonitors could monitor noise levels at construction sites to ensure compliance with noise regulations, as well as monitor any adverse response of wildlife to peak noises.

VII. To avoid significant construction-related noise impacts, the following additional measures shall be followed (MMRP 4.7-8):

A. Construction activity shall be prohibited Monday through Friday from 10:00 P.M. to 7:00 A.M., and Saturday and Sunday from 10:00 P.M. to 8:00 A.M., pursuant to the Chula Vista Municipal Code Section 17.24.050 (Paragraph J).

B. All stationary noise generating equipment, such as pumps and generators, shall be located as far as possible from noise sensitive receptors, as practicable. Where practicable, noise-generating equipment shall be shielded from noise sensitive receptors by attenuating barriers or structures. Stationary noise sources located less than 200 feet from sensitive receptors shall be equipped with noise reducing engine housings. Water tanks, equipment storage, staging, and warm-up areas shall be located as far from noise sensitive receptors as possible.

C. All construction equipment powered by gasoline or diesel engines shall have sound control devices at least as effective as those originally provided by the manufacturer; no equipment shall be permitted to have an unmuffled exhaust.

D. Any impact tools used during demolition of existing infrastructure shall be shrouded or shielded, and mobile noise generating equipment and machinery shall be shut off when not in use.

E. Construction vehicles accessing the site shall be required to use the shortest possible route to and from Interstate 5, provided the route does not expose additional receptors to noise.

F. Construction equipment shall be selected as those capable of performing the necessary tasks with the lowest sound level and the lowest acoustic height possible to perform the required construction operation.

G. Construction equipment shall be operated and maintained to minimize noise generation. Equipment shall be kept in good repair and fitted with "manufacturer recommended" mufflers.

The requirements as noted above in paragraphs II, III, IV (A-B), V, and VII (A-G), shall be implemented in compliance with the MMRP.

4.6 Management of Predators, Pests, and Pets

Goal

Protect WHAs. *Predators, pests, and pets do not impact native wildlife or WHAs.*

Objective 4.6-1

Management by Design, Education, and Control Measures. Prevent predators and pests through design, education, and control measures that are sequenced and staged in a model predator and pest management plan that integrates all existing resources, including partnerships, to distribute educational materials and support enforcement.

I. Reduce the attractiveness of urban interface areas to generalist and disturbance-tolerant pest species that displace native fauna through predation, competition, or other means.

II. Design and implementation of physical exclusion, targeting unwanted predators, should be as passive as possible.

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III. Assure that all aspects of NRMP implementation do not foster a predator management problem.

Reducing Predator Perches

IV. In landscape design and maintenance plans, minimize, to the extent possible, perches that provide potential line of sight to sensitive WHAs for predatory raptors, while staying consistent with a natural sense of place.

A. Vegetation growth in Buffer Areas and other relevant areas of the CVBMP should be restricted, as feasible, to prevent line of sight perches to the salt marsh/tidal habitats and shoreline.

1. For example, no trees will be planted in the No-Touch Buffer Areas or directly adjacent to a NWR, J Street Marsh, or SP-2 areas where there is no Buffer Area (Settlement Agreement 4.7.4; CCDP 6.1(d); MMRP 4.8-6). However, trees are specifically permitted in the Harbor District per CCDP 23.1 and 23.12.

B. All buildings, signage, walkways, overlooks, light standards, roofs, balconies, ledges, and other structures that could provide line of sight views of WHAs will be designed in a manner to discourage their use as raptor perches or nests (Settlement Agreement 4.3.4; CCDP 12.1(d)). The following design criteria will be identified in the CVBMP master landscape plan and incorporated into all building/structure and landscape plans with line of sight views to sensitive WHAs (MMRP 4.5-1, 4.8-7, 4.8-6):

1. Light posts shall have anti-perching spike strips along any portions that would be accessible to raptors (MMRP 4.5-1, 4.8-7, 4.8-6).
2. The top edge of buildings shall be rounded with sufficient radius to reduce the amount of suitable perching building edges (MMRP 4.5-1, 4.8-7, 4.8-6).
3. If building tops are hard corners, spike strips shall be used to discourage raptors from perching and building nests (MMRP 4.5-1, 4.8-7, 4.8-6).
4. Decorative eaves, ledges, or other protrusions shall be designed to discourage perching by raptors (MMRP 4.5-1, 4.8-7, 4.8-6).
5. To the extent practicable, buildings on Parcels S-1, S-4, and S-2 will be oriented to reduce raptor perches within the line of sight to adjacent sensitive habitats (MMRP 4.5-1, 4.8-7, 4.8-6).

6. All predator exclusion devices will be checked and cleaned, repaired, or replaced as needed following site inspections.

The requirements as noted above shall be implemented in compliance with the MMRP.

Trash Management to Prevent Pests and Predators

V. Predator and pest attraction and trash management shall be addressed for all areas of the CVBMP project by identifying clear management measures and restrictions. Examples include design of trash containers, including those in park areas and commercial dumpsters, to be covered and self-closing at all times, design of containment systems to prevent access by sea gulls, rats, crows, pigeons, skunks, opossums, raccoons, and similar animals and adequate and frequent servicing of trash receptacles (Settlement Agreement 4.3.3; CCDP 12.1(c); MMRP 4.5-1, 4.8-7).

The requirements as noted above shall be implemented in compliance with the MMRP.

A. The Port is to prepare a Predator, Pest, and Trash Management and Implementation Plan with clear management measures and restrictions, prior to the opening of the first park or project. Refer to measures presented in Section 4.7: Trash Management.

Feral Animal Control

VI. Potentially partner with agencies and organizations to prevent the establishment of feral animal colonies through management and monitoring. Remove feral animals that establish in the area.

A. The parks will include enforcement signage that prohibits tenants, employees, residents, or visitors from feeding or encouraging feral cat colonies and prevents feral cat drop-off or abandonment of pets or unwanted animals (Settlement Agreement 6.6; CCDP 19.1 (f)).

Prior to Project Approval, the Port/City will review the site specific development proposals for compliance with paragraph A above. Provide signage and information for animal control offices and shelters where unwanted pets can be taken.

B. Integrate other programs and materials as appropriate to educate the public about feral cat and dog prevention and management to promote synergy of efforts. For example, use American Bird Conservancy materials or National Audubon Society materials to provide education on the potential impact to native species.

C. Coordinate with other jurisdictions, as appropriate, to address adjacent cat colonies that affect native wildlife in the CVBMP footprint.

Objective 4.6-2 *Adaptive Predator and Pest Management.* Implement adaptive management to minimize the threat of predators and pests.

I. Year-round, funded predator management will be implemented for the life of the Chula Vista Bayfront project with clearly delineated roles and responsibilities for the District, City, and Resource Agencies. The primary objective of such provisions will be to adequately protect terns, rails, plovers, shorebirds, over-wintering species, and other species of high management priority as determined by the Resource Agencies (Settlement Agreement 4.3.1; CCDP 12.1(a); MMRP 4.5-1, 4.8-7).

The requirements as noted in paragraph I above shall be implemented in compliance with the MMRP and funds for year-round predator management will be provided each year for the life of the project.

A. Continue current predator and pest management activities in concert with those required or recommended below. Currently, control actions are taken to protect the California least tern nesting colony located within Port jurisdiction and as necessary to respond to observed pest or predator problems within other areas of Port jurisdiction (E. Maher, pers. com. 2013).

B. Identify problem areas and effective prevention and control strategies, particularly for pigeons, rats, opossums, skunks, mice, and cats, among other pests. Provisions for predator management should build on existing predator management reports to establish a baseline for the level of effort and location.

C. Measures installed to discourage perching and nesting of predators in areas with line of sight views to sensitive WHAs should be inspected as feasible to assess their effectiveness and to maintain them in good working condition. If some measures prove ineffective even when in good working condition, alternatives should be considered and implemented.

D. Regular foot patrols and tracking techniques will be utilized to find and remove domestic or feral animals (Settlement Agreement 4.3.2; CCDP 12.1(b); MMRP, 4.8-7).

The requirements as noted in paragraph D above shall be implemented in compliance with the MMRP.

E. Review design options to include strategic sites within the CVBMP footprint where predator management staff can perform their work effectively in a manner that does not interface with the general public. Predator management should be as humane as possible.

F. Enforce no feeding of wildlife and feral animals (CCDP 19.1(f)).

1. Educate visitors on this policy. Interactive educational programs should consider incorporating information on the importance of not feeding the wildlife.

II. Prior to the issuance of a CCDP, the project developer shall prepare a raptor nest management plan to be implemented once the project is built (MMRP 4.8-6). A biologist retained by the project developer and approved by the Port and/or City shall be responsible for:

A. Monitoring the buildings and associated landscapes to determine whether raptor nests have been established on Port or City lands within 500 feet of the Preserves. If a nest is discovered, the nest would be removed in consultation with USFWS, CDFW, and the Port/City, outside of the raptor breeding season of January 15 to July 31 (MMRP 4.8-6).

B. Monitoring raptor non-native prey populations such as rats, mice, and pigeons, as feasible. In the event that pest populations should increase as a result of raptor deterrence, a biologist in consultation with USFWS, CDFW, and the Port/City should develop a control plan for the pest populations that will not harm desired wildlife species.

III. If rodenticides are required for pest control as part of IPM, they should be used in a manner that contains the target animal after ingestion so that they cannot be preyed on by other animals and result in secondary poisoning. This will help avoid harm to higher trophic levels through bioaccumulation, including raptors.

The requirements as noted above in Section II shall be implemented in compliance with the MMRP.

Objective 4.6-3 *Managing Impacts from Pets.* Prevent disturbance to native wildlife from resident and visiting pets (cats and dogs) in the CVBMP footprint.

I. Pets will be kept away from F&G Street channel mouth and marsh (Settlement Agreement 4.11.1; CCDP 10.1; MMRP 4.8-6)

II. In all areas of the CVBMP project, especially on the foot path adjacent to the marsh on the Sweetwater District property, mandatory leash laws shall be enforced. Appropriate signage shall be posted indicating human and domestic animal access is prohibited within the designated Preserve areas (MMRP 4.8-6). Enforcement to be the responsibility of the Port and City.

A. Dogs will be leashed at all times except in any designated and controlled off-leash areas (Settlement Agreement 4.1.8; CCDP 5.6; MMRP 4.8-7). Leash-free areas are prohibited near Sweetwater and Otay District buffers (Settlement Agreement 6.6; CCDP 19.1(f)).

B. Consider developing a residential dog park in the Harbor District (north of J Street), on land outside of Port jurisdiction[1]. A potential location could include the area of residential development in the Harbor District, on land owned by the City of Chula Vista or within the Pacifica project area.

C. Dogs shall not be allowed on any trails in Buffer Areas unless under the owner's control and held on a leash, due to potential for disturbance to native species.

D. Docents should help orient and instruct visitors with pets regarding pet policies, areas where pets are not permitted, and any designated leash-free areas.

E. Educational signage should be provided to communicate the reasoning for leash-required and leash-free areas.

F. Strict enforcement of leash laws and disposal of pet waste in accordance with existing regulations will be pursued.

III. Dog waste baggie stations and trash receptacles should be placed strategically throughout the CVBMP project footprint, particularly along the promenade and in the parks. Baggie stations should be refilled frequently.

IV. All resident cats will be kept indoors at all times (Settlement Agreement 4.1.9; CCDP5.7; MMRP 4.8-7).

V. Encourage pet owners living within the CVBMP to microchip their pets; such identification helps to reunite lost pets with their owners.

VI. Residential developments are required to provide education to owners and/or renters regarding the rules and restrictions regarding the keeping of pets (Settlement Agreement 4.1.9; CCDP 5.7; MMRP 4.8-7).

The requirements as noted above in paragraphs I, II (A, C-E), III, IV, and VI, shall be implemented in compliance with the MMRP.

1. Because lands within Port jurisdiction are state tidelands, all land uses must qualify as a state-wide use. Dog parks are considered a local use, not a state-wide use; as a result, they are not permissible within Port jurisdiction.

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4.7 Trash Management

Goal

Effective Trash Management Facilitates Resource Protection and Human Enjoyment. *Trash management reduces litter in public areas and WHAs, reduces attraction of pests and predators, and promotes recycling as a responsible way to dispose of waste, all contributing to protection of native wildlife and a pleasant outdoor experience.*

Objective 4.7-1

Meeting Trash Management Needs. Meet the wide variety of disposal needs including volume, location, and type of trash through effective trash management in the CVBMP project footprint. Use education and enforcement to reinforce responsible trash disposal. Encourage recycling and innovative management techniques.

I. Easily accessible trash cans and recycling containers are provided in public areas and are adequate to handle the volume of trash or recycled materials received (MMRP 4.6-6, 6.8-3, 4.8-6). In particular, containers will be placed along all walking and bike paths and shop walkways. Trash shall be emptied daily or more often if required during high use periods (MMRP 4.8-6), as is currently standard operating procedure for public spaces under Port jurisdiction (E. Maher, per. com. 2013; CCDP 1.4).

II. Buildings and stores shall have large dumpsters in a courtyard or carport that is bermed and enclosed. This ensures that, if stray trash falls to the ground during collection, it does not blow into the Bay or marshes (MMRP 4.8-6).

III. Interior and exterior storage areas are provided for recyclables and green waste (MMRP 4.6-6, 6.8-3).

IV. Identify green waste composting station(s) to facilitate re-use of materials on site and to reduce trash sent to landfills (see also Section 3.2: Watershed Approach and Section 5.0: Maximum Ecosystem Services in the Built Environment and Open Space).

V. Establish and maintain monofilament fishing line collection areas at the pier.

VI. In addition to trash can design guidelines provided in this section, use trash can designs that are spill resistant, discourage vandalism, are resistant to gulls and other nuisance animals, and have low maintenance and energy requirements (one possible option is a solar-powered, compacting trash can design).

VII. Litter will be prevented from being wind-blown off-site to the satisfaction of the Port/City as appropriate pursuant to their water quality technical reports (MMRP 4.5-1).

A. Implement measures to collect trash, including monofilament fishing line, at in-water and shoreline areas.

VIII. Construction and demolition waste is reused and recycled (including but not limited to soil, vegetation, concrete, lumber, metal, and cardboard) (MMRP 4.6-6, 6.8-3).

IX. Public education and other publicity campaigns are implemented on a regular basis to raise awareness about reducing waste and available recycling services (MMRP 4.6-6, 6.8-3).

A. Encourage vendors to reduce the amount of packaging associated with products or consumable items that they sell (e.g., plastic bags and Styrofoam containers). Use of non-recyclable packaging should be strongly discouraged.

X. Trash resulting from events will be collected and disposed of properly.

XI. Illegal dumping and littering shall be prohibited within the Preserve areas (MMRP 4.8-6).

XII. The project applicant shall include trash control measures as a condition of approval for Tenant Design Plan for projects within the Port's jurisdiction and as a condition of the approval of a Final Map for projects within the City's jurisdiction (MMRP 4.5-1). Suitable measures are those provided in this NRMP.

The requirements as noted above in paragraphs I, II, III, V, VI, VII, VIII, IX, XI, and XII, shall be implemented in compliance with the MMRP.

Objective 4.7-2 *Discouraging Pests and Predators.* Discourage attraction of pests and predators through effective design of trash receptacles and trash management measures in the CVBMP footprint.

I. Trash management measures in the recommended Port Predator, Pest, and Trash Management and Implementation Plan (refer to Section 4.6: Management of Predators, Pests, and Pets) should include, but are not limited to:

A. Design of trash containers and other containment systems, including those in parks and other outdoor use areas and commercial dumpsters, to be animal-proof to discourage scavenger animals from foraging in them (such as sea gulls, rats, crows, pigeons, skunks, opossums, raccoons, and similar animals); this includes containers that are covered and self-closing at all times (Settlement Agreement 4.3.3; CCDP 12.1(c); MMRP 4.5-1, 4.8-6);

B. Adequate and frequent servicing of trash receptacles at least as often as is necessary to prevent any overflow trash occurring (Settlement Agreement 4.3.3, 4.4.6.3; CCDP 12.1(c)). Per current standard operating procedure for public spaces under Port jurisdiction, trash is emptied daily (E. Maher, pers. com. 2013; CCDP 1.4);

C. Specifications for increases in trash pickup for special events (CCDP 1.4);

1. Currently, the permit application for large events in parks within Port jurisdiction specify that the applicant must have a waste removal plan and use BMPs such as covered trash dumpsters and prompt trash removal. Fines can be assessed if additional clean-up is required after the event;

D. Specifications for the frequency of emptying dog waste stations and restocking bags.

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E. Identifying departments and personnel etc. required for trash and pest control. Currently, control actions are taken to protect the California least tern nesting colony located within Port jurisdiction and as necessary to respond to observed pest or predator problems within other areas of Port jurisdiction (E. Maher, pers. com. 2013).

F. Measures for food vendors to help manage the trash resulting from customer purchases. This could include signs encouraging customers to use trash receptacles and vendor staff clearing up trash in their service area and vicinity several times a day.

II. No unattended food vending is allowed in Sweetwater and Otay District parks (Settlement Agreement 6.5; CCDP 19.1(e)).

Prior to Project Approval, the Port/City will review the site specific development proposals for compliance with the above.

4.8 Design of the Built Environment

Goal

Minimizing Impacts of the Built Environment. *Design of the CVBMP built environment minimizes impacts to native wildlife, including resident and migratory birds.*

Objective 4.8-1

External Lighting. Design of all external lighting and illumination in the CVBMP footprint minimizes any impact on sensitive WHAs. Operations and maintenance of the CVBMP footprint ensures appropriate long-term education and control of light impacts (Settlement Agreement 4.8.2, 4.8.3; CCDP 7.4; MMRP 4.8-6).

I. Light impacts to WHAs will be minimized to the maximum extent feasible.

A. Beacon and exterior flood lights are prohibited where they would impact a WHA and use of this lighting will be minimized throughout the project (Settlement Agreement 4.8.2; CCDP 7.2; MMRP 4.8-6).

B. All roadways shall be designed, and where necessary edges bermed, to minimize penetration of automobile lights in the WHAs, subject to applicable City and District roadway design standards (Settlement Agreement 4.8.1; CCDP 7.1; MMRP 4.8-6).

C. Ambient light impacts to the Sweetwater or J Street Marshes will be minimized to the maximum extent feasible (Settlement Agreement 4.8.3; CCDP 7.4; MMRP 4.8-6).

D. Artificial lighting of marine areas, which may trigger altered life cycle functions of marine life, should be avoided.

E. The height of lighting structures should be minimized in both the built environment and in Sweetwater and Otay District parks to the extent practicable.

F. Where feasible, low light-emitting diode (LED) lights that are directed downward shall be used.

G. Laser light shows are prohibited (Settlement Agreement 4.8.6; CCDP 7.6; MMRP 4.8-6).

The requirements as noted in paragraph G above shall be implemented in compliance with the MMRP.

1. If laser light shows are demonstrated to pose fewer impacts to sensitive wildlife than fireworks shows, reconsidering the possibility of conducting them within the CVBMP footprint as an alternative to fireworks shows may require revisiting CCC approvals since the prohibition is specified in the Controlling Documents.

H. Construction lighting is controlled to minimize WHAs impacts (Settlement Agreement 4.8.7; CCDP 7.7; MMRP 4.8-6).

The requirements as noted in paragraph H above shall be implemented in compliance with the MMRP.

I. The Recreational Vehicle Parks and campground shall install and direct visitors to use downward focused lighting to prevent lighting impacts to sensitive WHAs. This practice is in line with lighting already in place at the Chula Vista Marina.

II. Prior to issuance of a building permit (or the construction of parks/park amenities), each applicant within the Port's or City's jurisdiction shall prepare a lighting design plan including specifications for outdoor lighting locations and other intensely lighted areas, including a photometric analysis, to be reviewed by the Port or City, as appropriate. Specifications shall identify the lighting intensity needs and design light fixtures to direct light toward intended uses. Each plan shall illustrate the location of the proposed lighting standards and type of shielding measures and shall incorporate specific design features including, but not limited to the following, as appropriate to the specific locations (MMRP 4.8-6, 4.9-6, 4.4-2):

A. All exterior lighting (including in parking lots) shall be directed away from adjacent properties as well as the habitat buffers, Preserve Areas, habitats, or open water, wherever feasible and consistent with public safety (MMRP 4.8-6, 4.9-6).

B. Where necessary, lighting of all developed areas adjacent to the habitat buffers, Preserve Areas, habitats, or open water shall provide adequate shielding with non-invasive plant materials (preferably native), berming, and/or other methods to protect the habitat buffers, Preserve Areas, habitats, or open water and sensitive species from night lighting (MMRP 4.8-6, 4.9-6).

C. The light structures themselves shall have shielding (and incorporate anti-raptor perching criteria); but the placement of the light structures shall also provide shielding from wildlife habitats and shall be placed in such a way as to minimize the amount of light reaching adjacent habitat buffers, Preserve Areas, habitats, or open water. This includes street lights, pedestrian and bicycle path lighting, and any recreational lighting (MMRP 4.8-6, 4.9-6).

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D. All exterior lighting immediately adjacent to habitat buffers, Preserve Areas, habitats, or open water shall be low-pressure sodium lighting or other approved equivalent and be low to the ground (CCDP 7.8; MMRP 4.8-6, 4.9-6).

III. All street and walkway lighting will be shielded to minimize sky glow (Settlement Agreement 4.8.2; CCDP 7.3; MMRP 4.8-6). This includes lighting on building exteriors.

IV. All event lighting shall be directed downward and shielded, unless directed downward or shielded to minimize light spill beyond the area for which illumination is required (MMRP 4.4-2).

V. In Sweetwater and Otay District parks, lighting will be limited to that which is necessary for security purposes (Settlement Agreement 4.8.4; CCDP 7.8; MMRP 4.8-6).

A. Security lighting will be strictly limited to that required by applicable law enforcement requirements and all lighting proposed for the parks and the shoreline promenade will be placed only where needed for human safety (Settlement Agreement 4.8.4; CCDP 7.8; MMRP 4.8-6).

B. Lights will be placed on low-standing bollards, shielded, and flat-bottomed, so the illumination is directed downward onto the walkway and does not scatter (Settlement Agreement 4.8.4; CCDP 7.8; MMRP 4.8-6). Where appropriate, lighting of pathways should be located in the path with low light.

C. Lighting that emits only a low-range yellow light will be used to minimize ecological disruption (Settlement Agreement 4.8.4; CCDP 7.8; MMRP 4.8-6).

D. No lighting for active sports facilities is permitted, particularly on the recreation fields near J Street Marsh or Sweetwater Marsh (Settlement Agreement 4.8.4; CCDP 7.8; MMRP 4.8-6). This also includes open areas near J Street Marsh and Sweetwater Marsh.

E. The parks will open and close in accordance with District Park regulations (Settlement Agreement 4.8.5; CCDP 7.5; MMRP 4.8-6).

The requirements as noted above in Sections I (A, B, C) and II through V, shall be implemented in compliance with the MMRP.

Objective 4.8-2 *Avoiding Bird Strikes and Disorientation.* Avoid bird disorientation and mortality through design principles for buildings, use of materials, and landscaped areas.

I. Prior to issuance of any building permits, building plans shall be reviewed by a qualified biologist retained by the developer and approved by the District, to verify that the proposed building has incorporated specific design features to avoid or to reduce the potential for bird strikes, including additional measures provided under the subheadings below (CCDP 4.1; MMRP 4.8-23).

The requirements as noted above in paragraph I shall be implemented in compliance with the MMRP.

II. Place power lines and electrical infrastructure underground to the extent possible to achieve a goal of no bird strikes with electrical infrastructure. This will also reduce raptor perching and nesting platforms.

III. Consider employing a building design and management checklist, similar to the one used by the City of San Francisco (2011), shown below.

Lighting:

Lighting provided in and around buildings will be minimized to discourage bird attraction or disorientation (CCDP 4.1.1; MMRP 4.8-23). This includes the measures specified above as well as the following:

IV. No solid red or pulsating red lights shall be installed on or near the building unless required by the Federal Aviation Administration (CCDP 4.1.1(a); MMRP 4.8-23).

V. Where lighting must be used for safety reasons (Federal Aviation Administration 2000 Advisory Circular), minimum intensity, maximum off-phased (three seconds between flashes) white strobes shall be used (CCDP 4.1.1(b); MMRP 4.8-23 and 4.4-2).

VI. No solid spot lights or intense bright lights shall be used during bird migration periods in the spring (from March to May) and fall (from August to October). All event lighting shall be directed downward and shielded, unless such directed and shielded minimized light spills beyond the area for which illumination is required (CCDP 4.1.1(c); MMRP 4.8-23, 4.4-2).

VII. Exterior lighting shall be limited to that which is necessary and appropriate to ensure general public safety and way finding, including signage for building identification and way finding (CCDP 4.1.1(d); MMRP 4.8-23, 4.4-2).

VIII. Exterior lighting shall be directed downward and shielded to prevent upward lighting and to minimize light spill beyond the area for which illumination is required (CCDP 4.1.1(e); MMRP 4.8-23, 4.4-2).

IX. Office space, residential units, and hotel rooms shall be equipped with motion sensors, timers, or other lighting control systems to ensure that lighting is extinguished when the space is unoccupied (CCDP 4.1.1(f); MMRP 4.8-23, 4.4-2).

X. Recommend daytime cleaning of offices to minimize light usage outside of business hours.

XI. Office space, residential units, and hotel rooms shall be equipped with blinds, drapes, or other window coverings that may be closed to minimize the effects of interior night lighting (CCDP 4.1.1(g); MMRP 4.8-23, 4.4-2).

The requirements as noted in paragraphs IV-IX and XI above shall be implemented in compliance with the MMRP.

Glass and Reflective Surfaces:

Best practices for glass and other reflective surfaces should be used to reduce bird collisions and disorientation (see also City of San Francisco Bird-Safe Building Checklist [2011]).

XII. Use of reflective glass or reflective coatings on any glass surface is prohibited (Settlement Agreement 4.5; CCDP 4.1.2(a); MMRP 4.8-23, 4.4-2).

XIII. Buildings shall incorporate measures to the satisfaction of the District or the City to indicate to birds that the glass surface is solid by creating visual markers and muting reflection (CCDP 4.1.2(b); MMRP 4.8-23).

A. Focus treatment on the first four stories or up to tree height in the surrounding area (City of Toronto 2007; City of Calgary 2011). The City of Portland suggests up to 40 feet (2012).

XIV. Project design standards will encourage window stenciling and angling (Settlement Agreement 4.5.3; CCDP 4.1.2(c); MMRP 4.8-23).

A. High priority should be placed on angling windows to reflect the ground, not the sky.

B. Investigate the use of streamers in front of or near high-risk windows to determine if they could be an effective design element.

XV. Additional measures may include, but are not limited to the following (CCDP 4.1.2(d); MMRP 4.8-23):

A. Glass surfaces which are non-reflective (CCDP 4.1.2(d)(i)).

B. Glass surfaces which are tilted at a downward angle (CCDP 4.1.2(d)(ii)).

1. A minimum 20 degree angle is recommended; a 40 degree angle is preferred (City of Toronto 2007; City of Calgary 2011).

C. Glass surfaces which use fritted or patterned glass (CCDP 4.1.2(d)(iii)).

1. Patterns applied on the outside of the glass are preferred (City of Portland 2012).

D. Glass surfaces which use vertical or horizontal mullions or other fenestration patterns (CCDP 4.1.2(d)(iv)).

1. City of Toronto Green Development Standard (2007) and City of Calgary (2011) recommend 10–28 centimeters maximum separation when using grills, screens, louvers, or mullions. City of Portland (2012) suggests spacing of 4 inch vertical x 2 inch horizontal maximum.

E. Glass surfaces which are fitted with screening, decorative grills, or louvers (CCDP 4.1.2(d)(v)).

F. Glass surfaces which use awnings, overhangs, bris sole, or other exterior sun-shading devices (CCDP 4.1.2(d)(vi)).

G. Glass surfaces which use external films or coatings perceivable by birds (CCDP 4.1.2(d)(vii)).

VI. Bird-Safe Building Checklist

Use of this checklist: This checklist serves three purposes: 1) assessing risk factors and determining risks which must be addressed by the requirements); 2) increasing awareness of risk factors that are de minimis and don't require treatment; and 3) evaluating buildings for certification as a bird-safe building.

1 REQUIREMENTS FOR THE MOST HAZARDOUS CONDITIONS: The conditions that warrant special concern in San Francisco are designated by red-shaded boxes. These red boxes indicate prohibited building conditions or conditions which are only permitted if the glazing is installed with bird-safe glazing treatments. If the project combines a glass façade with a high-risk location ("location-related hazard", line 5-7), glazing treatments will be required for the façade(s) such that the amount of untreated glazing is reduced to less than 10% for the façade facing the landscaping, forest, meadow, grassland, wetland, or water. If a project creates a new bird-trap or "feature-related hazard" (lines 19-22) or remodels an existing feature-related hazard, bird-safe treatment will be required.

2 INCREASING AWARENESS: Owners of buildings with a façade of greater than 50% glass (lines 9 -10) are strongly encouraged to evaluate the building against the checklist and to help provide future tenants with copies of this guide. Use this checklist to evaluate design strategies for building new structures and retrofitting existing buildings throughout the City. This checklist summarizes conditions that could contribute to bird mortality and will help to identify the potential risks. Interested neighborhood groups and trade associations are encouraged to contact the Department for suggestions on how to proactively increase awareness of the issue and make bird safety practices a part of the construction lexicon.

3 VOLUNTARY RATINGS: Project sponsors interested in submitting a project for "Bird-Safe Certification" may use this form. The Department will partner with local artists to produce appropriate artwork and/or plaques to acknowledge those who actively seek to reduce bird collisions on their property. The ratings system will create tiers certification to recognize projects that meet minimum requirements as well as those projects that exceed the requirements.

RISK ASSESSMENT LEGEND:

Potential Risk Factors: These shade indicate factors that may present hazards to birds. Note: actual risks vary greatly depending upon building and site-specific variables.

GRAY: This shade indicates potential increased risk. NOTE: *The net assessment of total risk varies with the combination of building factors. While every building in San Francisco will present some element of risk to birds, only combinations with "red" boxes present a risk level necessitating bird-safe treatments.*

RED: This shade indicates prohibited conditions or conditions which are prohibited unless bird-safe treatment is applied.

CERTIFICATION LEGEND:

Bird-Safe Building Certification and Acknowledgement: Buildings which avoid creating hazards or which enhance bird safety with treatments identified as effective in this document would be acknowledged by the City and could be marketed as such. This document proposes three levels of certification by the City. Certification is determined by applying the checklist criteria.

By checking all of the boxes for one (or more) of these colors on the Bird-Safe Building Checklist (page 39), a building owner is eligible to apply to the Planning Department for Bird-Safe Building Certification.

Yellow: Bird-Safe Building
The building meets the minimum conditions for bird-safety. This level focuses on ensuring "bird-hazards" and "bird traps" are not created or are remedied with bird-safe treatments.

Green: Select Bird-Safe Building
The building meets all of the minimum requirements; commits to "lights out" practices during migratory seasons; reduces untreated glazing beyond the requirements; and commits to educating future building occupants.

Blue: Sterling Bird-Safe Building
This is the highest level of Bird-Safe Building certification possible. The building meets all of the conditions of the other certification levels, plus the building reduces the amount of glass on the façade, avoids or treats additional hazards—beyond the requirements, and features year-round best management practices for lighting.

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BIRD-SAFE BUILDING CHECKLIST

Using the key on page 38, complete this checklist to evaluate potential bird-hazards or eligibility for Bird-Safe Building Certification.

		QUESTION		YES	NO
MACRO-SETTING (PAGE 12-16)		**Is the structure located within a major migratory route?** (All of San Francisco is on the Pacific Flyway)			
		Is the location proximate to a migratory stopover destination? (Within 1/4 mile from Golden Gate Park, Lake Merced or the Presidio)			
		Is the structure location in a fog-prone area? (Within 1/2 mile from the ocean or bay)			
MICRO-SETTING (LOCATION-RELATED HAZARD) (PAGES 13, 16, 28-29)		**Is the structure located such that large windows greater than 24 square feet will be opposite of, or will reflect interlocking tree canopies?**			
		Is the structure inside of, or within a distance of 300 feet from an open space 2 acres or larger dominated by vegetation? (Requires treatment of glazing, see page 28)			
		Is the structure located on, or within 300 feet from water, water features, or wetlands? (Requires treatment of glazing, see page 28)			
		Does the structure feature an above ground or rooftop vegetated area two acres or greater in size? (Requires treatment of glazing, see page 29)			
GLAZING QUANTITY (PAGE 8)		**Is the overall quantity of glazing as a percentage of façade:** (Risk increases with amount of glazing)	**Less than 10%?**		
			More than 50%? (Residential Buildings in R-Districts must treat 95% of unbroken glazed segments 24 square feet or greater in size if within 300 feet of an Urban Bird Refuge.)		
		Will the glazing be replaced?	**More than 50% glazing to be replaced on an existing bird hazard (including both feature-related hazards as described in lines 19-22 and location-related hazard as described in lines 4-7)?** (Requires treatment see pages 29 and 31.)		
GLAZING QUALITY (PAGE 6, 7)		**Is the quality of the glass best described as:**	**Transparent** (If so, remove indoor bird-attractions visible from outside the windows.)		
			Reflective (If so, keep visible light reflectance low (between 10-20%) and consider what will reflect in the windows. Note: Some bird-safe glazing such as fritting and UV spectrum glass may have higher reflectivity that is visible to birds.)		
			Mirrored or visible light reflectance exceeding 30%. (Prohibited by Planning Code.)		
GLAZING TREATMENTS (PAGE 18-21)		**Is the building's glass treated with bird-safe treatments such that the "collision zone" contains no more than 10% untreated glazing for identified "location-related hazards" (lines 4-7) and such that 100% of the glazing on "feature-related hazards" (lines 19-22) is treated?**			
		Is the building's glass treated for required "bird hazards" (as described in line 13) *and* such that no more than 5% of the collision zone (lower 60') glazing is untreated but not for the entire building?			
		Is the building glazing treated (as described above in lines 14 and 15) *and* such that no more than 5% of the glazing on the exposed façade is left untreated?			
BUILDING FAÇADE GENERAL (PAGE 9-13)		**Is the building façade well-articulated (as opposed to flat in appearance)?**			
		Is the building's fenestration broken with mullions or other treatments?			
		Does the building use unbroken glass at lower levels?			
BUILDING FEATURE-RELATED HAZARDS AND BIRD TRAPS (PAGE 8, 30-31)		**Does the structure contain a "feature-related" hazard or potential "bird trap" such as:**	**Free standing clear-glass walls, greenhouse or other clear barriers on rooftops or balconies?** (Prohibited unless the glazing is treated with bird-safe applications.)		
			Free standing clear-glass landscape feature or bus shelters? (Prohibited unless the glazing is treated with bird-safe applications.)		
			Glazed passageways or lobbies with clear sight lines through the building broken only by glazing?		
			Transparent building corners?		
LIGHTING DESIGN (PAGE 10, 28)		**Does the structure, signage or landscaping feature uplighting?** (Prohibited within 300 feet of an Urban Bird Refuge)			
		Does the structure minimize light spillage and maximize light shielding?			
		Does the structure use interior "lights-out" motion sensors?			
		Is night lighting minimized to levels needed for security?			
		Does the structure use decorative red-colored lighting?			
LIGHTING OPERATIONS (PAGE 12, 24-25)		**Will the building participate in San Francisco Lights Out during the migration seasons?** (February 15-May 31 and August 15-November 30th) To achieve "sterling" certification the building must participate in year-round best management practices for lighting.			
OTHER BUILDING ELEMENTS (PAGE 23)		**Does the structure feature rooftop antennae or guy wires?**			
		Does the structure feature horizontal access wind generators or non-solid blades? (Prohibited within 300 feet of an Urban Bird Refuge)			
CONSENT (PAGE 34)		**Does the building owner agree to distribute San Francisco's Bird-Safe Building Standards to future tenants?**			

Authorized Signature x _____ Date: _____

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1. Example products include CollidEscape and ABCBirdTape.

H. Artwork, drapery, banners, and wall coverings that counter the reflection of glass surfaces or block "see through" pathways (CCDP 4.1.2(d)(viii)).

Prior to Project Approval, the Port/City will review the site specific development proposals for compliance with the Glass and Reflective Surfaces paragraphs XII-XV (A-H) above.

Building Articulation:

Buildings to be articulated within the CVBMP built environment such that they minimize potential for bird strikes.

XVI. Structure design will include secondary and tertiary setbacks and, to the maximum extent possible, stepped back building design, protruding balconies, recessed windows, and mullioned glazing systems, shall be incorporated to the extent feasible. Balconies and other elements will step back from the water's edge (Settlement Agreement 4.5; CCDP 4.1.3(a); MMRP 4.8-23).

XVII. The tallest buildings on Parcel H-3 will be located generally on the southern portion of the parcel with building heights decreasing towards the north and west. The foregoing will not be interpreted to preclude incorporating secondary and tertiary setbacks along public streets (Settlement Agreement 4.5.5; CCDP 23.14; MMRP 4.8-23). Hotel structures shall be no more than a maximum height of 240 feet and the conference facility height is limited to a maximum of 120 feet (CCDP 23.14).

XVIII. Parcels containing surface parking, such as those depicted for the Sweetwater District, will be designed with parking lots located nearer to the WHAs. Site plans on parcels adjacent to WHAs will maximize distance between structures and such areas (Settlement Agreement 4.5.2; CCDP 4.1.3(d); MMRP 4.8-23).

XIX. Buildings shall be sited and designed to minimize glass and windows facing WHAs to the maximum extent possible. Design for towers on Parcel H-3 should avoid east-west monolith massing and should include architectural articulation (Settlement Agreement 4.5.1; CCDP 4.1.3(c) and 23.14; MMRP 4.8-23).

XX. Design features that increase the potential for bird strikes, such as walkways constructed of clear glass and "see through" pathways through lobbies, rooms and corridors, shall be avoided except for minor features intended to enhance view opportunities at grade level and only when oriented away from large open expanses (CCDP 4.1.3(b); MMRP 4.8-23).

The requirements as noted above in paragraphs XVI, XVII, XVIII, XIX, and XX shall be implemented in compliance with the MMRP.

Landscaped Areas:

Landscape plants used in the built environment (both within and outside of buildings) should be placed in a way as to minimize bird disorientation caused by reflection.

XXI. Exterior trees and other landscape plants shall be located [away from windows] and glass surfaces shall incorporate measures so that landscape plants are not reflected on building surfaces (CCDP 4.1.4(a); MMRP 4.8-23).

XXII. In small exterior courtyards and recessed areas, the building's edge shall be clearly defined with opaque materials and non-reflective glass (CCDP 4.1.4(b); MMRP 4.8-23).

XXIII. Interior plants shall be located a minimum of 10 feet away from glass surfaces to avoid or reduce the potential for attracting birds (CCDP 4.1.4(c); MMRP 4.8-23).

Prior to Project Approval, the Port/City will review the site specific development proposals for compliance with the above.

Objective 4.8-3 *Bird Strikes Monitoring and Education.* Monitoring for and public education about bird strikes is ongoing, adaptive and identifies problem areas to be addressed through refinement of management and strike prevention measures.

I. For Phase I projects, the project applicant shall retain a qualified biologist to design a protocol and schedule, in consultation with the USFWS and subject to the approval of the District or City, as appropriate depending on jurisdiction, to monitor bird strikes which may occur during the first 12 months after the completion of construction. Within 60 days after completion of the monitoring period, the qualified biologist shall submit a written report to the District or the City, which shall state the biologist's findings and recommendations regarding any bird strikes that occurred. Based on the findings of those reports, the District or the City, as appropriate depending on jurisdiction, in coordination with the USFWS, will evaluate whether further action is required, which may include further monitoring or redesign of structures for future phases (CCDP 4.1.6; MMRP 4.8-23). Reports will be shared with the WAG.

II. Continue to monitor bird strikes throughout the life of the development. Develop measures to address persistent problem areas in accordance with this NRMP (Settlement Agreement 4.5.4; CCDP 4.2; MMRP 4.8-23)

A. Nighttime lighting in tower buildings will be addressed and evaluated through adaptive management such that impacts on birds are avoided and minimized (Settlement Agreement 4.5.4; CCDP 4.2; MMRP 4.8-23). Lighting will be screened to the maximum extent possible (see detail above).

B. Minimization of impacts of buildings on birds and the WHAs will continue to be a priority in the selection of window coverings, glass color, other exterior materials, and design of exterior lighting and lighting of signs (Settlement Agreement 4.5.4; CCDP 4.2; MMRP 4.8-23).

C. Seek to coordinate bird strike monitoring efforts with partners and volunteer organizations. Share monitoring results as appropriate (e.g., USFWS, CDFW, CCC, City of Chula Vista, Port, and the public upon request).

III. Public education regarding the potential for and danger of bird strikes in the built environment should target tenants, residents, and visitors to the CVBMP area. Education programs and materials should be updated as needed, based on bird strike monitoring results.

A. The owner or operator of each building shall implement an ongoing procedure to the satisfaction of the District or the City to encourage tenants, residents, and guests to close their blinds, drapes, or other window coverings to reduce or avoid the potential for bird strikes (CCDP 4.1.5(a); MMRP 4.8-23).

B. The owner or operator of each building shall enroll in the Fatal Light Awareness Program's "Bird-Friendly Building Program" and shall implement ongoing tenant, resident, and guest education strategies, to the satisfaction of the District or the City, to reduce or avoid the potential for bird strikes, such as elevator and lobby signage and educational displays, e-mail alerts and other bulletins during spring and fall migratory seasons, and other activities designed to enlist cooperation in reducing bird collisions with the building (CCDP 4.1.5(b); MMRP 4.8-23).

The requirements as noted above in paragraphs I, II, and III.A and III.B, shall be implemented in compliance with the MMRP.

Figure 4-4. Concept of a furnishing for the urban-wildland interface.

5.0 Maximum Ecosystem Services in the Built Environment and Open Space

Built environments often have a net negative impact on ecosystem services (i.e., they use more than they produce),. The purpose of this chapter is to focus attention on strategies that provide a net benefit to the environment.

"Ecosystem services are taken for granted and until recently have not been calculated as part of the economic equation. We have separated ourselves from the natural process rather than understanding we are part of it. Our global civilization rests on the foundation of natural capital. This includes climate regulation, filtration of fresh water through wetlands, soil production, natural freshwater reservoirs retained by snowpack and glaciers, plant pollination, production of the forest ecosystems and the world's oceans." -Mike McCoy, Southwest Wetlands Interpretive Association

Maximizing ecosystem services in the built environment begins with principles of sustainable design of buildings and landscapes. Net-positive impacts to ecosystem services can be reached using green space between buildings through ecological grounds design and maintenance, stormwater retention, wildlife friendly gardens and parks, and edible gardens. Typically, development of built environments consumes natural resources such as forest products, agricultural land, water and air to provide for the consumption needs of inhabitants. Development and maintenance policies for municipal infrastructure, purchasing, and service delivery can have a negative impact on ecosystem services, but this need not be the case. By taking less and providing more, the balance sheet of ecosystem services consumed and produced within the built environment and open space approaches neutral to positive impact as compared to the current environment.

A compelling case can be made that implementation of reasonable and sustainable design, construction, and management guidelines for the built environment, prior to the initiation of the CVBMP development, can provide ecosystem services. Appropriate landscape design serves to reduce the *ecological footprint* of the CVBMP development as well as provide for the production of ecosystem services.

This chapter provides goals, objectives, and strategies to achieve that end, while complying with agency requirements.

5.1 Key Messages

- Maximizing ecosystem services and natural resource protection in the CVBMP area is an overarching strategy for achieving sustainability.
- Effective management of the water cycle within the built environment and open space can significantly reduce the consumption of ecosystem services, while contributing to ecological and human well-being.
- Integration of open space with the built environment supports all residents, employees, guests and the general public and draws people to the Chula Vista Bayfront.

- Alternative modes of transportation reduce greenhouse gas (GHG) emissions and contribute to ecosystem services.
- Appropriate planning, design, and maintenance of built environment and open space landscapes maximize the production of ecosystem services.
- The two featured parks in Sweetwater and Otay Districts are the natural jewels of the CVBMP footprint.
- Parks and Buffer Areas are integral to adaptation to sea level rise.
- Open space, including parks and Limited Use Buffer Areas, provides for a unique sense of place.

This chapter is organized in five sections:

5.2 The Built Environment

Goal

Sustainability and Resource-Use Efficiency. *Planning, development and management of the built environment establishes sustainability and resource-use efficiency.*

Objective 5.2-1

Balanced Ecosystem Services. The use and production of ecosystem services within the built environment are balanced.

65065 104

I. Optimize ecosystem services in the built environment by designing for LID,[1] conservation of natural resources and ecosystem benefits (Port of San Diego Climate Action Plan 2013).

Three Design Principles Inspired by Natural Systems

Everything is a resource for something else. In nature, the discharge of one system becomes food for another. Buildings can be designed to be disassembled and safely returned to the soil (biological nutrients), or re-utilized as high quality materials for new products and buildings (technical nutrients).

Use renewable energy. Living things thrive on the energy of current solar income. Similarly, human constructs can utilize renewable energy in many forms-such as wind, geothermal and gravitational energy-thereby capitalizing on these abundant resources while supporting human and environmental health.

Celebrate diversity. Around the world, geology, hydrology, photosynthesis and nutrient cycling, adapted to locale, yield an astonishing diversity of natural and cultural life. Designs that respond to the unique challenges and opportunities offered by each place fit elegantly and effectively into their own niches.

Source: William McDonough and Partners 2014[a]

a. McDonough is one of the principal innovators and practitioners of green architecture in North America. The former Dean of the College of Architecture at the University of Virginia is now in private practice in Charlottesville, Virginia.

II. Reduce the impacts of urban heat islands, such as parking lots, with the use of cool paving, cool roofs, shade trees and other technologies.

III. Incorporate technologies that enhance water quality and improve stormwater management where appropriate and effective. These include permeable pavement, rooftop gardens, rain gardens and similar LID technologies.

IV. Consistent with all provisions of the PMP, place new structures a sufficient distance landward or incorporate other sea level rise adaptation strategies to eliminate or minimize, to the maximum extent feasible, hazards associated with anticipated sea level rise over the expected economic life of the structure (CCDP 3.2).

> *Prior to Project Approval for site-specific development proposals, the Port/City will require the Project Proponent to provide documentation to ensure the above requirements are met.*

Objective 5.2-2

Efficient Water Use. Water, a primary natural resource within the CVBMP footprint, is used as efficiently as possible to reduce overall volume of water consumed. Water reuse and recycling is implemented where feasible.

I. Create water-efficient landscapes (MMRP 4.6-6, 6.8-3).
   A. Install state-of-the-art water-efficient irrigation systems and devices, such as soil moisture-based irrigation controls and subsurface irrigation delivery systems (MMRP 4.6-6, 6.8-3).
   B. Use reclaimed water for landscape irrigation in new developments and on public property where appropriate. Install the infrastructure to deliver and use reclaimed water (MMRP 4.6-6, 6.8-3).

1. In LID, hydrological functions of storage, infiltration, and groundwater recharge, as well as the volume and frequency of discharges are maintained through the use of integrated and distributed micro-scale stormwater retention and detention areas, reduction of impervious surfaces, and lengthening of flow paths and runoff time (Coffman 2000). This contrasts with conventional approaches that typically convey and manage runoff in large facilities located at the base of drainage areas.

C. Incorporate a network of rainwater harvesting structures such as rain barrels or cisterns to collect rooftop rainwater, to maximize its reuse for maintained landscapes.

II. Design buildings to be water efficient (MMRP 4.6-6, 6.8-3).

A. Install water-efficient fixtures and appliances (MMRP 4.6-6, 6.8-3).

B. Use gray water from on-site buildings for irrigation use. (Gray water is untreated household wastewater from bathtubs, showers, bathroom wash basins, and water from clothes washing machines. Gray water can also be treated on-site to remove undesirable contents such as soaps and detergents.) For example, install dual plumbing in all new development allowing gray water to be used for landscape irrigation (MMRP 4.6-6, 6.8-3).

1. When gray water is used for irrigation, the soil in the area being irrigated will be periodically monitored.

III. Regulate watering methods (e.g., prohibit systems that apply water to non-vegetated surfaces) and strictly control runoff (MMRP 4.6-6, 6.8-3).

IV. Regulate the use of water for cleaning outdoor surfaces and vehicles (MMRP 4.6-6, 6.8-3). See also Section 3.0: Minimizing Harm to Neighboring Wetlands and Marine Waters.

V. Implement LID development practices that maintain the existing hydrologic character of the site to manage stormwater and protect the environment. (Retaining stormwater runoff on-site can significantly reduce the need for energy-intensive imported water at the site) (MMRP 4.6-6, 6.8-3). See also Section 3.0: Minimizing Harm to Neighboring Wetlands and Marine Waters.

VI. During the development planning phase, devise a comprehensive water conservation strategy. The strategy may include many of the specific items listed above, plus other innovative measures that are appropriate. A comprehensive strategy may also provide for a stance of readiness to adopt water recycling technologies as these become approved by local water authorities (MMRP 4.6-6, 6.8-3).

VII. Take advantage of all opportunities to educate residents, employees and the public about water conservation and available programs and incentives (MMRP 4.6-6, 6.8-3).

The requirements as noted in paragraphs II-VII above shall be implemented in compliance with the MMRP.

Objective 5.2-3 *Energy Efficiency and Renewable Energy.* Ensure that the CVBMP development is comprised of high performance and highly energy-efficient buildings and clean, efficient generation. The development of the CVBMP offers the Port and City a unique opportunity to demonstrate the viability of responsible and sustainable development practices (Settlement Agreement 15; CCDP 15).

I. Prior to the issuance of certificates of occupancy or building permits, the project applicant shall demonstrate that the Proposed Project complies with the above for Title 24 of the California Energy Efficient Standards for Residential and Nonresidential Buildings. These requirements, along with the following measures, shall be incorporated into the final project design to the satisfaction of the Port and the Director of Planning and Building for the City (MMRP 4.16-1 through 4.16-6):

   A. Use of low NOx emission water heaters;

   B. Installation of energy-efficient and automated air conditioners when air conditioners are provided;

   C. Energy-efficient parking area lights;

   D. Exterior windows shall be double paned.

"Energy efficiency combined with alternative energy could eliminate space heating demands and would produce enough electricity to power more than one building in a complex servicing efficient appliances. This project could serve as a model for energy efficiency and electrical energy production." - Mike McCoy, Southwest Wetlands Interpretive Association

II. Energy efficiency and renewable energy strategies may include, but are not limited to:

   A. Design buildings to be energy efficient. Site buildings to take advantage of shade, prevailing winds, landscaping, and sun screens to reduce energy use (MMRP 4.6-6, 6.8-3).

   B. Install efficient lighting and lighting control systems. Use daylight as an integral part of lighting systems in buildings (MMRP 4.6-6, 6.8-3).

   C. Install light colored "cool" roofs, cool pavements, and strategically placed shade trees (MMRP 4.6-6, 6.8-3; see also 5.1, first objective II).

   D. Provide information on energy management services for large energy users (MMRP 4.6-6, 6.8-3).

   E. Install energy-efficient heating and cooling systems, appliances and equipment, and control systems (MMRP 4.6-6, 6.8-3).

   F. Install LEDs for traffic, street, and other outdoor lighting (MMRP 4.6-6, 6.8-3).

   G. Limit the hours of operation for outdoor lighting (MMRP 4.6-6, 6.8-3).

   H. Use solar heating, automatic covers, and efficient pumps and motors for pools and spas (MMRP 4.6-6, 6.8-3).

   I. Provide education on energy efficiency (MMRP 4.6-6, 6.8-3).

   J. Install solar and wind power systems, solar and tankless hot water heaters, and energy-efficient heating ventilation and air conditioning. Educate consumers about existing incentives (MMRP 4.6-6, 6.8-3).

   K. Install solar panels on carports and over parking areas (MMRP 4.6-6, 6.8-3).

   L. Use combined heat and power in appropriate applications (MMRP 4.6-6, 6.8-3).

   M. Recover by-product methane to generate electricity (MMRP 4.6-6, 6.8-3).

The requirements as noted in paragraphs A-M above shall be implemented in compliance with the MMRP.

Credits towards energy reduction requirements:

III. Participation in a City of Chula Vista sponsored energy efficiency program provided that the resulting energy reduction may be calculated and verified. The methodology for calculating the amount of the credit toward the minimum of a fifty (50) percent energy reduction requirement under the Title 24 Path and the LEED Path is described in Exhibit 3 (Settlement Agreement 15.2.2.3; CCDP 15.1(f); see Appendix G: Energy Efficiency Requirements).

IV. Participation in one of SDG&E's Voluntary Demand Reduction (DR) utility rates will be awarded a waiver for three (3) percent credit against the Baseline to determine compliance with the minimum of a fifty (50) percent energy reduction requirement (Settlement Agreement 15.2.2.5; CCDP 15.1(h)).

V. Participation in one of SDG&E's Mandatory DR utility rates will be awarded a waiver for five (5) percent credit against the Baseline to determine compliance with the minimum of a fifty (50) percent energy reduction requirement (Settlement Agreement 15.2.2.6; CCDP 15.1(i)).

VI. Incorporation of natural ventilation into design such that at least 75% of the condition area is naturally ventilated according to the guidelines set forth in Exhibit 3 (see Appendix G: Energy Efficiency Requirements), and if this benefit was not included in the energy efficiency calculations, the project will be awarded either: a waiver for five (5) percent credit against the Baseline to determine compliance with the minimum of a fifty (50) percent energy reduction requirement; or, a waiver for ten (10) percent credit will be awarded if the natural ventilation system is coupled with an energy or cooling system that does not draw from the grid if and when natural ventilation is not used. This may be prorated if less than seventy-five (75) percent of the conditioned area is naturally ventilated (Settlement Agreement 15.2.2.7; CCDP 15.1(j)).

VII. Each Development will develop, implement, and for the life of the each Development, maintain a measurement and verification plan ("M&V Plan") (Settlement Agreement 15.2.2.4; CCDP 15.1(g)).

   A. Such participation has been shown to increase the persistence of energy efficiency ("EE") and also to provide a way of recognizing and encouraging the ongoing conservation efforts of occupants and facility managers and will be awarded a waiver for five (5) percent credit against the Baseline to determine compliance with the minimum of a fifty (50) percent energy reduction requirement (Settlement Agreement 15.2.2.4; CCDP 15.1(g)).

   B. The District will include in all leases the requirement to perform an energy audit every three (3) years for the convention centers and hotel Developments over 300 rooms and five (5) years for all other Developments to ensure that all energy systems are performing as planned or corrective action will be taken if failing to meet EE commitments (Settlement Agreement 15.2.2.4; CCDP 15.1(g)).

Prior to Project Approval for applicable site-specific development proposals, the Port/City will require the Project Proponent to provide documentation to ensure the above requirements are met.

VIII. Within one year following the CCC approval of a PMP amendment substantially consistent with the CVBMP, the District will in good faith consider adoption of an ordinance in a public hearing process that, if approved by the Board of Port Commissioners, will require the following: (Settlement Agreement 15.2.5; CCDP 15.2)

A. Within six (6) months following adoption of the ordinance and every three (3) years thereafter, the District will conduct an energy efficiency and renewable energy analysis that will (Settlement Agreement 15.2.5.1; CCDP 15.2(a)):

1. Assess the feasibility and cost-effectiveness of programs and options to reduce demand on the electric grid from all lands under District's jurisdiction; and, (Settlement Agreement 15.2.5.1(1); CCDP 15.2(a)(i))
2. Include, but not be limited to, an assessment of the potential for reduction in energy use on all land under District's jurisdiction through increases in energy efficiency, demand response, clean renewable and distributed energy generation and other methods and technologies. (Settlement Agreement 15.2.5.1(2); CCDP 15.2(a)(ii))

B. Upon the completion of each analysis, the District will consider good faith implementation of cost-effective programs and options as part of its commitment to GHG reductions and global climate change prevention activities consistent with Assembly Bill 32. (Settlement Agreement 15.2.5.2; CCDP 15.2(b))

C. The results of each analysis will be published on the District's website and received by the District's Board of Port Commissioners in a public forum (Settlement Agreement 15.2.5.3; CCDP 15.2(c)).

The Port will prepare a Sustainable Leasing Policy to be considered for adoption by the Board of Port Commissioners.

Objective 5.2-4

Transportation. The design and management of the CVBMP footprint promotes alternative modes of transportation that contribute to reducing congestion and GHG emissions, provide easy access to the CVBMP footprint, and enhance the user's experience in both the built and natural environments.

I. Design and encourage the use of alternate transportation by including the H Street transit center close to the rail line, bike and pedestrian pathways, water taxis, and a private employee parking shuttle (CCDP 24.1).

Prior to Project Approval, the Port/City will review the site-specific development proposals for consistency with the transit policy described in paragraph I above.

A. Allow for spaces for car-share program vehicles within or adjacent to the CVBMP footprint for resident, visitor and worker use to encourage reduction in the number of vehicles used in the area.

II. Include connections to the planned Bayshore Bikeway and provide an additional local bikeway loop that will be safer and more scenic as it is located closer to the water (CCDP 24.2).

Prior to Project Approval, the Port/City will review the site-specific development proposals for consistency with paragraph II above.

A. Plan and implement a bike-share or bike rental program within the CVBMP footprint.

III. The District and City shall explore the operating and funding potential for a shuttle service that would link various destinations within the western portions of Chula Vista, including the CVBMP area. Implementation of the Chula Vista Bayfront Shuttle is anticipated to include participation by commercial development within the CVBMP area (CCDP 24.3).

The CVBMP project's transportation system was developed to focus vehicular activity on the eastern edges of the property, near I-5 and its interchanges, by placing a majority of the common parking areas on the eastern properties, while designing for pedestrian connections and transit service. This will result in narrower, more pedestrian-friendly streets along the waterfront. In order to reduce traffic-related impacts within the CVBMP area, the following transit policies shall be considered in the development of the CVBMP (CCDP 24).

IV. The Chula Vista Bayfront shuttle will service the CVBMP area with a key focus on connecting general users to and from: downtown areas east of Interstate 5, the resort conference center, the residential project, park areas, and existing trolley stops. The shuttle system shall be designed with the following design considerations: (CCDP 24.4).

A. Ensure that it has fewer stops than a conventional bus and is located as close as possible to the major traffic generators (CCDP 24.4(a)).

B. Plan the general route of the transit shuttle to travel along Third Avenue between F Street and H Street, along F Street between Woodlawn Avenue and Third Avenue, along Woodlawn Avenue between E Street and F Street, along E Street, Marina Parkway, Street C, and Street A within the Bayfront development area, and along H Street between the Bayfront and Third Avenue (CCDP 24.4(b)).

C. Plan the route to operate as a two-way loop with stops in both directions (CCDP 24.4(c)).

D. Plan for shuttles to initially run every 15 minutes (CCDP 24.4(d)).

E. Consider a private shuttle system to transport employees between the H-18 parking structure and the H-3 parcel in the Harbor District (CCDP 24.4(e)).

F. Evaluate the use of an electric or reduced-emissions shuttle.

V. Shuttle service shall be phased concurrent with development. At a minimum, service shall be provided upon the issuance of Certificate of Occupancy for either the H-3 resort conference center hotel or the 500th residential unit. Additional stops shall be provided at the Signature Park, the Recreational Vehicle Park, the H-18 parking structure, and the Park in Otay District, as these uses are developed (CCDP 24.5).

VI. In the Harbor District, typical parking requirement standards for high intensity uses may be reduced if it can be demonstrated that the use will be adequately served by alternative transit (CCDP 24.6).

Prior to Project Approval, the Port/City will review the site-specific development proposals for consistency with the above.

VII. In order to reduce transportation-related air quality impacts, the following items should be encouraged at the project-level planning phase (CCDP 24.7; MMRP 4.6-6, 6.8-3):

A. Limit idling time for commercial, non-refrigerated vehicles, including delivery and construction vehicles. Refrigerated delivery trucks may remain idling while at loading docks (CCDP 24.7(a); MMRP 4.6-6, 6.8-3).

B. Use low or zero-emission vehicles, including construction vehicles (CCDP 24.7(b); MMRP 4.6-6, 6.8-3).

C. Promote ride sharing programs; e.g., by designating a certain percentage of parking spaces for ride sharing vehicles, designating adequate passenger loading and unloading and waiting areas for ride sharing vehicles, and providing a web site or message board for coordinating rides (CCDP 24.7(c); MMRP 4.6-6, 6.8-3).

D. Provide the necessary facilities and infrastructure to encourage the use of low or zero-emission vehicles (e.g., electric vehicle charging facilities and conveniently located alternative fueling stations) (CCDP 24.7(d); MMRP 4.6-6, 6.8-3).

E. Provide public transit incentives, such as free or low-cost monthly transit passes (CCDP 24.7(e); MMRP 4.6-6, 6.8-3).

F. For commercial projects, provide adequate bicycle parking near building entrances to promote cyclist safety, security, and convenience. For large employers, provide facilities that encourage bicycle commuting, including, e.g., locked bicycle storage or covered or indoor bicycle parking (CCDP 24.7(f); MMRP 4.6-6, 6.8-3).

G. Institute a telecommuter work program. Provide information, training, and incentives to encourage participation. Provide incentives for equipment purchases to allow high quality teleconferences (CCDP 24.7(g); MMRP 4.6-6, 6.8-3).

H. Provide information on all options for individuals and businesses to reduce transportation-related emissions. Provide education and information about public transportation (CCDP 24.7(h); MMRP 4.6-6, 6.8-3).

The requirements as noted in paragraphs VII (A-H) above shall be implemented in compliance with the MMRP.

5.3 Open Space

Goal

Compatible Open Space Fosters Positive Experiences. *Open space in the built environment and the designated park areas of the CVBMP footprint provides for a positive human experience of nature and is compatible with its surrounding natural communities.*

Objective 5.3-1

Engaging Visitors in Open Space. Open spaces and other public areas are pedestrian-oriented and provide an engaging interface with natural areas of the CVBMP footprint designed for public use, such as parks.

I. Open spaces integrated into hotels must include activating uses such as restaurants, outdoor sitting and dining areas and retail shops, which would be open to the public as well as hotel patrons (CCDP 20.5).

II. Public access and other path-finding signage should be placed at strategic locations throughout the hotel complexes and to guide guests and visitors to and from public use areas, shops and restaurants, restrooms and other facilities (CCDP 20.6).

III. To help integrate all publicly accessible areas and provide convenience and low cost services for the general public, the ground floor of the hotel developments and associated outdoor areas should contain a variety of pedestrian-oriented amenities, which may include reasonably priced restaurants, newspaper stands, outdoor cafes with sit down and walk up service, informational kiosks, ATM's, public art, or gift shops easily accessible to the public (CCDP 20.7).

IV. The design of the Resort Conference Center development must provide a strong public interface with the adjacent Signature Park by including publicly accessible areas with convenience and low cost services for the general public. Other public amenities that may be provided at various locations around the hotel site include public wireless connectivity, drinking fountains, bike racks, horticultural interpretive labels on landscape elements, educational and historic plaques/displays, and dog drinking fountains. These elements represent public recreational opportunities and will encourage access to and around the site (CCDP 20.8).

Prior to Project Approval, the Port/City will review the site-specific development proposals for consistency with the above.

Objective 5.3-2 *Pedestrian and Bicycle Pathways.* Pathways for pedestrians and bicycle users are designed and designated to provide safe circulation and enjoyment of the CVBMP built and natural environments, while minimizing disturbances to sensitive WHAs and other users (Map 5-1).

I. Provide a continuous open space system, fully accessible to the public, which would seamlessly connect the Sweetwater, Harbor, and Otay Districts through components such as a continuous shoreline promenade and a continuous bicycle path linking the parks and ultimately creating greenbelt linkages (CCDP 20.2).

II. Shoreline promenades shall be a minimum of 25 feet in width [in the Harbor District] allowing both pedestrians and bicyclists and shall be constructed directly along the water front where feasible and maintained free of private encroachment around the Bayfront. Pathways and walking trails not proposed along the shoreline shall be a minimum width of 12 feet (CCDP 20.1).

Prior to Project Approval, the Port/City will review the site-specific development proposals for consistency with paragraphs I and II above.

A. Design of pedestrian paths in the Sweetwater and Otay Districts, including the shoreline promenade, will be sensitive to the paths' adjacency to sensitive resources at the F&G Street Marsh, the Sweetwater Marsh NWR, and the J Street Marsh. The pedestrian trail serving as the promenade along the western side of the Sweetwater District and Otay District will be approximately 12-feet wide (CVBMP Public Access Program Section 3 (p. 5), San Diego Unified Port District and City of Chula Vista, 2012). Continue cooperative evaluation of narrower paths for meandering trails and spur paths.

B. Collaborative efforts will be made to work with the Coastal Commission and the Port/City to evaluate reducing minimum path widths.

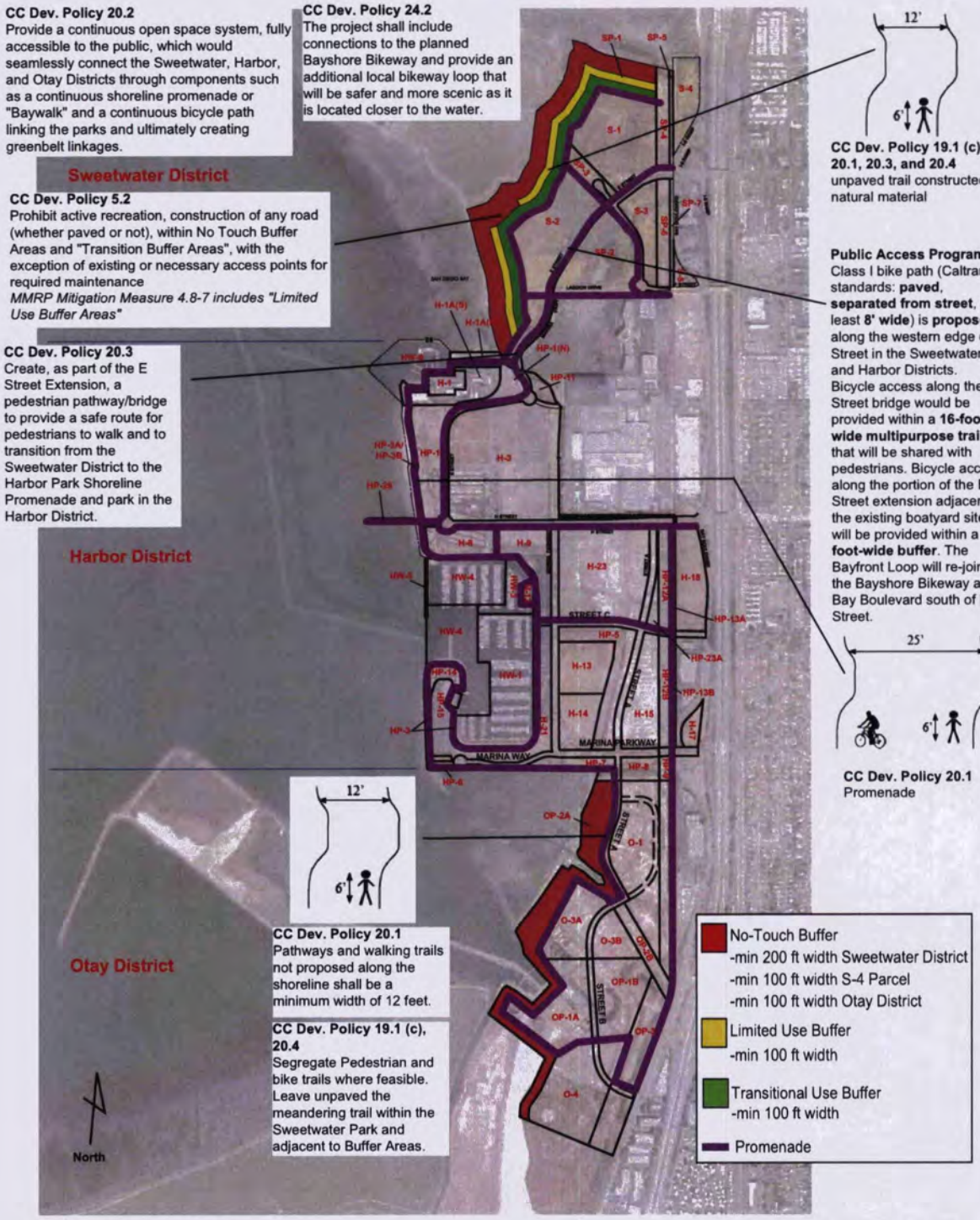


Exhibit 2 – Buffer Areas

(Defined by § 4.1.3 and 4.1.4 of the Chula Vista Bayfront Master Plan Settlement Agreement; the agreement prevails over any conflict with this exhibit)

Map 5-1. MMRP Exhibit 2 illustrating CVBMP Buffer Areas and Promenade. Overlay of Chula Vista Bayfront Development Policies (CCDP) identify guidelines for creation and use of Buffer Areas, and for construction of various pedestrian and bicycle pathways within the CVBMP.

III. Create a meandering pedestrian trail constructed of natural material that is easily maintained and interwoven throughout the Signature Park. Create, as part of the E Street Extension, a pedestrian pathway/bridge to provide a safe route for pedestrians to walk and to transition from the Sweetwater District to the Harbor Park Shoreline Promenade and park in the Harbor District (CCDP 20.3). A meandering public trail will be provided along the entire length of the Bayfront. The meandering trail within the Sweetwater Park and adjacent to Buffer Areas will not be paved (Settlement Agreement 6.3; CCDP 19.1(c), 20.4). Minimize the impacts of trails in the buffers consistent with quality of human experience and habitat protection.

IV. Pedestrian and bike trails will be segregated where feasible (Settlement Agreement 6.3; CCDP 19.1(c), 20.4).

Prior to Project Approval, the Port/City will review the site-specific development proposals for consistency with paragraphs III and IV above.

A. Locate bike trails outside of the Sweetwater and Otay District Buffer Areas. A separate bikeway for commuting or fast cyclists is recommended to avoid use conflicts or dangerous situations with lower intensity and lower speed users, such as families with strollers, etc.

V. Walkways, paths and overlooks near the WHAs outside of the No-Touch Buffer Areas will be designed in accordance with the Settlement Agreement 4.2, CCDP 11.1, and MMRP 4.8-7.

A. Alignment, design, and general construction plans of walkways and overlooks will be developed to minimize potential impacts to WHAs (Settlement Agreement 4.2.1; CCDP 11.1(a)).

B. Path routes will be sited with appropriate setbacks from WHAs (Settlement Agreement 4.2.2; CCDP 11.1(b)).

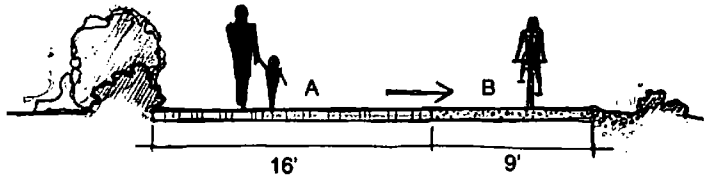
C. Paths running parallel to shore or marsh areas that could cause or contribute to bird flushing will be minimized throughout the CVBMP footprint (Settlement Agreement 4.2.3; CCDP 11.1(c)).

D. Design walkways and overlooks to minimize and eliminate, where possible, perching opportunities for raptors and shelter for skunks, opossums or other predators (see also Section 4.0: A Wildlife Friendly Urban-Wildland Interface) (Settlement Agreement 4.2.4; CCDP 11.1(d)).

E. Walkways and overlooks that approach sensitive areas will be blinded, raised, or otherwise screened so that birds are not flushed or frightened. In general, walkway and overlook designs will minimize visual impacts on the WHAs of people on the walkways (Settlement Agreement 4.2.5; CCDP 11.1(e)).

The requirements as noted in paragraphs V (A-E) above shall be implemented in compliance with the CCDP.

Figure 5-1 through Figure 5-6 provide conceptual design options for pedestrian and bike paths, and maintenance crossings.



Promenade Trail Type I: Multi-use pedestrian and bike path
Location: Harbor District
Pedestrian Criteria (A): Permanent, accessible, env. friendly, and slightly discouraging to bicyclists
Bicycle Criteria (B): Class I - permanent, environmentally friendly, and smooth
Drainage System: Sub-surface and sloped to adjacent bioswale
Appropriate Material: A- Permeable paver system B- Stabilized crushed aggregate such as Natural Pave.

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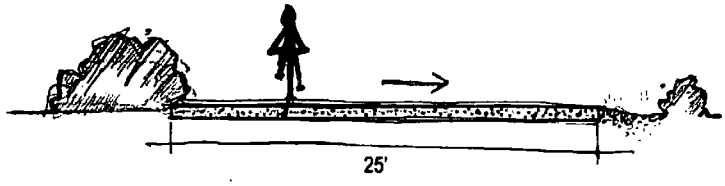
Figure 5-1. The 25-foot wide Promenade in the Harbor District Type 1 with segregated but undivided pedestrian-bicyclist use.



Promenade Trail Type II: Multi-use pedestrian and bike path
Location: Harbor District
Criteria: Non segregated, pedestrian appropriate paving. Permanent, accessible, & environmentally friendly
Drainage System: Sloped to adjacent bioswale
Appropriate Materials: Stabilized crushed aggregate such as Natural Pave

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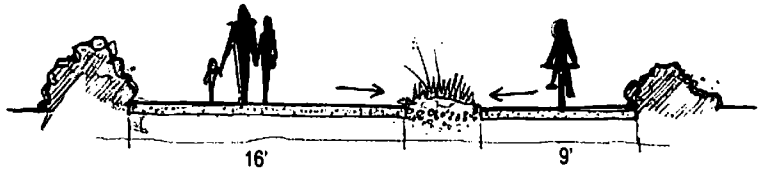
Figure 5-2. The 25-foot wide Promenade in the Harbor District Type 2 with no segregation between bicyclists and pedestrians.



Promenade Trail Type III: Multi-use pedestrian and bike path segregated where feasible by vegetated swale
Location: Harbor District
Pedestrian Criteria (A): Permanent, accessible, env. friendly, and slightly discouraging to bicyclists
Bicycle Criteria (B): Class I - permanent, environmentally friendly, and smooth
Drainage System: Sub-surface and/or sloped to central bioswale where feasible
Appropriate Material: Permeable paver system and/or Stabilized crushed aggregate such as Natural Pave.

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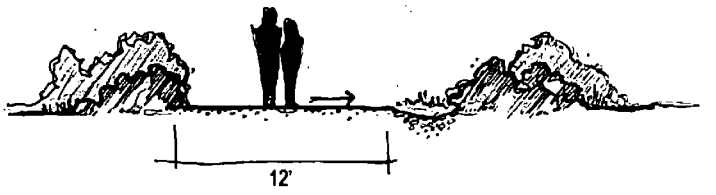
Figure 5-3. The 25-foot wide Promenade in the Harbor District Type 3 with pedestrians and bicyclists segregated by a vegetated swale.



Meandering Pedestrian Path: Pedestrian only
Location: Sweetwater & Otay Buffer and Promenade
Criteria: Unpaved
Drainage System: Sloped to bioswale Alt: None
Appropriate Material: Compacted site soil (unpaved) Alt: Stabilized crushed stone (D.G.) or Amended site soil with crushed stone additive

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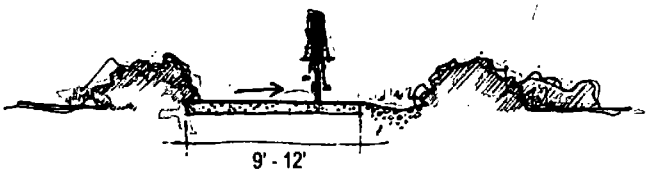
Figure 5-4. Pedestrian path conforming to CCDP 20.1 guidelines for pedestrian pathways not proposed along the shoreline, such as in Transitional Use or Limited Use Buffer Areas in the Sweetwater and Otay Districts, park areas and open space.



Meandering Bike Path: Bicyclists only
Location: Sweetwater, Harbor, & Otay Districts
Criteria: Class I Bikeway - permanent, env. friendly, smoothly paved
Drainage System: Sloped to bioswale Alt: None
Appropriate Material: Stabilized crushed aggregate paving system such as Natural Pave

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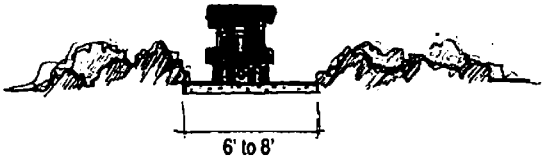
Figure 5-5. Class I bicycle path conforming to CVBMP Public Access Program (Section 4) guidelines.



Secondary Access Paths: Pedestrian and vehicular maintenance access
Location: Sweetwater & Otay District 200' No Touch Zones
Material Comments: Compacted site soil, Alt: stabilized crushed stone

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Figure 5-6. Rendering of maintenance crossing design concept conforming to Chula Vista Bayfront Master Plan guidelines.

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Objective 5.3-3 *Viewpoints and view-sheds.* Public views of the beach, lagoons, and along the shoreline as well as to other scenic resources from major public viewpoints are protected (CCDP 23.1).

I. Development that may affect an existing or potential public view shall be designed and sited in a manner so as to preserve or enhance designated view opportunities. Street trees and vegetation shall be chosen and sited so as not to block views upon maturity (CCDP 23.1).

   A. Buildings and structures shall be sited to provide unobstructed view corridors from the nearest view corridor road. These criteria may be modified when necessary to mitigate other overriding environmental considerations such as protection of habitat or wildlife corridors (CCDP 23.3).

   B. The impacts of proposed development on existing public views of scenic resources shall be assessed by the District or City prior to approval of proposed development or redevelopment (CCDP 23.2).

II. Existing views to the water from the following view corridor roads shall be protected and enhanced: E Street, F Street, Bay Boulevard between E and F Streets, Marina Parkway, and G and L Streets (in the City of Chula Vista); as shall the new views of the Bay created from the H Street corridor. These protected views shall be denoted by the "vista" icons on the Precise Plan for Planning District 7 (CCDP 23.5).

   A. Building setbacks and coordinated signage shall be provided along Marina Parkway (CCDP 23.6).

   B. View corridors to the Bay shall be established on Marina Parkway between H and J Streets approximately every 500 feet as denoted by the "vista" icon on the Precise Plan for Planning District 7 (CCDP 23.8).

   C. Landscape design and installation along Marina Parkway shall frame and enhance this scenic corridor, as well as on E Street and Bay Boulevard, adjacent to the project site (CCDP 23.9).

   D. In order to protect views and as a condition for issuance of the CCDP, buildings fronting on H Street shall be designed to step away from the street. Building design plans shall protect open views down the H Street Corridor by ensuring that an approximate 100-foot right-of-way width (curb-curb, building setbacks, and pedestrian plaza/walkway zone) remains clear of buildings, structures, or major landscape features. Visual elements above 6 feet in height shall be prohibited in this zone if features would reduce visibility by more than ten percent. In order to reduce the potential for buildings to encroach upon view corridors, and to address the scale and massing impact, buildings shall step back at appropriate intervals or be angled to open a broader view corridor at the ground plane to the extent feasible. All plans shall be subject to review and approval by the District. All development proposals shall conform to Port design guidelines and standards to the satisfaction of the District (CCDP 23.12; MMRP 4.4-1).

E. Bayfront Gateway Objective/Policies: Certain points of access to the Bayfront will, by use, become major entrances to the different parts of the CVBMP footprint. A significant portion of the visitors' and users' visual impressions are influenced by conditions at these locations. Hence, special consideration should be given to roadway design, including signage and lighting, landscaping, the protection of public views towards the Bay, and the siting and design of adjoining structures. Concurrent with the preparation of Phase I infrastructure design plans for E and H Streets, a Gateway plan shall be prepared for E and H Streets. Prior to issuance of certificates of occupancy for any projects within the District's jurisdiction in Phase I, the E and H Street Gateway plan shall be approved by the District and City's Directors of Planning and Building. The E and H Street Gateway plan shall be coordinated with the Gateway plan for J Street. All Gateway plans must conform with the setback policies and height limits in the PMP (CCDP 23.10).

III. Prior to approval of development in the Otay District, views of the Bayfront from Bay Boulevard shall be identified and preserved (CCDP 23.7).

IV. Signs shall be designed and located to minimize impacts to visual resources. Signs approved as part of commercial development shall be incorporated into the design of the project and shall be subject to height and width limitations that ensure that signs are visually compatible with surrounding areas and protect scenic views. Permitted monument signs shall not exceed eight feet in height. Freestanding pole or roof signs are prohibited. Permanent advertising signs and banners shall be prohibited in public beaches and beach parks (CCDP 26.1).

V. Prior to issuance of coastal development permits (CDPs) for projects within the District's jurisdiction, the project developer shall ensure that design plans for any large scale projects (greater than two stories in height) shall incorporate standard design techniques such as articulated facades, distributed building massing, horizontal banding, stepping back of buildings, and varied color schemes to separate the building base from its upper elevation and color changes such that vertical elements are interrupted and smaller scale massing implemented. These plans shall be implemented for large project components to diminish imposing building edges, monotonous facades and straight-edge building rooflines and profiles, and to avoid the appearance or effect of "walling off" the Bayfront (CCDP 23.13; MMRP 4.4-1).

VI. Public views of the Bay and access along the waterfront shall be provided via a proposed Promenade. The pedestrian path will also connect to the Signature Park and the pathway system within the Sweetwater District, ultimately linking the two districts and "enabling viewers to experience visual contact at close range with the Bay and marshlands" (CCDP 23.4).

Prior to Project Approval, the Port/City shall review the site-specific development proposals for consistency with paragraphs I-VI above.

5.4 Landscape Design

Goal

Landscape Design Facilitates Ecosystem Services and Enjoyment. *The landscapes of the built environment and open spaces are planned so as to maximize the protection of natural resources, capture a sense of place, and provide for touchable habitat and connection with nature.*

Objective 5.4-1

Compliance. Landscape design complies with all CCDP and MMRP requirements.

I. Prior to final approval of Phase 1 infrastructure design plans, the Port and City shall collectively develop a master landscape plan for the project's public components and improvements. The plan shall provide sufficient detail to ensure conformance to streetscape design guidelines and that future developers/tenants, as applicable, provide screening of parking areas. The streetscape landscape shall be designed to enhance the visitor experience for both pedestrians and those in vehicles. Specifically, detailed landscape plans shall be developed to enhance marina Parkway, a designated scenic roadway and shall provide, where appropriate, screening of existing industrial uses and parking areas until such time as these facilities are redeveloped. Street landscape design shall be coordinated with a qualified biologist or landscape architect to ensure that proposed trees and other landscape elements are appropriate for the given location. For instance, vegetation planted adjacent to open water/shoreline areas must not provide raptor perches. Landscape plantings shall be drought tolerant or low-water use, and invasive plant species shall be prohibited (MMRP 4.4-1).

II. Prior to approval of a tentative map or site development plan for future residential development, the project developer shall submit a landscape design plan for on-site landscape improvements that is in conformance to design guidelines and standards established by the City of Chula Vista. The plan shall be implemented as a condition of project approval (MMRP 4.4-1).

III. The concept approval for the Signature Park will include a refined plan to address the linkage between the parks over the F&G Street channel. The design will ensure that the linkage between the two parks is easily accessed, obvious, and allows visitors to flow naturally and safely between the two parts of the park. A separate pedestrian bridge will be evaluated and, if necessary, a supplemental environmental review will be performed to address any necessary issues prior to the concept approval being forwarded to the Board of Port Commissioners (Settlement Agreement 7; CCDP 18.1).

IV. Invasive plant species (as listed in the Cal-IPC Inventory list or Cal-IPC Inventory database or updates) will not be used within the CVBMP footprint. Any such invasive plant species that establishes itself within the CVBMP footprint will be immediately removed to the maximum extent feasible and in a manner adequate to prevent further distribution into WHAs. A condition of approval for CDPs will require applicants to remove any such invasive plant species that become established within the CVBMP footprint (Settlement Agreement 4.7.1; CCDP 6.1(a)).

V. Note that much of the land designated for Buffer Areas or parks, especially in the Otay District, are highly invaded with noxious, non-native plant species, and may require a multi-year program of eradication prior to restoration or improvement.

VI. Restoration and planting of the Buffer Areas will be accomplished as part of the site preparation of each District.[1]

VII. Coordinate invasives removal and planting events to assist in restoration.

VIII. Only designated native plants will be used in the No-Touch Buffer Areas, habitat restoration areas, or in the Limited and Transitional zones of parcel SP-1 adjacent to the WHAs (Settlement Agreement 4.7.2; CCDP 6.1(b)). Refer to Section F.9: Trees.

IX. Non-native plants will be prohibited adjacent to WHAs and will be strongly discouraged and minimized elsewhere where they may provide breeding for undesired scavengers (Settlement Agreement 4.7.3; CCDP 6.1(c)).

X. No trees will be planted in the No-Touch Buffer Areas or directly adjacent to a NWR, J Street Marsh, or SP-2 areas where there is no buffer (Settlement Agreement 4.7.4; CCDP 6.1(d)). See also Section 4.0: A Wildlife Friendly Urban-Wildland Interface.

XI. The landscape designs and standards shall include a coordinated street furniture palette include waste containers and benches, to be implemented throughout the CVBMP footprint at appropriate locations (CCDP 23.11).

Prior to Project Approval, the Port/City will review the site-specific development proposals for consistency with paragraphs VII-XI above.

Objective 5.4-2 *Wetland Creation.* Created wetlands for stormwater catchment are incorporated into the landscape design of open space that exclusively calls for native plant species that provide habitat value to wildlife.

I. Incorporate seasonal wetlands into the master landscape plan for functional retention of stormwater and as an attractive landscape feature.

II. Where seasonal wetlands are implemented, develop a management plan that seeks to maintain a healthy aquatic environment, a diversity of native plant species, and does no harm to fauna.

III. Include features that will allow removal of sediments and litter to improve water quality or support native wildlife.

See also Section 3.0: Minimizing Harm to Neighboring Wetlands and Marine Waters.

Objective 5.4-3 *Visual Appeal.* Landscape design plans emphasize beauty and year-round interest.

I. Consider plantings that bloom for the majority of the year in prime locations (for example, high traffic areas).

II. Other locations may include important native plants of concern (e.g., those with a CNPS Rare Plant Rank of 1B[2]), even if they are not beautiful year round.

1. The management actions under Objective 5.4.1 are priority actions that will be a focus for early grant requests. The Port/City shall revegetate all areas of the SP-1 Buffer, except areas with existing sensitive habitat, surrounding Parcel S-1 as habitat mitigation related to that project. In the event that grant funding commitments are not secured prior to the issuance of a building permit in either the Sweetwater District (including Signature Park) or the Otay District, O&M, Port Environmental funds, or other funding will be used to ensure completion of these actions in the adjacent buffer area prior to issuance of the Certificate of Occupancy.
2. California Rare Plant Rank 1B: Plants rare, threatened, or endangered in California and Elsewhere.

Objective 5.4-4 *Native and Local Plants.* Plant palettes emphasize natives of coastal southwestern San Diego County and native plant diversity with an emphasis on plants that would have naturally occurred in the project area.

I. Where possible, drought-tolerant landscaped areas will emulate the habitat structure and specific components of coastal sage scrub, coastal strand, maritime chaparral, and maritime succulent scrub.

II. Develop plant palettes for specific areas within the CVBMP footprint that can meet the visual, interactive or wildlife needs, using local natives. Appendix F: Comprehensive Plant List, provides an extensive list of suitable plant species.

III. Turf Grass Use. Grass selection will be based on proposed uses and functions of the grass. Mowed turf grass is native or other drought tolerant type, and provides functional gathering spaces. Meadow turf (mow-free) composed of native species may also be used, where appropriate.

   A. Native species that withstand mowing are cool season grasses. Native bent grass (*Agrostis pallens*) is the first choice for California native lawn areas in low-impact areas. It is extremely drought tolerant, withstands low mowing, and provides and effective weed barrier. With occasional summer irrigation, it maintains a deep green color.

   B. The high-traffic areas may use dwarf bermudagrass, such as Tifway.

   C. Bioswales may include San Diego salt grass, seashore paspalum (non-native, non-invasive), and other native grasses.

IV. Incorporate meadow grasses, grass-like plants and wildflowers, where appropriate and feasible. Appendix F: Comprehensive Plant List provides suggestions

Objective 5.4-5 *Promoting Pollinators.* Native pollinator-plant species are included in transition areas between the built environment and parks that may support abundant and diverse native pollinators.

I. Use pollinator plants in areas where the public can safely observe pollinator activity. Most native pollinators are harmless to people. Many of the plants in Appendix F: Comprehensive Plant List are suitable. All of the annual and perennial species (Section F.1: Annuals and Section F.2: Perennials) are suitable. Notable among the shrubs (Section F.7: Shrubs) are the genera *Arctostraphylos* (manzanita), *Bahiopsis* (San Diego sunflower), *Berberis* (barberry), *Ceanothus* (California lilac), *Eriogonum* (buckwheat), *Fremontodendron* (flannel bush), *Lupinus* (lupine), *Malacothmnus* (chaparral mallow), *Prosopis* (mesquite), *Prunus* (evergreen cherry), *Salvia* (sage, highly recommended), and *Trichostema* (wooley blue-curls).

Objective 5.4-6 *Special Interest Gardens.* Special interest gardens within the built environment are planned, where feasible, and managed to emphasize public education about the local flora, fauna, and ethnobotany. Special interest gardens may focus on the interaction of flora and fauna.

I. Special interest gardens within the landscape master plan emphasize discovery, observation, and interpretation. A garden room concept (gardens that are semi-enclosed with vegetation or low profile structures) may be appropriate to create a quiet environment for contemplation. Interpreted interactions between fauna and flora in mini-gardens or garden rooms should be encouraged.

II. Edible gardens within the residential area are encouraged for individual and community use.

III. Encourage residents interested in growing their own food to utilize programs such as San Diego's Master Gardeners.

IV. Interpret edible gardens as a sustainable alternative to food transported long distances.

V. Explore the feasibility of establishing a farmer's market to bring locally produced food to the bayfront.

VI. Incorporate bird-nesting boxes, where feasible, to encourage native insect-eating species in the edible gardens (and throughout the CVBMP footprint).

5.5 Park Design and Management

Goal

Promoting Wildlife. *Maximize wildlife-related ecological functions provided by the parks through design and educational opportunities.*

Objective 5.5-1

Sea Level Rise and Climate Change Planning. Park planning and adaptive management should be consistent with up-to-date best knowledge of sea level rise and climate change.

I. Use current sea level rise maps to determine areas of possible habitat migration to guide park design. Adaptive management of sea level rise may require periodic adjustments of habitat migration projections.

II. Within areas affected by sea level rise, plan to maintain a buffer vegetation plant palette that includes a suite of species from salt marsh to upland transition (see Section F.9: Trees). Keep in mind the minimum requirement of a 100-foot buffer from salt marsh habitat (refer to Section 2.2: Mitigation Compliance and Improving Habitat Quality in the CVBMP Footprint and WHAs, and to CCDP 2.6 and 3.1).

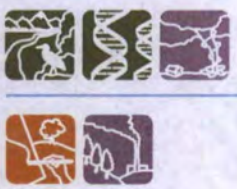
III. Locate permanent paved pathways and promenades outside of zones impacted by sea level rise (50-year projections)

IV. Consider shade structures and vegetation to accommodate people during intensifying heat waves (that are designed to discourage predator perching).

V. Consider the placement of structures such as a *cooling center* building within the CVBMP footprint to be constructed as prolonged extreme hot weather events become more common (current projections indicate that *cooling centers* may be warranted within the next 40 years).

Objective 5.5-2

Park Plant Palettes. To the greatest degree possible, plant species used in park design are native species within southwestern coastal San Diego County and are propagated from within the local gene pool.



I. Use contract-grown nursery plants from a reliable nursery experienced with the propagation and production of local California native plants.

II. Design park perimeters as transition zones into habitat, while allowing for habitat migration due to sea level rise.

III. Consider a small botanical display garden of plant species of special interest and/or status.

IV. Use plant palettes in Appendix F: Comprehensive Plant List, which are consistent with directives to use native plants.

V. Emphasize plants that provide support value for a variety of wildlife species, especially those that will be interesting and educational to park visitors.

Figure 5-7. Rendering of a design concept for passive-use parks.

Goal

Park Recreation. *Parks are planned and managed to provide for passive recreation, human connections with nature, education and a sense of place.*

Objective 5.5-3

Positive Interaction with Nature and Minimizing Impacts. Sweetwater and Otay District Parks are designed and managed to promote positive experiences in nature, including opportunities for passive recreation for a variety of visitors, while minimizing access and disturbances to native wildlife and WHAs.

I. The parks contain minimal permanent structures to facilitate such interaction; they will be limited to single-story heights and primarily function to provide restrooms, picnic tables, shade structures and overlooks (Settlement Agreement 6.1; CCDP 19.1(a)).

II. The parks do not include athletic field amenities (Settlement Agreement 6.4; CCDP 19.1(d)).

III. No unattended food vending is allowed (Settlement Agreement 6.5; CCDP 19.1(e)).

IV. The use of amplified sound equipment is prohibited (Settlement Agreement 6.7.1; CCDP 19.1(g)(i)). Refer also to Section 4.0: A Wildlife Friendly Urban-Wildland Interface.

V. Reservations for group events and activities are prohibited (Settlement Agreement 6.7.2; CCDP 19.1(g)(ii)).

VI. The parks are constructed using low water-use ground cover alternatives where possible (Settlement Agreement 6.2; CCDP 19.1(b)).

VII. The parks provide passive interaction, including passive recreation, with nature that emphasizes the open space aspect of the parks and which involves a low level of development, including picnic areas and trails (Settlement Agreement 6.1; CCDP 19.1(a)).

Prior to Project Approval, the Port/City will review the site-specific development proposals for consistency with paragraphs I-VII above.

VIII. Consider planning and managing parks for human appeal that provide places where children can play and adults can exercise and relax.

A. Where feasible, design specific areas for more intensive use. Provide for more intensive management of these areas.

B. Seek approval of natural resource agencies to allow a new category of "educational and interactive habitats" to be able to be created and maintained within Signature Park to encourage direct experience and interaction with habitats and wildlife without impacting existing sensitive habitats.

C. Specifically design areas for children to play in a natural setting (see Figure 5-8).

IX. Maximize the visitor-nature experience whenever possible.

A. Where feasible, design to bring wetlands and upland transition habitat into Signature Park to increase their interface with the public.This strategy would also support goals for adaptive management and creation of transitional habitat per Settlement Agreement 3.2.1.3 and CCDP 1.3(a), 1.3(b), 3.3.

B. Consider providing for themed plant rooms within the perimeter of parks that offer visitors a close-up and touchable connection with native plants and views of wildlife.

C. Provide well-trained docents to interact with visitors. See also Section 6.0: Education to Inspire and Promote the Human Experience of Nature.

Figure 5-8. Rendering of a design concept for a children's play area.

5.6 Landscape Maintenance

Goal

Efficient and Effective Landscape Management. *Maintenance of built environment and open space landscapes uses resources efficiently, minimizing impacts, and adaptively employs BMPs.*

Objective 5.6-1

Performance Standards and Integrated Pest Management. Landscape maintenance adheres to the highest level of performance (e.g., evaluation standards, skill requirements of landscape contractors, etc.) and includes an IPM program and an accountable, best practices evaluation procedure.

I. IPM must be used in all outdoor, public, buffer, habitat, and park areas (Settlement Agreement 4.6.3; CCDP 13.6).

A. Use the Port and City IPM policy that is easily understood and implemented by all practitioners of landscape care and maintenance. Offer gardeners training in IPM principles and practices. See also Section 3.2: Watershed Approach.

B. Design a best practices guide for a variety of landscape maintenance requirements. For City of Chula Vista property, the requirements should be in accordance with the City of Chula Vista standards for landscape maintenance for public spaces.

C. In the garden areas, include information and displays demonstrating the environmental and health benefits of benign pest control measures such as IPM.

II. The Port/City will develop maintenance guidelines for incorporation into landscape maintenance contracts.

Objective 5.6-2 *Irrigation.* State-of-the-art irrigation equipment and practices are implemented throughout the CVBMP footprint.

I. Consider using subterranean irrigation for turf and meadow plantings.

II. For shrub plantings, consider the use of efficient area delivery systems (e.g., MP Rotator Shrub Heads). Avoid drip irrigation on drought tolerant plants because such technology hydrates concentrated areas leaving the interspaces completely dry.

III. Regularly maintain all irrigation systems, avoiding runoff, wetting of unvegetated areas, and making delivery adjustments according to season.

See also Section 5.2: The Built Environment.

Objective 5.6-3 *Invasive Species Management.* An invasive plant management plan is in place that reinforces strict adherence to pesticide label instructions and restrictions for chemicals carrying a caution warning label.

I. Pesticides are applied by licensed individuals and firms.

II. Pesticide use is reported as required by law. Copies of pesticide use reports are maintained by the appropriate land managers.

III. Use best practices for prevention and control of weeds that include mulching with local organic materials, such as wood chips. For the most drought tolerant plants, such as native succulents, mulch with mineral material such as clean pea gravel or ¼-inch rock.

Objective 5.6-4 *Fertilizer Use.* Fertilizer use is regulated to avoid misuse or over-use, which could result in harm to wildlife.

I. Fertilizers are Organic Materials Review Institute (OMRI)-approved. These are organic fertilizers that are naturally slow release, avoiding the nutrient-pulse that often results from soluble chemical fertilizers. Soluble nutrients, especially nitrogen, often dissolve in water and are carried away from plant roots as outflow, becoming a serious form of water pollution.

II. Fertilizer use occurs with proper horticultural evaluation of nutrient need, and is minimized. In practice this means recognizing and feeding plants when they need to be fed, rather than according to a calendar schedule.

III. Composting is recommended on-site to the degree feasible. Addition of composted organic matter into the sandy soils of the CVBMP would improve soil health, promote soil-building, conserve moisture and increase nutrient-holding capacity (see also Section 4.0: A Wildlife Friendly Urban-Wildland Interface).

6.0 Education to Inspire and Promote the Human Experience of Nature

The CVBMP project footprint offers opportunities for human encounters with nature that are engaging, tranquil, support human health and well-being, and are accessible to all. The goals, objectives, and strategies articulated in this plan will transform the way we conserve and restore nature in coastal urban environments with a changing global climate, and will preserve precious natural resources for generations to come. Education is a key element in both appreciating the natural environment and supporting ongoing conservation efforts.

6.1 Key Messages

The educational portion of this plan aims to inspire natural resources stewardship across various groups, create a cultural and ecological sense of place within the CVBMP footprint, and present a model of sustainability and connectivity to the larger social and ecological landscape. This includes:

I. Education and stewardship that will reach diverse audiences and provide a range of experiences designed to inspire a commitment to conservation.
   - A. Attract and engage a range of visitors.
   - B. Instill a reverence for ecological diversity and natural resources of the area, and inspire its stewardship.
   - C. Promote educational programs for employees so they can be ambassadors for the area.
   - D. Encourage park and trail use, while minimizing environmental harm.

II. Education that communicates cultural and ecological sense of place, including cultural, ecological, and conservation history.
   - A. Native tribal use of natural resources.

B. Landscape evolution, pre-settlement to present.

C. How preservation of the area was achieved and what attracts people to the site.

III. Education that exhibits both local and global connections to create a model of sustainable living and ecosystem connectivity.

A. How the Chula Vista bayfront system fits within larger systems.

B. Climate change and sea level rise education.

C. The CVBMP project area as a model for sustainability.

D. Role in animal migration and protection of resources.

E. Presence in the U.S.-Mexico border region.

6.2 Key Audiences

There are opportunities to shape CVBMP promotion and educational strategies to target a wide spectrum of audiences, including:

- Families, seniors, children
- Schools: administrators, teachers, parents, students
- Residents, surrounding and underserved communities
- Tourists, convention center visitors
- Persons under the Americans with Disabilities Act of 1990
- Community and other Non-profit organizations
- Commercial enterprises: hotels, service companies, environmental and sustainability organizations and groups
- Staff: hotel, residence building, office, maintenance employees
- Birders, photographers, fishers, boaters, scientists
- Elected officials, local politicians, government directors and other personnel, and government staff
- Media
- Multi-lingual communities

6.3 Natural Resource Stewardship

Goal

Natural Resource Stewardship. *Residents, visitors, and employees in the CVBMP will experience the outdoors, learn about its ecosystems and habitats, and will be inspired with a deeper understanding, personal stewardship, and respect.*

Objective 6.3-1

Diverse Visitors and Learning Opportunities. Attract and engage the whole spectrum of residents and visitors in outdoor interpretive opportunities and experiential learning through different forms.

Drawing People to the Site

An environmental education program will be developed and implemented and will include the following (Settlement Agreement 4.10, 4.10.1 and 4.10.2; CCDP 9.1):

- The program must continue for the duration of the Chula Vista Bayfront project and must target both residential and commercial uses as well as park visitors.
- The program's primary objective will be to educate Bayfront users, residents, visitors, tenants and employees about the natural condition of the Bay, the ecological importance of the Chula Vista Bayfront area and the public's role in the restoration and protection of wildlife resources of the bay.

Prior to Project Approval of site-specific development proposals, the City will require the residential developer's homeowners association to include in its CC&Rs an educational program in accordance with Objective 6.3-1.

Directly following Project implementation, after the first Certificate of Occupancy, the Port will implement an education program to educate CVBMP users, residents, visitors, tenants, and employess per Objective 6.3-1.

I. Emphasize and encourage sustainable integration with natural resources to attract fishermen, boaters, birders, scientists, and environmental organizations and groups from surrounding areas.

II. Attract tourists by collaborating with tourist organizations and bureaus to provide awareness to this commonly overlooked area of San Diego. Commercial enterprises (e.g., hotels and service companies) and the convention center can provide outreach materials such as videos and brochures.

III. Invite elected officials and government directors from other jurisdictions (e.g., engineering, development, and planning directors) to the area to inspire and support local projects.

IV. Create connections and collaborations both within the community and regionally.

Diverse Learning Strategies

The environmental education program will include educational signage, regular seminars and interpretive walks on the natural history and resources of the area, and regular stewardship events for volunteers (i.e., shoreline and beach cleanups, exotic plant removal, etc.) (Settlement Agreement 4.10.3; CCDP 9.2).

V. Consider diverse learning styles, various levels of interaction, from passive to active. Conduct varied activities to cater to special interests and allow flexibility for short day and multi-day experiences (Knudson et al. 2003). Use signage that is multi-lingual and appeals to all ages.

   A. Areas within the CVBMP footprint shall comply with the Americans with Disabilities Act (1990).

VI. Consider learning strategies that provide for physical, emotional, and intellectual involvement, such as interactive signs and sculptures, community events, and interpretive walks (Regnier et al. 1992).

"One of the goals of education is to raise the level of awareness and consciousness in the visitor and...the larger society... Ecopsychologists have suggested that mindful awareness of our interdependence with nature may not only help us regain our lost, ecologically embedded identity (Roszak 2001) but may also help us behave more sustainably, closing the documented gap between pro-environmental attitudes and behaviors." -Mike McCoy, Southwest Wetlands Interpretive Association

VII. Consider conveying and providing for opportunities to express natural resources values through the best storytelling and art, both at outdoor and indoor venues. Offer arts and creative writing programs as opportunities to interpret and respond to nature.

VIII. Ensure adequate orientation information is provided within the built environment (e.g., hotels and convention center) within the CVBMP site (e.g., maps, pamphlets, signage, Quick Response [QR] codes).

IX. Provide outreach to nearby schools and accommodate field trips and curricular program needs. Have information available for administrators, teachers, students, and parents. Support and complement ongoing programs at the Living Coast Discovery Center, targeting schools.

X. Hold stewardship events and seminars when possible, allowing local groups to share experiences and learn from others. Distribute, create, or provide access to guidebooks with environmental themes such as living sustainably, and how to plant a pollinator garden. Invite volunteers to conduct trash clean-up and hold restoration events.

XI. Collaborate with volunteer programs to provide opportunities for classroom presentations, docent training and scheduling, habitat augmentation, weed removal, sign creation, and wildlife monitoring. Consistent with other efforts towards "citizen science," engage the bayfront community in the active maintenance and preservation of the adjacent natural resources.

"The community will benefit from an increased sense of "ownership" and stewardship if they are actively engaged in helping to maintain and protect the wildlife habitat along the Chula Vista Bayfront." -Sandy Vissman, USFWS

The environmental education program will include adequate annual funding for personnel or contractor/consultant and overhead to ensure implementation of the following functions and activities in collaboration with the Living Coast Discovery Center or USFWS (Settlement Agreement 4.10.4 through 4.10.9; CCDP 9.3; MMRP 4.8-7):

- Coordination of volunteer programs and events;
- Coordination of interpretive and educational programs;
- Coordination of tenant, resident and visitor educational programs;
- Docent education; and
- Enhancements and restoration events.

The requirements as noted above shall be implemented in compliance with the MMRP.

XII. Souvenirs related to location-specific themes of the area could be sold as "memory enhancements" (e.g., identified rocks, seeds, artifact replicas) (Knudson et al 2003).

XIII. Where feasible, measure success of the outreach program through surveys and media (e.g., number of Quick Response [QR] codes on signs and brochures that were accessed).

Technology as a Learning Strategy

Pros and cons of using technology as a learning strategy. Adapted from Beck and Cable (2002).

PROS	CONS
▪ Interactive ▪ Expands options for what can be communicated ▪ Caters to different learning styles ▪ Ability to "individualize" information based on age/interests	▪ Expensive ▪ Impersonal ▪ Complex ▪ Needs to be dependable and require little maintenance

XIV. Consider creating a bilingual computer or phone application for educational quizzes and games. Consider inviting schools to participate in application and game development, such as through a contest.

XV. Consider placement of QR codes on interpretive signs for additional learning, in limited numbers so as not to take away from the nature experience.

XVI. Consider creating an active website, updated with animal sightings, upcoming events, and maps.

Objective 6.3-2 *Employee Education.* CVBMP project employees are ambassadors for the area and its natural resources. They attend regular education programs to learn about the resources and services present, and obtain information on future activities and programs.

I. Consider providing incentives for employees to involve family and friends.

II. Make surveys available after the programs for feedback on how to improve them.

Objective 6.3-3 *Promoting Stewardship.* Resident and visitor programs promote a sense of reverence and stewardship for the diversity of fish and wildlife that live in the area. They encourage residents and visitors to cultivate an appreciation for the global importance of the resources present.

I. By helping residents and visitors to learn, understand, and support what is occurring in their area, educational programs and resources foster a personal connection to create a culture of stewardship.

II. Coordinate with the USFWS to communicate the conservation message of the NWR, adjacent to the CVBMP footprint, by informing visitors of the refuge's public tours and resources.

III. Coordinate activities with hotels and the on-site conference center that includes establishing displays and making materials available (brochures, maps, concierge, etc. and incorporate use of produced Bayfront video) to educate guests about the Chula Vista Bayfront and wildlife areas.

IV. Incorporate learning opportunities within the CVBMP area to help local communities understand and connect to what they have in their own "backyard," such as regional bird and fish migratory pathways, the bay's fish nursery, and other life cycle functions of local habitats.

V. Consider the use of an "Adopt-a-" program (e.g., for the Ridgway's rail, formerly known as the clapper rail) and other opportunities for community support. Consider using volunteers and students to conduct monitoring surveys, restoration, or trash removal.

VI. Communicate to visitors the ecosystem services that are provided by the open space and protected habitat (See also Section 5.0: Maximum Ecosystem Services in the Built Environment and Open Space).

VII. Post a visible community bird, wildlife, and butterfly list to show what has been observed. Have a place where people can post what they have seen lately, such as an interpretive center, on a bulletin board, or online. Highlight existing migration routes and consider creating animal way stations (e.g., for butterflies).

VIII. Post a visible community board for fishermen that includes date, species, length, weight, and location of daily catch and method (bait, lure, fly, etc.). Create an application that allows reporting to the appropriate wildlife agency.

Objective 6.3-4

Low Impact Use through Education and Design. Environmental education programs attract residents, visitors, employees and their families to use open space trails for recreation and education, while fostering low crime rate, low trash and maintenance, and high compliance with rules.

Evaluate the following as part of the implementation of the environmental education program and park design:

I. Consider establishing trail themes (e.g., ethnobotany, ecology, ecosystem services) to encourage use.

II. Ensure the coexistence between nature and the built environment by encouraging a balance between conservation and appropriate development, when necessary. Maintain the tranquility needed for environmental and ecosystem preservation alongside a carefully planned development that considers long-term sustainability of the area.

III. Allow shorefront access for wildlife viewing only when it can be done with minimal impact to the environment.

IV. Visitors should be allowed to get close to nature without impacting it through means such as bird blinds and transition areas. The experience may be supplemented with "touchable habitat" areas, interpretive sculptures, interactive displays, and textured signs that encourage touching and interaction (See also Section 4.0: A Wildlife Friendly Urban-Wildland Interface).

   A. Consider use of eco or cultural murals, such as the Surfing Madonna in Encinitas or the murals created by Wyland.

V. Bring wetlands and upland transition habitat into Signature Park as part of a demonstration or eco-park to increase their interface with the public, if feasible. Maximize the visitor-nature experience, ecological functions/wildlife benefit, and use educational opportunities (See also Section 5.0: Maximum Ecosystem Services in the Built Environment and Open Space).

VI. Use design rather than signage or enforcement personnel to ensure compliance with rules, and promote involvement of young people in stewardship of the area when feasible. Discourage illicit activity through wildlife-friendly lighting and enforcement of closing hours.

VII. Provide outreach to boaters and fishermen to aid in understanding their role in water quality and habitat protection.

6.4 Cultural and Ecological Sense of Place

Goal

Cultural and Ecological Sense of Place. *Residents, visitors and employees learn about the cultural, ecological and conservation history of Chula Vista, so that they gain sense of personal connection to this landscape.*

Objective 6.4-1

Ecological and Cultural Evolution of the Landscape. Inform residents, visitors, and employees of the evolution of the landscapes of Chula Vista. Engage with the community and visitors on the historical and cultural connection of native tribes with the natural resources.

I. Collaborate with the Kumeyaay Nation tribal representatives to provide educational resources, such as cultural demonstrations.

II. Consider re-creating a hands-on interactive setting that would depict the Kumeyaay use of natural resources.

III. Describe what has brought people to the Chula Vista area historically and currently.

IV. Share with residents, visitors, and employees the personal stories and experiences that have inspired the area's hard-fought preservation.

   A. Provide information on the historical transformation of the area, and inspire a sense of pride when communicating the effort that went into the creation and conservation of the area.

V. Provide context to show how the Chula Vista Bayfront system fits within larger systems, including southern California and on an international scale (i.e., Pacific Flyway).

   A. Seek opportunities to integrate programs with other nearby areas, reserve networks and multiple regional programs, and ecotourism.

   B. Foster connections with surrounding visitor's centers and bureaus.

6.5 Local, Regional and Global Connections

Goal

Connections. *Residents, visitors and employees are attracted to and inspired by the CVBMP model of sustainable living, and connection to bay, watershed, region, and global ecosystems.*

I. Educational resources can depict the interconnectedness of the area.

   A. Consider social and economic connections with the U.S.-Mexico border region.

   B. Review ecological connections, such as bird migration pathways and the local network of wetlands.

"We must reincorporate ourselves as a part of ecological systems rather than apart from them. We have an opportunity to present this as a priority through this model project. We don't live unto ourselves as individuals or as a species. We live in an interdependent system with all species. We need to change our life styles and priorities to reincorporate and support ecological integrity." -Mike McCoy, Southwest Wetlands Interpretive Association

II. Educational programs shall promote opportunities to learn about how the CVBMP footprint, adjacent areas and regional habitats will change due to climate change and sea level rise issues.

   A. Highlight transition zones in the CVBMP footprint and adjacent WHAs that are designed to accommodate sea level rise.

   B. Communicate that we are part of an interdependent natural system and that our future and the future of other species depends on our actions.

   C. Provide education on how sustainable practices and lifestyle changes can help reduce our carbon footprint. Examples could include things to do at home, products to buy or avoid, as well as area-specific actions, such as taking the local bus or using the bike paths.

III. Reach out to journalistic media and tourism outlets to share the Chula Vista story, encompassing the collaborative work and model of CVBMP's plan to create long-term, sustainable lifestyles in the area.

   A. Encourage them to highlight information made available by the Port and City public relations teams regarding the natural values and activities at the Bayfront.

IV. Consider creating an interpretive video or story of the CVBMP planning process, including how a collaborative effort brought together diverse interests to plan and develop the Bayfront in a manner where the Harbor, Otay, and Sweetwater Districts coexist for long-term sustainability of local and regional wildlife.

   A. Develop signage that describes the sustainable design of the site.

   B. Wherever possible, encourage action from the local community through public involvement, programs, and activities. Reach stakeholder groups (fishermen, conservation and environmental organizations) and policy makers to expand the concept of transboundary connections.

   C. Emphasize how good planning principles can help achieve multiple perceived competing goals. Provide a model of sustainability, conservation, and development for others to follow.

7.0 Moving Forward: Implementation of the NRMP, Monitoring for Adaptive Management, Addressing SLR, and Future Funding

Compliance requirements (CCDP, MMRP, and Settlement Agreement), implementation actions, and beyond-compliance recommendations are set forth within this NRMP. For the mandatory actions, required implementation has been already identified in the CVBMP controlling documents. An implementation table presented in this chapter captures relevant actions. Some beyond-compliance ideas are expanded upon in Appendix E: Potential Concepts for "Beyond Compliance" Conservation. This chapter also provides guidelines for monitoring the NRMP's effectiveness, building detail into monitoring requirements drawn from the controlling documents, to improve decisions about natural resource conservation over time.

7.1 Key Messages

- This Chapter reflects this NRMP's Vision and Goals.
- Investment in natural resources conservation requires a balance between short-term protection needs and achieving long-term ecosystem resilience. This should be done against a backdrop of ecological threats and vulnerabilities that are changing as a result of local and global change.

- Organizational constraints and limited budgets require that a great deal of creativity and legwork be employed to implement this NRMP, which is beyond the authority of any one institution or jurisdiction, and will be subject to future discretionary decisions that will naturally take into account budgetary and other considerations.
- For core requirements of the CCDP, MMRP, and Settlement Agreement, funding sources are designated. Recommendations contained in the NRMP may require a long-term financial strategy possibly including a blend of public and private sources, such as operations budgets, grants, private mitigation offset funds, and even volunteerism.
- A collaborative approach has been the hallmark of the CVBMP planning process. It is the intent of this NRMP to continue the visionary and collaborative approach to protect natural resources.
- Partnership in conservation of natural resources, crossing administrative boundaries, particularly with regard to the WHAs, may be necessary to achieve the goals and objectives of the NRMP.
- Funding for NRMP Implementation will come from revenues generated by CVBMP development (direct or indirect funds) (Settlement Agreement 3.4 and 4.1.1).

7.2 Implementation Challenges

NRMP implementation approaches will need to undertake short-term compliance and protection responsibilities. The long-term planning horizon includes budgetary considerations; challenges for sustainable human living; changing climate and its potential impact on water regime, heat, and crucial coastal resources; and layers of uncertainty about future habitat and species relationships. It is not an overstatement to say that implementing this NRMP will take more creativity, flexibility, and legwork than coming up with its management approach. On the other hand, the precious and irreplaceable natural resources in and around the CV Bayfront merit the effort and continued commitment required.

7.3 Monitoring to Assess and Maintain NRMP Effectiveness

Monitoring is a basic component of adaptive ecosystem-based management that is question-driven: it sets up the feedback to decision-makers and the public on whether progress towards the plan's Vision, Goals and Objectives is achieved. Conceptually, the benefit of monitoring is without doubt. However, it is important that the monitoring effort be efficient and continually adapted to provide information that is timely, adequate in depth, extent, and quality to guide decisions, but not cost more than is needed. Monitoring will facilitate adaptive management, help achieve beneficial change, and focus investment. It asks both the big question--"Are we making a difference for the natural resources we value?"--and accountability questions for sponsors of the work--"Did we do what we said we would?" It should have many facets that are not necessarily data-driven, such as the use of comparative case studies that educate and inspire improvement.

Because the CVBMP vicinity is extraordinarily connected in all dimensions with wide-ranging species as well as resident species, the monitoring effort needs to consider the results of other programs, such as the Regional Harbor Monitoring Plan, in

order to assist in interpreting what is going on locally. Through standardization of methods with regional programs, a small local effort will increase its power to interpret trends and also contribute to its cost-efficiency. This will assist to separate local from regional status and trends. Such a program does not have to be costly, and can be assisted and complemented by educational institutions, as well as citizens, local high schools, and other programs. Existing programs are already affording a better understanding of the dynamics of the bay, estuarine/marine system and is a backdrop for understanding the CVBMP footprint and WHAs.

The Monitoring Indicators in this NRMP are intended to supply information on either best practices and their implementation (see Table 7-3 at the end of this section), or the health/integrity of the resources that are the focus of NRMP goals (see Table 7-4 at the end of this section).

In addition to the best practice and health/integrity monitoring, conservation planning species (or species groups) are to be used for considering conditions such as the habitat value of the sea level rise buffer as waters migrate landward, habitat enhancement, or other opportunities as they arise (examples are in Section 2). Conservation planning species are not intended to be separately monitored in themselves, but they represent and are a proxy for some of the Chula Vista bayfront's core natural resource values (Section 1.3, Appendix C.2.1). The conditions they require and their presence would reflect the historic range of fish and wildlife uses of south San Diego Bay. They include fish and wildlife that benefit from the adjacency of estuarine intertidal, subtidal, and adjacent habitats both landward and bayward for different life cycle needs. Conservation planning species and groups are non-regulatory since the state- and federally-listed species already have legal protection.

Objective 7.3-1

Adaptive and Accountable NRMP Implementation. Ensure that NRMP implementation is adaptable and accountable by providing feedback to managers and decision-makers.

I. Periodic review of the NRMP will address monitoring the efficacy of water quality improvement projects (if applicable) and management actions (part of Settlement Agreement 3.3; CCDP 1.5).

Summary of Required WAG meetings and NRMP Reviews (Settlement Agreement 10.4-10.5, CCDP 17.2):

Meetings
- **Every 6 months 1st 10 years**
- **Every year, after 10 years**

Scheduled NRMP Reviews
- **Each year for 5 years**
- **Every other year or as needed, years 6-10.**
- **Thereafter once every 5 years**

II. Every 6 months. The WAG will meet as needed, but at a minimum of every six (6) months for the first ten (10) years and annually thereafter (Settlement Agreement 10.4). The WAG will review the NRMP to: (i) determine the effectiveness of the NRMP in achieving the Management Objectives; (ii) identify any changes or adjustments to the NRMP required to better achieve the Management Objectives; (iii) identify any changes or adjustments to the NRMP required to respond to changes in the man-made and natural environments that are affecting or, with the passage of time may affect, the effectiveness of the NRMP in achieving the Management Objectives; and (iv) review priorities relative to available funding. At its meetings, the WAG may also consider and make recommendations regarding (x) implementation of the NRMP as needed, (y) Adaptive Management Review, and (z) NRMP Amendments. (Settlement Agreement 10.4, 10.5 & CCDP 17.2)

III. CREATION, PERIODIC REVIEW AND AMENDMENT OF THE NRMP. The NRMP will be a natural resources adaptive management and monitoring plan, initially prepared in consultation with the WAG, defined in Section 10.1, and reviewed and amended in further consultation with the WAG one year following adoption of the NRMP, and annually thereafter, for the first five years after adoption, after which it will be reviewed and amended as necessary every other year for the next six (6) years, then once every five (5) years thereafter, each in accordance with Section 10.5. If the Resort Conference Center (RCC) is not pursued in the first five (5) years after certification of the Final EIR, this schedule will be amended to ensure that the NRMP is evaluated every year for five years after the development of the RCC. The periodic review of the NRMP, described in the preceding sentences, is hereinafter called "Periodic Review." A material revision of the NRMP is hereinafter called an "NRMP Amendment." Nothing in the foregoing schedule requirements will be interpreted to preclude a speedy response or revision to the NRMP if necessary to abate an emergency condition or to accommodate relevant new information consistent with the Management Objectives. Any permanent changes to the NRMP will be subject to Section 10.5. Preparing of the NRMP will begin within six months of the filing of the Notice of Determination for the Final EIR by District and will be completed prior to the earlier of: (a) Development Commencement; (b) issuance of a Certificate of Occupancy for the Pacifica project; or (c) three years. Periodic Review will address, among other things, monitoring of impacts of development as it occurs and monitoring the efficacy of water quality improvement projects (if applicable) and management and restoration actions needed for resource protection, resource threats, management (i.e., sea level rise, trash, window bird strikes, lighting impacts, bird flushing, water quality, fireworks, human-wildlife interface, education and interpretation programs, public access, involvement and use plan, management of the human-wildlife interface, wildlife issues related to facilities, trails, roads, overlooks, planning, and watershed coordination) and other issues affecting achievement of Management Objectives and related to Adaptive Management Review (Settlement Agreement 3.3 & CCDP 1.5).

IV. Other than with respect to matters specifically addressed in this Agreement, the Final EIR, and as components of the Proposed Project approval, Coalition member organizations shall have the right to fully participate in environmental review and project-approval processes for components of the Bayfront development that require project-level review subsequent to Final EIR certification and Proposed Project approval (Settlement Agreement 17.4).

V. The WAG will meet as needed, but at a minimum of every six (6) months for the first ten (10) years and annually thereafter (Settlement Agreement 10.4).

The requirements as noted in paragraphs I-V above shall be implemented in compliance with the Settlement Agreement and CCDP.

A. For monitoring the NRMP as a whole and at the project level, the guidelines that follow may be implemented. See Map 7-1, Map 7-2, Map 7-3, Map 7-4, Table 7-1, and Table 7-2 for a summary of baseline acreages of previously mapped habitats. Map 7-1 includes an overlay of upland transition areas and acreages that were not mapped as such but are estimated based on tidal elevations (LIDAR elevations from SanGIS, 2005).

- Establish a point of reference or baseline consistent with this NRMP. Baseline means the present status of the indicator plus whatever its threats/pressures are. The baseline includes the following: structure

and acreage of marine and terrestrial communities, and socioeconomic attributes that are part of the ecosystem services approach (includes public trust and access).

- Protocols for establishing baseline conditions should use standardized methods that are accepted by regulatory agencies and are consistent through time.
- Quantitative methods should be established for wetlands, including salt marsh, riparian, or streams (CRAM).
- Quantitative methods should be established for characterizing and mapping terrestrial vegetation (Vegetation Classification Manual for Western San Diego County [San Diego Association of Governments 2011], which builds upon the Manual of California Vegetation, 2nd edition [Sawyer et al. 2009]).
- Baselines for highly disturbed terrestrial sites should follow the same vegetation rapid assessment method as used for terrestrial vegetation surveys and mapping, identifying all invasive plants present and their quantitative characteristics.
- Establish quantitative milestones and benchmarks where appropriate (see the Objective for Long-term Conservation in Section 2.2: Mitigation Compliance and Improving Habitat Quality in the CVBMP Footprint and WHAs on page 2-11, CCDP 1.4, and Settlement Agreement 4.4.6.5).
- Use data from existing ongoing efforts of the Port and Navy for monitoring birds, aquatic sea life and aquatic vegetation and others.
- Ongoing monitoring efforts should use the same protocols as used to establish baseline conditions to provide for scientifically defensible analysis of trends over time.

VI. Monitor the effectiveness of NRMP practices in achieving healthy populations of estuarine- and eelgrass-dependent marine life, and adapt as needed.

A. Integrate a quality control process to ensure that monitoring results are accurate and interpreted for the management questions they are designed to answer, and understandable for decision-makers.

VII. Periodic review will address, among other things (Settlement Agreement 3.3; CCDP 1.5):

A. Monitoring of impacts of development as it occurs;

B. Monitoring the efficacy of water quality improvement projects (if applicable);

C. Management (i.e., sea-level rise, water quality, fireworks, education and interpretation programs, public access, involvement, and use plan, and watershed coordination).

VIII. A key component of the NRMP is that it utilizes an adaptive approach to management of resources. As such, the long-term monitoring that guides management actions must be targeted to identify impacts, if any, that are a result of the development and must also be adaptive in structure. Therefore, the long-term monitoring program should be focused on identifying and monitoring metrics associated with linkages between the development and the adjacent natural resources within buffers, restored habitat, and WHAs. Adaptive management would then utilize monitoring results to promote beneficial linkages and to minimize or eliminate negative linkages. Therefore, a monitoring plan shall be developed that focuses on encroachment of invasive species; human activity in buffers and WHAs; nuisance animals; and the effectiveness of human use of the bayfront, trash collection, building construction, landscaping, and stormwater treatment facilities.

A. Sixty (60) days following the signing of an option to lease or similar document for development in the Sweetwater (including Signature Park) or Otay Districts or the development on H-3, H-23, H-13, or H-14, whichever is first, the Port/City will contract with a qualified contractor or use other comparable resources to develop a draft monitoring plan (including baseline conditions for the entire bayfront), identify data gaps, and implementation schedule based on the information in Table 7-3 and monitoring of the status of the natural resources and natural resource indicators included in Table 7-4. The plan will be adopted (including a monitoring framework for the entire bayfront) and will be implemented at the onset of site alteration of the project triggering the development of the plan.

Objective 7.3-2 *Effective and Adaptive Practice.* Monitor the effectiveness of NRMP practices in achieving healthy populations of dependent estuarine and upland transition life, and adapt as needed.

I. Review existing monitoring and research studies conducted throughout San Diego Bay to evaluate the health of marine and terrestrial life, such as water quality trends, periodic fish and avian surveys, and listed species monitoring, including for the green sea turtle and success of the California least tern.

II. Define NRMP research priorities via a collaborative process of defining management questions for researchers to take on, if needed. Interpret regional studies, or species studies on entire migratory paths, for application locally.

   A. What of the CVBMP practices are most cost-effective for benefiting conservation planning species?

   B. Consider supporting research on cost-effective green infrastructure for local benefit.

Map 7 -1 Baseline Conditions Within the Chula Vista WHA

Miles: 0 0.25 0.5 0.75 1

Kilometers: 0 0.25 0.5 0.75 1 1.25 1.5

65065 141

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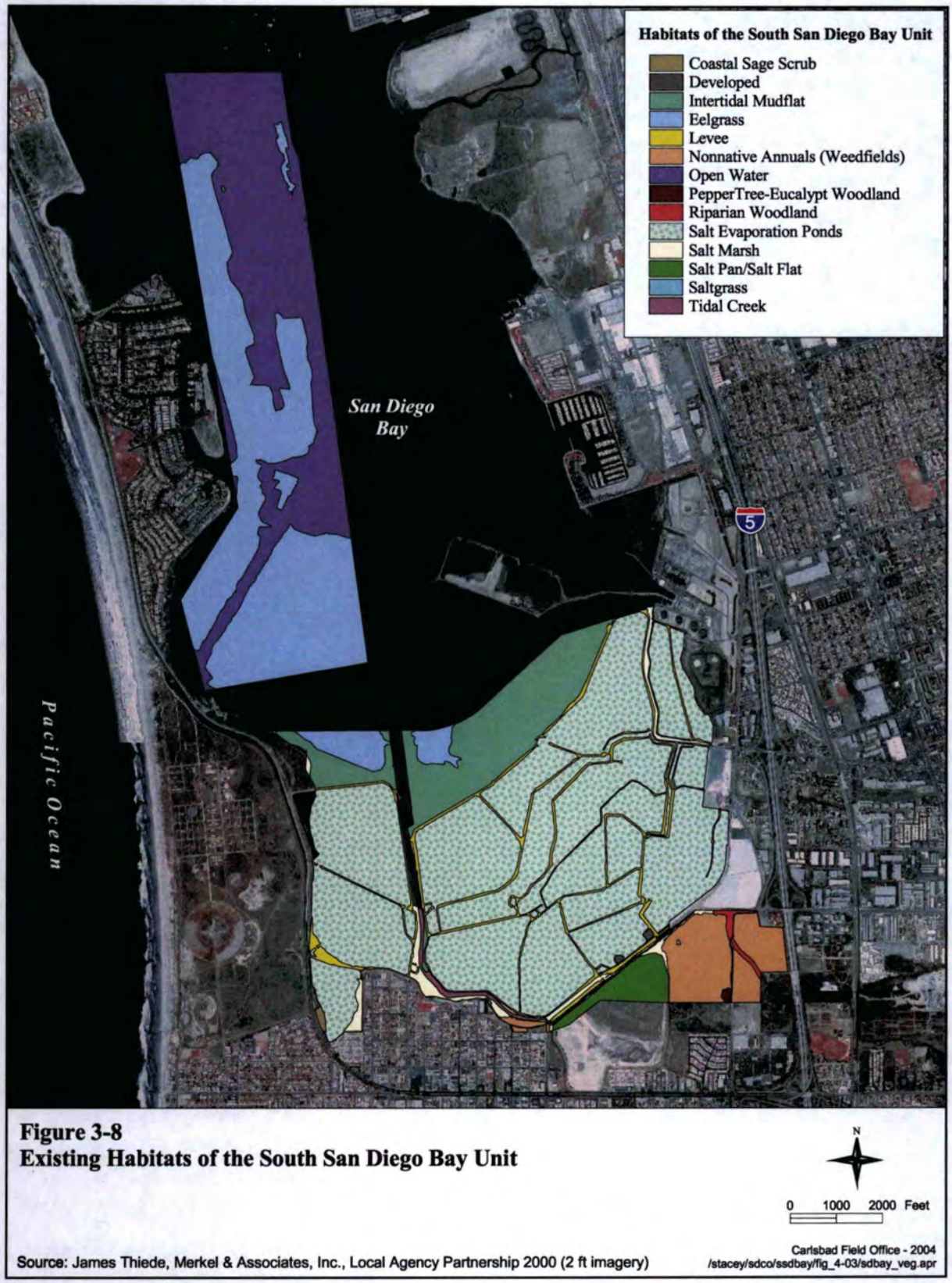
Map 7-2. Habitats of the San Diego Bay National Wildlife Refuge Sweetwater Marsh Unit (taken from USFWS 2006).



Map 7-3. Habitats of the San Diego Bay National Wildlife Refuge South San Diego Bay Unit (taken from USFWS 2006).

Map 7-4. Habitats within the western salt ponds (Ponds 10, 10A, and 11) of south San Diego Bay (USFWS 2009).

Table 7-1. Summary of the Habitat Types Occurring on the Sweetwater Marsh Unit (from USFWS 2006).

Habitat Type	Approximate Acres
Artificial Tidal Creek	0.5
Brackish Marsh	1.5
Coastal Sage Scrub	1.0
Coastal Sage Scrub (disturbed)	31.5
Developed/Fill	11.5
Exotic Shrubland	2.0
Fill w/ dune and scrub vegetation	56.5
Maritime Succulent Scrub	3.5
Mudflat	3.5
Nonnative Annuals	3.0
Open Water	1.5
Salt Marsh	184.0
Salt Pan/Salt Flat	7.0
Tidal Creek	9.0

Table 7-2. Summary of the Habitat Types Occurring on the South San Diego Bay Unit (from USFWS 2006).

Habitat Type	Approximate Acres
Coastal Sage Scrub	2.0
Developed	2.0
Eel Grass	440.0
Intertidal Mudflat	220.0
Levee	85.0
Nonnative Annuals	98.0
Open Water	410.0
Pepper Tree/Eucalyptus Woodland	1.0
Riparian Woodland	5.0
Road	2.0
Salt Ponds	964.0
Salt Marsh	30.0
Salt Pan/Salt Flat	30.0
Tidal Creek	11.0

Objective 7.3-3 *Adopt Bay-estuarine and Biodiversity Conservation Planning Species for planning NRMP success.*

I. Consider using conservation planning species to inform NRMP success for beyond-compliance work provided funding is available. These species are endemic or dependent on the south bay and can add an important level of detail to a program of successful implementation of work such as habitat enhancement. They help relate physical, chemical, and structural features to specific, local life history needs of fish or wildlife. The role of particular habitats or environmental factors may go undetected if at least some species are not examined rather than habitats alone. Conservation planning species are also meant to provide a practical monitoring and management focus, under the assumption that

managing for certain, carefully selected species of concern will take care of many others with overlapping habitat, food web, and other ecological needs. See Section 2.0: Sustainable and Improved Native Habitats and Communities for identification of conservation planning species.

II. As habitat complexity is often related to the success of species, monitor variety within habitats as part of a baseline description of resources, when feasible such as through use of CRAM and other methods as applied by USACE. Wetland size, complexity, and connectivity is related to value for wildlife. Methods are established for qualitative ranking assessments for estuarine communities. The presence of vegetation, macro and micro algae, mudflat benthic assemblage zones, tidal creeks and microchannels, invertebrate burrows used by gobies, nearshore shallow water, uninterrupted tidal change, saline pools and access to brackish and freshwater habitats in Telegraph Creek, nearshore and open water, and the benthic environment are all assessment criteria. It is a goal that habitat values are maintained in quality at or above their baseline, over time, in the CVBMP footprint and WHAs. Using indicators, or proxies for healthy natural resource systems, is an effective way to provide insight into the status of those desired conditions. A suite of indicators is presented below, according to the management goal for which each indicator provides insight, along with conservation planning species for that habitat (which are not to be monitored in and of themselves, but represent a healthy functioning condition for the habitat of interest). Information on a number of these indicators and conservation planning species is already available through ongoing monitoring, established programs, or through partners (see Table 7-3 and Table 7-4). For some, grant money may be available to fund initiatives for measurement or monitoring. The indicators presented here can be cost-effectively measured or monitored, particularly if done through a multi-party approach. The information below describes ways to evaluate, when possible, the success of NRMP implementation in achieving habitat quality goals.

Table 7-3. Best Practice effectiveness in avoiding and minimizing harm to resources. Monitoring is occasional to ensure design is maintained to standard and is working, and conducted as an ancillary duty of routine maintenance or other activity. The design itself is the main approach to impact avoidance. Since the best practice is intended to protect a specific resource of concern, a measure of the health of that resource is suggested.

Recommended Practice	Purpose	Adopted & Installed to Design Standard? (Y/N)	Maintained to Design Standard?	Standard or Measure. Monitoring Approach
Wildlife Friendly Urban Interface				
Infrastructure designed for low number of perch opportunities for large birds	Avoid unnatural level of predators of native birds in adjacent habitat areas.			Deter perching by large birds, such as presence of large horizontal surfaces and tall vertical structures with cross members. Monitor for problem structures and retrofit as needed.
Low impact lighting type and color	Avoid bird disorientation (exterior lighting) or strike (interior lighting visible to outside)			Bird Friendly Building Standards. Incidental observations by maintenance staff or volunteer early morning transect walks, lit areas.
Building Bird Strikes	Avoid migratory bird kill due to disorientation			Bird Friendly Building Standards. Incidental observations by maintenance staff or early morning occasional searches near large areas of glass or lit structures during spring and fall migration
Trash, built environment and upland habitats - retrofits	Avoid unnatural levels of predators and pest wildlife. Visual aesthetics.			Level of effort reported by groundskeeping staff. Predator control report.
Wildlife-friendly pet practice, residences	Avoid unnatural levels of mammalian predators			Enforcement by HOA. Predator control report.
Sea Level Rise Buffer	Allow room for flood tides with sea level rise			Total acreage. Acreage of estuarine habitats, values. Trend in vegetation condition and configuration. Presence of upland transition plant assemblages (salt tolerant). Invasive species condition. Abundance of non-native, pest wildlife.
WHA Buffers	Protect wildlife use and natural behavior patterns	Policies in place	Speed limits and development restrictions, routine enforcement.	Avian abundance and diversity, local compared to all bay trends based on regular all-bay surveys. Predator levels, terrestrial invasive species, unwanted ecotype conversion
Minimizing Harm to Aquatic Resources				
Stormwater, non point source urban runoff control	Avoid water pollution			Routine Municipal Permit measures Terrestrial weed establishment from runoff detected during weed mapping, CRAM surveys. Streambed scour, decreased base flow, hydromodification. Shoreline erosion. Periodic review of LIDAR/aerial photo imagery. Citizen reporting.
Invasive species detection and control	Prevent food chain and other harm to native aquatic life through early detection and control of invasive species	Policies in place	Routine enforcement of prevention measures. *Caulerpa* surveys	Local new introductions compared to all-bay, regional, and statewide. RHMP, Bight reports on invertebrate composition.
Exemplary treatment wetlands	Stormwater treatment, clean runoff to bay			Routine Municipal Permit measures, RHMP and Bight. Citizen reporting program.
Permeable surfaces	Extent in area			Ratio permeable/non-permeable. Routine Municipal Permit measures
Trash retrofits associated with stormwater. Intertidal and subtidal trash	Avoid pollution, ingestion or entanglement by aquatic species			Local Abundance/All Bay trend RHMP including Debris Special Studies, Bight program

Table 7-3. Best Practice effectiveness in avoiding and minimizing harm to resources. Monitoring is occasional to ensure design is maintained to standard and is working, and conducted as an ancillary duty of routine maintenance or other activity. The design itself is the main approach to impact avoidance. Since the best practice is intended to protect a specific resource of concern, a measure of the health of that resource is suggested.

Recommended Practice	Purpose	Adopted & Installed to Design Standard? (Y/N)	Maintained to Design Standard?	Standard or Measure. Monitoring Approach
Watershed coordination	More effective management of diffuse causes of impacts to bay	Partnerships in place	Participation and joint project implementation	Local Abundance/All Bay trend RHMP including Special Studies, Bight program Routine Municipal Permit measures
Ecosystem Services in the Built Environment				
Low carbon footprint	Reduce greenhouse gases			LEED certification
Low water footprint	Water conservation	Measures in place	Voluntary compliance	Level of use
Connectedness to adjacent communities	Extended community well-being			Use by nearby communities through pedestrian, public transit, bicycle access
Human Experience of Nature				
Public trails and other access	Access for people to experience nature while minimizing disturbance to wildlife			Human use level and trend.
Ecotourism visitors	Exemplary demonstration of wildlife-friendly urban practice	Educational media		Organized visitor-days. Economic health.
Sustainability visitors	Exemplary demonstrations to promote sustainable living	Educational outreach media		Organized visitor-days. Educational opportunities (signage, etc.)
Aesthetics, sense of place	Community well-being tied to nature's benefits	Opportunity for discovery and interactive experience with nature	Participation in opportunities	Occupancy trends, use of trails and amenities, organized volunteerism, local public engagement. Economic health. Low need for enforcement.

Table 7-4. Indicators of Natural Habitat and Community Health and Integrity.

	Measure	Baseline/Reference Condition	Trend Assessment	Data Source
Habitat Extent & Continuity				
Eelgrass extent	▪ Extent in acres (see map)	▪ Maximum extent 1999-2014	▪ Extent compared to maximum extent, local compared to bay as a whole	▪ Ongoing, periodic, baywide eelgrass surveys
Intertidal Mudflat	▪ Extent in acres (see map), fragmentation	▪ INRMP ▪ Initial CRAM or use 50% CRAM as approximate reference condition	▪ Improvement or decline relative to baseline	▪ Periodic CRAM assessment
Intertidal Salt Marsh	▪ Extent in acres (see map), fragmentation ▪ Habitat value	▪ Aerial image ▪ Initial CRAM or use 50% CRAM as approximate reference condition	▪ Improvement or decline relative to baseline	▪ Periodic CRAM assessment ▪ Aerial imagery every 5 years
Upland Transition	▪ Acreage (see map)	▪ LIDAR elevations ▪ Initial vegetation survey	▪ Floristic, semi-quantitative vegetation mapping (e.g. CDFW's VegCamp)	▪ Vegetation condition and map every 5 years or so
Shoreline structures	▪ Proportion containing beneficial estuarine design elements	▪ CVBMP build out	▪ Use by estuarine versus ocean species ▪ Use by natives versus non-native species ▪ Shoreline length	▪ Periodic baywide fish and bird surveys ▪ Terrestrial wildlife report by predator managers ▪ RHMP and Bight invertebrate and zooplankton reports
Resilient Habitats and Communities				
Zooplankton and benthic invertebrates as food for fish and birds	▪ Abundance, proportion estuarine versus ocean, native versus non-native	▪ Earliest RHMP and Bight surveys with plankton tows and benthic sampling	▪ South bay harbor areas compared to baywide trend	▪ RHMP and Bight programs
Fish	▪ Productivity of fish for wildlife food/forage ▪ Indices reported in baywide fish survey	▪ Earliest baywide survey ▪ Diversity: historic records	▪ Fish indices stable or Increasing ▪ Toward historic	▪ Periodic baywide fish surveys
Birds	▪ Large shorebird abundance ▪ Small/medium shorebird abundance ▪ Winter waterfowl abundance	▪ Earliest baywide survey 2006 ▪ Diversity: historic records	▪ Abundance of shorebirds, migratory waterfowl, seabirds stable or increasing in south bay relative to baywide. ▪ Toward historic	▪ Periodic baywide avian surveys
Upland transition values	▪ Acreage of upland transition habitat ▪ Representative saline-tolerant transition species, including pollinators	▪ LIDAR elevation between 4.9 and 9.2 ft above MSL.	▪ Stable or improving representation of upland transition species ▪ Ratio native/non-native ▪ Pollinator plants - continued presence	▪ LIDAR surveys ▪ Vegetation map every 5 years or so ▪ Citizen monitoring
Riparian and brackish	▪ Habitat value	▪ Riparian CRAM method, EIR vegetation map	▪ No degradation relative to initial CRAM assessment. No channel widening	▪ Vegetation map every 5 years or so
Intertidal mudflat values	▪ Physical/biological integrity	▪ 75% CRAM or earliest assessment ▪ Connectivity, width	▪ Stable or improving	▪ CRAM survey
Salt marsh values	▪ Physical/biological integrity	▪ 75% CRAM or earliest assessment ▪ Improved connection of marsh fragments	▪ Stable or improving	▪ CRAM survey

Indicators of Healthy Habitats

- Subtidal.[1] Status and trend of total nursery fish populations as a group as interpreted in the current program of baywide surveys funded by the Port and U.S. Navy (numbers are most recent surveys by Vantuna Research Group [2012], representing the baywide catch and the catch in south bay, respectively): California halibut (79 and 12), yellow-fin croaker (19 and 12), barred sand bass (41 and 15), bonefish, shortfin corvina (0), deepbody anchovy (17 and 14), slough anchovy (1566 and 750), arrow goby (2438 and 500), California killifish (8 and 5), bay blenny (3 and 0), cheekspot goby (16 and 6), and shadow goby (9 and 8), as well as NOAA trust resources , such as spotted sand bass (332 and 89), yellowfin croaker (19 and 12), and California scorpionfish (8 and 0).
  - Production of fish for avian foraging: certain schooling fishes form an important forage base for rare seabirds; the most abundant in the south bay are slough anchovy, topsmelt, and shiner surfperch.
  - Maintenance of acreage of shallow subtidal eelgrass.
  - Presence of green sea turtles.
  - Presence of migratory waterfowl (black brant, lesser scaup).
- Intertidal Mudflat.
  - The mudflats are sufficiently broad or gently-sloped to maintain or improve tidal exposure to accommodate the various feeding strategies of conservation planning fish and shorebirds. Scores that rate the quality of estuarine habitats using the CRAM method are improved.
  - Intertidal mudflats in the south bay are a major component of the food web for shorebirds because of the availability of small fish and invertebrates for birds to feed on between the tides. Preservation and restoration of mudflats are essential to shorebird populations. The metric for a success indicator is maintaining and building upon the area of exposed mudflats as a food source for birds.
  - The following endemic fishes continue to be present: gobies (arrow, shadow), deepbody anchovy, and slough anchovy.
  - The following conservation planning invertebrates, which are indicators of healthy ecosystem function, continue to be abundant: ghost shrimp/California horned snail burrows, crab burrows, pollinator and predatory insects.
- Salt Marsh. Where feasible, salt marsh is maintained in quality in its current condition or above the pre-CVBMP development functional condition, as evaluated by the CRAM or similar aquatic assessment method.
  - Presence of conservation planning species: curlews and wandering skipper.
- Upland Transition. Distribution and diversity of upland transition species is maintained, where feasible, at or above pre-CVBMP development levels within the CVBMP footprint and WHAs.
  - Presence of upland transition flora includes estuary suaeda, woolly seablite, California boxthorn, Palmer's frankenia (these planning species currently occur at similar elevations around San Diego Bay).
  - Presence of upland transition conservation planning fauna: large-billed savannah sparrow, black-tailed jackrabbit, San Diego horned lizard, burrowing owl, native butterflies, bees, moths, and other pollinators (beetles, birds, bats).
  - Invasive species abundance decreases.

1. Subtidal obligations in the MMRP have to do with in-water work regarding reconfiguring marinas and the H St. Pier.

Indicators of Healthy Habitat Connections and Linkages

- Recovery of salt marsh connections to intertidal mudflat, and connection of marsh fragments.
- Habitat connections are available for fish: striped mullet (stream mouths), California halibut.
- Presence of host/food plants for migratory pollinators.
- Presence of migratory "stepping stone" shorebirds (short-billed dowitcher, western sandpiper, red-necked phalarope, long-billed curlew, red knot).
- Enhanced connections from bay habitats to brackish marsh and stream habitat to benefit a broad range of species.
- Avian habitat connections exist to upland areas for sandpipers, dunlin, and godwit.
- Algal cover by dominant type (visual estimate) decreases.

Indicators of Restoration Effectiveness

- Acres restored at or above pre-existing functional quality, based on CRAM, hydrogeomorphic assessment, or other scientific method.
- For WHAs and surrounding areas, consider the recovery of habitat in the order of most lost: 1) tidal flats, for which loss has been greater than that for tidal marsh in southern California and San Diego Bay (Macdonald et al. 1990; Port and U.S. Navy 2013); 2) salt marsh; 3) eelgrass. Losses of wetland/upland transition habitats from pre-development conditions are extremely high, though the exact area is not known.
- Presence and abundance of conservation planning species of wildlife, and plants.
- Presence of functional groups of upland transition-dependent wildlife and plants.
- The CVBMP footprint and WHAs (see Map 1-1, Map 1-2, and others in Section 1.0: Introduction) contain the full variety of physical attributes that support the unique biodiversity and productivity of this location. These attributes include warm, shallow, quiet water with adequate tidal exchange; clean water and sediment; broad and connected intertidal shorelines with gentle slopes; eelgrass; emergent vegetation; secondary microchannels; a range of estuarine salinity conditions; fine sediments; and upland refugia during tidal surges.
- Connectivity between fragments of mudflat, marsh, upland transition, and riparian habitats are improved, as are conditions for conservation planning species that benefit from this connectivity.
- Connectivity includes some brackish water and riparian habitat.
- Topographic and vegetation complexity in habitats is maintained or improved for conservation planning species.
- Artificial habitats in the intertidal zone of areas in the vicinity of the CVBMP footprint are designed with consideration to provide maximum ecosystem services including discouraging invasive species.

Indicators of Minimizing Harm to Aquatic Resources

- Pervious surfaces and structures significantly reduce stormwater runoff to bay.
- Trash retrofits effective including those for trash generated within the Bayfront and those that intercept trash in tributaries that flow through the Bayfront.
- Regulatory compliance for constituents defined by the RWQCB and the San Diego Basin Plan is improving.
- Upstream partnerships are meeting and working cooperatively to benefit the Bayfront habitats.

- Monitoring data can be integrated with baywide and regional programs.

Indicators of an Urban-Wildland Interface Conducive to Use by Native Wildlife

- The Chula Vista Bayfront provides public access that attracts visitors from outside the region as well as local residents to use the marine related recreational facilities and public areas. It also provides a peaceful sanctuary for those viewing native wildlife.
- Design of the CVBMP and a sense of ownership by the local community and visitors leads to compliance with guidelines pertaining to pets, trash, lighting, noise, habitat boundaries, etc.
- Trash receptacle success is evident by the absence of trash improperly disposed of, both within the footprint and WHAs and by absence of pest species (e.g. corvids, possums, rats) in the vicinity of human use areas (e.g., Signature Park).
- Raptor or other predator impacts on native species are not above natural levels in the habitat areas.
- Mammal predators within WHAs are not above natural levels, or levels ecologically sustainable for avian productivity in the NWR.
- Pets and feral animals do not get into habitat areas.
- Native pollinators are present, including long-distance migratory species.

Indicators of Built Environment Ecosystem Services

- The bayfront and Chula Vista's urban core are increasingly connected with neighborhoods to the east as shown through visits via public transit, pedestrians, bicycles.
- Cooling zones, provided by shade-producing vegetation and cooling structures, accommodate people during intensifying heat waves.

Indicators of Education that Inspires and Promotes the Human Experience of Nature

- People of all abilities and social groups are recreating, learning, thriving as they experience natural resources.
- Signature Park engages and inspires the public about coastal and bay-estuarine natural resources.
- Volunteer and other public engagement is occurring. People want to volunteer as docents, monitors, weed pullers, trash collectors.
- Children are connecting with nature.
- Nature conservation groups are visiting.
- Awareness and attitude surveys of employees, residents, business owners show positive understanding of sustainable living with natural resources.
- Organized visits occur by those interested in urban sustainability.
- Organized ecotours take place.
- Quiet, peaceful communion with nature and family is commonplace.
- Interpretive signage and brochures significantly add to the visitors' knowledge and appreciation of the natural resources of the Bayfront.

- There are demonstration sites for education about stormwater capture and urban runoff quality (Settlement Agreement 4.6), and other techniques that mimic watershed processes for clean water. Other demonstration sites could show examples of sustainable design within the CVBMP footprint, such as minimizing the ecological footprint of water consumption, carbon, and habitat adjacency (such as appropriate lighting and management of bird strikes).

Indicators of Effective NRMP Integration and Implementation

- Seamless management across jurisdictions.
- Management is consistent with tidelands trust requirements and restrictions.
- Management approach provides a clear process for adapting to climate change as future development plans come forward.
- The NRMP serves as a model plan for other coastal management efforts in California and the United States.
- A sustainable and prioritized comprehensive funding program is identified, developed, and maintained.
- Funds are efficiently used to achieve project goals.
- An adaptive management and monitoring strategy provides for best available science and real-world capacity to continuously implement the best strategies.
- Enhancement opportunities are aligned to optimize benefits to people and native fish and wildlife communities as measured by ecosystem services.
- Partnerships allow cost-efficient implementation of longer-term goals and objectives:
  - Restoration projects are improved through financial partnerships, such as through grants or market-based opportunities.
  - Environmental organizations whose own objectives can be achieved by participating in the implementation of the NRMP.
- Grant funding is attracted to area.
- Awareness of the key findings of supporting research projects by decision-makers and the public.
- Mitigation projects are effective at contributing to NRMP goals and objectives.

7.4 Implementation Responsibilities for Compliance-driven Actions

7.4.1 Roles, Responsibilities, and Funding Mechanisms from Existing NRMP Controlling Documents

Some implementation roles are identified in the CCDP, the MMRP, and the CVBMP Settlement Agreement. Direct quotes from NRMP controlling documents are presented in blue boxes below. Advisory recommendations of this NRMP on how to accomplish some of the NRMP's articulated goals are not in blue boxes. Please see the Appendix C: Setting for tables on the CVBMP parcels, regulatory drivers, and a map of jurisdictional waters and wetlands as described at the time of the CVBMP EIR.

Funding for the implementation of the NRMP will be provided by the District, City and RDA. To meet these obligations, the District, City and RDA will commit revenues or otherwise provide funding to a JPA formed pursuant to the California Marks-Roos Act, Articles 1, 2, 3 and 4 of Chapter 5 of Division 7 of Title 1 of the California Government Code. District, City, and RDA will ensure the JPA is specifically charged to treat the financial requirements of this agreement as priority expenditures that must be assured as project-related revenues are identified and impacts initiated. The District, City and RDA expressly acknowledge the funding commitments contemplated herein will include, but not be limited to funding for personnel and overhead or contractor(s)/consultant(s) to implement and ensure the following functions and activities (Settlement Agreement 3.4):

- On-site management and enforcement for parks and Wildlife Habitat Areas as necessary to enforce restrictions on human and Predator access regarding Wildlife Habitat Areas (Settlement Agreement 3.4.1);
- Enforcement of mitigation measures including, but not limited to, trash collection, noise restrictions, removal of invasive plants, habitat restoration, and park use restrictions (Settlement Agreement 3.4.2);
- Coordination, development, implementation and evaluation of effectiveness of education and mitigation programs, including implementation of the NRMP (Settlement Agreement 3.4.3);
- Evaluation of effectiveness of bird strike mitigation and design measures (Settlement Agreement 3.4.4);
- Water quality protections (Settlement Agreement 3.4.5); and
- Coordination of injured animal rehabilitation activities (Settlement Agreement 3.4.6).

Ensure the Port, City and RDA are not required to expend funds for NRMP implementation until project-level revenues are identified in accordance with Section 3.4 [of the Settlement Agreement] and impacts initiated (Settlement Agreement 4.1.1)

The NRMP Implementation Table summarizes the strategies presented in the NRMP and some implementation roles. Among other descriptive information for each strategy, the Implementation Table also identifies the event that triggers the strategy, the current status of implementation and the entity responsible for funding. This table will be used to guide and track NRMP implementation.

Some roles and responsibilities are defined through mitigation requirements. The following tables in Sections 7.4 through 7.4.1.3 are developed from the MMRP of the CVBMP EIR. They show the mitigation acreage and responsible party as it was assigned, by land cover or wetland type. However, the footprint of the CVBMP area has changed since publication of the EIR because the switchyard has been removed from the footprint.Therefore, as portions of the CVBMP project are designed and undergo further environmental review, impacts will be calculated and addressed.

I. RESERVATION OF DISCRETION. The contents of this Agreement notwithstanding, District and City reserve their discretion to approve or disapprove all actions which require by law the exercise of discretion and which District and City cannot lawfully be committed to by contract. Such reservation of discretion will apply to all contemplated legislative and quasi-judicial actions include, without limitation, approval of land use entitlements, CEQA compliance, the exercise of eminent domain, code enforcement and the making of findings and determinations required by law (Settlement Agreement 22).

II. THE DISTRICT'S AND CITY'S UNDERTAKINGS. The undertakings of the District and City set forth in Settlement Agreement Sections 3 through 10 and 13 through 16 of this Agreement provide additional mitigation measures that will be incorporated into the Final EIR and the MMRP, and will be implemented by the District and City and may be enforced by the Coalition or any member organization as mitigation measures. The Parties further agree that the Coalition or any member organization have standing to enforce mitigation measures pursuant to Code of Civil Procedure section 1085 and Public Resources Code section 21081.6(b) (Settlement Agreement 21).

III. Notwithstanding the preceding provisions of this Section 17, in the event the Proposed Project is approved, the Coalition reserves the right to object to any material failure to implement the Proposed Project in compliance with this Agreement, the MMRP and all applicable laws, regulations or permit requirements (Settlement Agreement 17.7).

7.4.1.1 Port of San Diego

Table 7-5, Table 7-6, and Table 7-7 summarize mitigation estimates and ratios in the CVBMP EIR, which is the controlling document for these mitigation ratios.

Table 7-5. Project Level Mitigation Required for Significant Impacts to Vegetation Communities and Land Cover Types — Port Lands. The Project Level categories refer to work that is defined sufficiently that is tied to a specific development project.

Vegetation Community/ Land Cover Type	Mitigation Ratio for Permanent Impacts	Mitigation Ratio for Temporary Impacts	Project Level Permanent Impacts (acres)	Project Level Temporary Impacts (acres)	Total Impact Acreages	Mitigation Requirement Total (acres)
Disturbed Diegan coastal sage scrub	3:1[a]	1:1	0.79	0	0.79	1.19
Southern coastal salt marsh	4:1	1:1	0.03	0	0.03	0.12
Mulefat scrub	3:1	1:1	0.07	0	0.07	0.21
Disturbed seasonal pond	1:1	1:1	0	0	0	0
Non-native grassland	0.5:1	0.5:1	2.14	0	2.14	1.07
TOTAL			3.03	0	3.03	2.59

a. The 3:1 ratio for mitigating permanent impacts to disturbed Diegan coastal sage scrub is a requirement from the CCDP.

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Table 7-6. Program Level Mitigation Required for Significant Impacts to Vegetation Communities and Land Cover Types — Port Lands. The Program Level categories refer to work that may need further environmental review when specific project work is proposed.

Vegetation Community/ Land Cover Type	Mitigation Ratio for Permanent Impacts	Mitigation Ratio for Temporary Impacts	Program Level Permanent Impacts (acres)	Program Level Temporary Impacts (acres)	Total Impact Acreages	Mitigation Requirement Total (acres)
Disturbed Diegan coastal sage scrub	1.5:1	1:1	6.86	0.27	7.13	10.56
Southern coastal salt marsh	4:1	1:1	1.56	0.62	2.18	6.86
Mulefat scrub	3:1	1:1	0	0	0	0
Disturbed seasonal pond	1:1	1:1	9.12	0	9.12	9.12
Non-native grassland	0.5:1	0.5:1	42.46	4.27	46.73	23.36
TOTAL			60.0	5.16	65.16	49.91

Table 7-7. Mitigation Requirements for Proposed Impacts to Jurisdictional Wetland Resources — Port Lands. The Project Level versus Program Level categories refer to work that is defined sufficiently that is tied to a specific development project, versus work that may need further environmental review when specific project work is proposed.

	Project Level Impacts (acres)	Program Level Impacts (acres)	Impact Total (acres)	Mitigation Ratio	Mitigation (acres)	Temporary Impact Mitigation (1:1 ratio)	Mitigation Requirement Total (acres)
USACE Jurisdictional Waters							
USACE Waters of the U.S.	0	1.17	1.17	1:1	1.17	0.87	2.04
USACE Waters of the U.S. — Bay/Marina	0.30	61.66	61.96	not in EIR	not in EIR	0	*
USACE Wetlands (southern coastal salt marsh	0.25	0.42	0.67	4:1	2.68	0	2.68
USACE TOTAL	0.55	63.55	64.10			0.87	4.72
CDFW							
CDFW Streambed	0.00	0.90	0.90	2:1	1.80	0.23	2.03
CDFW TOTAL	0.00	0.90	0.90	–	1.80	0.23	2.03
CCC Jurisdictional Resources							
CCC wetlands	0.08	0.93	1.01	2:1	2.02	0.05	2.07
Potential CCC**	0.00	0.74	0.74	2:1	1.48	0.04	1.52
Former Industrial Areas–areas of questionable jurisdiction**	0.00	2.50	2.50	2:1	5.00	1.50	6.50
CCC TOTAL	0.14	4.17	4.25		8.50	1.59	10.09

7.4.1.2 Project Proponent / Port of San Diego, As Appropriate

The expected impacts of the development to be mitigated are identified in Table 7-8 and Table 7-9, as described in the CVBMP EIR.

Table 7-8. Impacted terrestrial resource areas and mitigation ratios.

Type of Habitat Impacted	Project Location and Phase	EIR Source	Area Impacted (P/T/*)	Mitigation Ratio
Surface water foraging habitat and intertidal mudflat	South Bay Boatyard Marina and with the harbor reconfiguration, Phase IV	Mitigation Measure 4.8-9	1.61 acres (P)	Project Specific
CCC wetlands	Circulation road construction/improvements and the riprap removal and bulkhead replacement	Mitigation Measure 4.8-15	0.51 acre (P)	2:1
CCC wetlands	Parcel OP-2B, re-channelization of the Telegraph Canyon Channel	Mitigation Measure 4.8-15	0.16 acre (P)	1:1
CCC wetlands	Restoration of the ecological buffer within Parcel OP-2A during program-level phases	Mitigation Measure 4.8-16	0.05 acre (T)	1:1
Potential CCC wetlands		Mitigation Measure 4.8-16	0.04 acre (T)	1:1
Former industrial areas		Mitigation Measure 4.8-16	1.5 acres (T)	1:1
Potential CCC wetlands	Circulation roadway construction in the Otay District during program-level phases	Mitigation Measure 4.8-17	0.58 acre (P)	2:1
CCC wetlands	Parcels HP-13B and HP-7 during program-level phases	Mitigation Measure 4.8-18	0.16 acre (*)	2:1
Potential CCC wetlands	Parcel OP-1B during program-level phases	Mitigation Measure 4.8-19	0.16 acre (*)	2:1
CCC wetlands	Parcel O-4 during program-level phase development	Mitigation Measure 4.8-20	0.1 acre (*)	2:1
P = Permanent impacts, T = Temporary Impacts, *= impact not specified as permanent or temporary in the CVBMP EIR				

Table 7-9. Impacted marine resource areas and mitigation ratios.

Type of Habitat Impacted	Project Location and Phase	EIR Source	Area Impacted (P/T/*)	Mitigation Ratio
Eelgrass habitat	South, H Street Pier construction and shading during Phases II and IV	Mitigation Measure 4.9-1	0.8 acre (*)	1.2:1
Eelgrass habitat	Parcel HW-4	Mitigation Measure 4.9-1	0.02 acre (*)	1.2:1
Eelgrass and shallow water habitat	Channel realignment during Phase IV	Mitigation Measure 4.9-2	45.9 acres (*)	1.2:1
Intertidal mudflat pickleweed	bulkhead placement in the marina during Phase IV, Parcel HW-3	Mitigation Measure 4.9-3	0.03 acre (P) 0.001 acre (P)	1:2 1:4
P = Permanent impacts, T = Temporary Impacts, *= impact not specified as permanent or temporary in the CVBMP EIR				

7.4.1.3 City of Chula Vista

The mitigation requirements for the development on City lands are identified in Table 7-10 and Table 7-11.

Table 7-10. Mitigation Required for Significant Impacts to Vegetation Communities and Land Cover Types — City Lands. The Project Level versus Program Level categories refer to work that is defined sufficiently that is tied to a specific development project, versus work that may need further environmental review when specific project work is proposed.

Vegetation Community/ Land Cover Type	Mitigation Ratio for Permanent Impacts	Mitigation Ratio for Temporary Impacts	Project Level Permanent Impacts (acres)	Project Level Temporary Impacts (acres)	Program Level Permanent Impacts (acres)	Program Level Temporary Impacts (acres)	Mitigation Requirement Total (acres)
Disturbed Diegan coastal sage scrub	1.5:1	1:1	0	0	0.25	0	0.25
Southern coastal salt marsh	4:1	1:1	1.07	0.01	0	0	1.08
Mulefat scrub	3:1	1:1	0	0	0.03	0	0.03
Disturbed seasonal pond	1:1	1:1	0	0	0		
Non-native grassland	0.5:1	0.5:1	19.13	0.03	0	0	19.16
TOTAL			20.2	0.04	0.28	0	20.52

Table 7-11. Mitigation Requirements for Proposed Impacts to Jurisdictional Wetland Resources — City Lands. The Project Level versus Program Level categories refer to work that is defined sufficiently that is tied to a specific development project, versus work that may need further environmental review when specific project work is proposed.

	Permanent Impact Project Level (acres)	Permanent Impact Program Level (acres)	Permanent Impact Total (acres)	Mitigation Ratio	Permanent Impact Mitigation (acres)	Temporary Impact Mitigation (1:1 ratio)	Mitigation Requirement Total (acres)
USACE Jurisdictional Waters							
USACE Waters of the U.S.	0	0	0	1:1	0	0	0
USACE Wetlands (southern coastal salt marsh	0.02	0	0.02	4:1	0.08	0.01	0.09
USACE TOTAL	0.02	0	0.02		0.08	0.01	0.09
CCC Jurisdictional Resources							
CCC Wetlands	0.06	0	0.06	2:1	0.12	0	0.12
CCC TOTAL	0.06	0	0.06		0.12	0	0.12

7.4.1.4 Port of San Diego and/or City of Chula Vista

I. Funding for the implementation of the NRMP and for the enforcement and implementation measures shall be provided by the District and City. To meet these obligations, the District and City will commit revenues, or otherwise provide funding to the JPA, formed pursuant to the California Marks-Roos Act, Articles 1, 2, 3 and 4 of Chapter 5 of Division 7 of Title 1 of the California Government Code. District and City will ensure the JPA is specifically charged to treat the financial requirements described this policy as priority expenditures that must be assured as project-related revenues are identified and impacts initiated. The District and City expressly acknowledge the funding commitments contemplated herein will include, but not be limited to, funding for personnel and overhead or contractor(s)/consultant(s) to implement and ensure the following functions and activities (Settlement Agreement 3.4; CCDP 22.1):

   A. On-site management and enforcement for parks and WHAs as necessary to enforce restrictions on human and predator access (Settlement Agreement 3.4.1; CCDP 22.1(a));

   B. Enforcement of mitigation measures including, but not limited to, trash collection, noise restrictions, removal of invasive plants, habitat restoration, and park use restrictions (Settlement Agreement 3.4.2; CCDP 22.1(b));

   C. Coordination, development, implementation and evaluation of effectiveness of education and mitigation programs, including implementation of NRMP (Settlement Agreement 3.4.3; CCDP 22.1(c));

   D. Evaluation of effectiveness of bird strike mitigation and design measures (Settlement Agreement 3.4.4; CCDP 22.1(d));

   E. Water quality protections (Settlement Agreement 3.4.5; CCDP 22.1(e)); and

   F. Coordination of injured animal rehabilitation activities (Settlement Agreement 3.4.6; CCDP 22.1(f)).

The requirements as noted above shall be implemented in compliance with the CCDP and Settlement Agreement.

II. The Port/City shall assign personnel resources to implement the NRMP, at a minimum equivalent to one full time (average 40 hours per week) employee whose duties will include, among others, Program coordination and management, designated to track and coordinate implementation of the NRMP.

III. The Ranger/Docent responsibilities proposed for CVBMP education, outreach will be initiated as project-related revenues are identified in accordance with Section 3.4 of the Settlement Agreement.

IV. Predator management, including management of natural and domestic predator control and trash management to avoid attracting predators, will be implemented as is currently done by the Port with a qualified entity and/or agency.

V. The Port/City will dedicate staff resources as needed to apply for and secure grant funding for NRMP and restoration projects to meet the obligations in the Controlling Documents and to support qualifying projects

Objective 7.4-1 *Effective Measures.* Ensure mitigation and restoration measures are effectively implemented.

I. Conduct studies as necessary to establish sensitive habitat values to support restoration and mitigation planning.

7.4.1.5 Community Benefits Fund

II. The WAG will advise the JPA on expenditure of the Community Benefits Fund consistent with this Plan subject to applicable law (Settlement Agreement 10.6; CCDP 17.3). Written recommendations from the WAG will be forwarded to the District and City for consideration on key decisions as the build-out of the Chula Vista Bayfront project occurs (Settlement Agreement 10.7; CCDP 17.3).

III. PACIFICA INITIAL SALE UNIT CONTRIBUTION. Pacifica Initial Sale Unit Contribution Funds shall be directed to the JPA and placed into a Community Benefits Fund that will be non-wasting, with interest revenues committed to the specific broad categories of: Natural Resources; Affordable Housing; Sustainability/Livability; and Community Impacts and Culture. The Community Benefits Fund revenues shall be spent within the Project Area and Western Chula Vista as further described in Section 10.6, subject to applicable law (Settlement Agreement 3.5).

The requirements as noted above shall be implemented in compliance with the CCDP and Settlement Agreement.

A. The Chula Vista Bayfront Foundation has been established at the San Diego Foundation for the receipt and management of the Pacifica re-sale commitments outlined in an associated document.

7.5 Strategy for Implementing Beyond Compliance Recommendations Including Adaptation to Climate Change

The General Principles outlined in Chapter 1.0 of this NRMP all pertain to the strategic implementation of this NRMP. For example, ecosystem-based management and the use of ecosystem services both provide a framework to evaluate the pros and cons of management from a planning perspective rather than a regulatory driver. They are tools for making more transparent the risks and consequences of choices made. The use of ecosystem services as a framework may resonate with funding agencies since it is emerging federal policy. But no one tool will suffice. Many of the climate change adaptation strategies are contained here because the scale of that problem crosses all scales, jurisdictions, and natural resources concerns of this NRMP.

The WAG will continue to play a key role in advising the District and City in the implementation of this NRMP. As stated in the CCDP, the WAG will advise on cooperative management agreements, Adaptive Management Review and any related wildlife management and restoration plans or prioritizations. The WAG will engage in partnering, education, and volunteerism to support the development of the Chula Vista Bayfront in a manner that effectively protects and enhances the fish, wildlife, and habitats of the area and educates and engages the public (Settlement Agreement 10.1; CCDP 1.1, 17.1).

The WAG will: (i) determine the effectiveness of the NRMP in achieving the Management Objectives; (ii) identify any changes or adjustments to the NRMP required to better achieve the Management Objectives; (iii) identify any changes or adjustments to the NRMP required to respond to changes in the man-made and natural environments that are affecting or, with the passage of time may affect, the effectiveness of the NRMP in achieving the Management Objectives; and (iv) review priorities relative to available funding. At its periodic meetings, the WAG may also consider and make recommendations regarding (a) implementation of the NRMP as needed, (b) Adaptive Management Review and (c) NRMP Amendments (Settlement Agreement 10.5; CCDP 17.2).

I. IDENTIFICATION OF GRANTS. Coalition will use reasonable best efforts to identify, and at each member organization's sole discretion to support, grants and other funding options to assist the District and City meet their obligations under this Agreement (Settlement Agreement 19).

The requirements as noted above shall be implemented in compliance with the CCDP and Settlement Agreement.

7.5.1 Climate Change Adaptation Integration Into the CVBMP Area

Goal

Excellence in Implementing Climate Change Adaptation. Achieve excellence in coastal natural resource management and adaptation for climate change through NRMP implementation.

Objective 7.5-1 *Develop a model adaptation process.* Make clear the process and requirements for incorporating sea level rise considerations into proposed projects, so that the CVBMP area is a model for climate change adaptation locally and elsewhere.

I. Stay informed of sea level rise projections, risks, and anticipated impacts and management strategies.

   A. Participate in annual events with scientists and stakeholders (including other jurisdictions) to understand, incorporate and disseminate information regarding sea level rise and its impacts in the south bay.

II. Optimize the use of mitigation opportunities to adapt to sea level rise. Use mitigation (outside of the MMRP and Appendix 4.8-8 of the EIR) and grant funding opportunities as pathways to climate change resilience (see Settlement Agreement Section 5).

III. Ensure coordination with the District and City Climate Mitigation and Adaptation Plans (CCDP 3.2).

   A. *Sea Level Rise Best Science and Coordination with Climate Mitigation and Adaptation Plans.* Development shall consider the potential changes in functionality of WHA due to rising sea levels and coordinate management with the District and City Climate Mitigation and Adaptation Plans. Siting and design of new shoreline development shall take into account predicted future changes in sea level. In particular, an acceleration of the historic rate of sea level rise shall be considered and based upon up-to-date scientific papers and studies, agency guidance (such as the 2010 Sea Level Guidance from the California Ocean Protection Council), and reports by national and international groups such as the National Research Council and the Intergovernmental Panel on Climate Change (CCDP 3.2).

The requirements as noted in paragraph III.A above shall be implemented in compliance with the CCDP.

   B. Seek to cooperate with other relevant jurisdictions (regional/watershed scale) on a coordinated approach to manage for sea level rise, based on updated information and guidance from information-sharing events, as well as efforts and results already achieved by others.

IV. Consider taking early actions to forestall sea level rise impacts if helpful, such as early soil removal and reconnecting the on-site seasonal marsh to F&G street marsh, consistent with Settlement Agreement 4.4.5 and CCDP 14.5.

V. Review and revise sea level rise management strategies for the Chula Vista Bayfront as new information develops to interpret change in habitat quantity or quality of the WHAs and their connections.

VI. Consider sediment placement options for sea level rise adaptation through a grant or other funding, to include a feasibility study that includes a cost-effectiveness assessment. As sea level rise continues over time, the water depth in the area undergoing sea level rise will increase. The reduction in sediment supply to San Diego Bay that has occurred historically, and is expected to continue in the future, will make it difficult for ground elevations to increase via sedimentation. Sediment could be added to the CVBMP area to counter the inundation effects of sea level rise.

VII. Consider means to accelerate design and implementation of softer shorelines for accommodating sea level rise, starting with the CVBMP Buffer Areas.

Objective 7.5-2 *Reduce Greenhouse Gas and Sequester Carbon.* Contribute to the reduction of regional climate change impacts by reducing GHG emissions and sequestering atmospheric carbon to the maximum extent practical.

Reduction of carbon emissions objective is supported by energy efficiency goals from the Settlement Agreement and also promotion of alternative transportation to/within the CVBMP, as provided in the Settlement Agreement, CCDP, and MMRP.

I. It is recommended that practices to reduce and/or sequester emission of carbon dioxide and other climate change gases be maximized in the CVBMP area through education, outreach, and demonstration projects.

II. Consider carbon sequestration value of habitats such as eelgrass and salt marsh when planning and funding habitat work (refer to Appendix D: Sea Level Rise, Climate Change, and Carbon Sequestration Assumptions). Carbon sequestration occurs at a relatively high level in salt marsh soils, and somewhat less in mudflats and in upland vegetation. This should be part of the equation when optimizing mitigation strategy as it is a potential source of funding for salt marsh improvement (refer to Appendix E: Potential Concepts for "Beyond Compliance" Conservation).

   A. Seek grant funding for a financial feasibility analysis for incorporating carbon offsets as a part of mitigation strategy that benefits habitat goals.

7.5.2 Beneficial Partnerships for Enhanced Implementation Opportunities through Grants, Market Solutions, and Innovation

Objective 7.5-3 *Analyze Financial Feasibility and Trade-Offs.* Apply cost-benefit analyses to choices for investment in natural resources protection, conservation, or restoration, considering public as well as market-based solutions, and emphasizing core south bay values.

I. Consider seeking cost-benefit and trade-off analyses that are ecosystem-service based, and based on the south bay's core values (refer to Section 1.3: The Bayfront Environ's Core Natural Resource Values) and NRMP indicators, so that the short and long-term implications of choices are clear and the benefit of natural resources are fully accounted for. Consider the trade-offs between restoration work that is constrained as to habitat type, scale and location, but may not capture the most benefit from a particular location.

II. Consider a unified conceptual plan for habitat within and adjacent to the CVBMP footprint in order to seek grant funding and to integrate mitigation opportunities.

III. If appropriate, routinely analyze the trade-off between soft and hard infrastructure, or of hybrid infrastructure solutions. Trade-offs include any predisposition to attract or harbor invasive species.

IV. Improve the capacity to meet habitat and sea level rise adaptation purposes of this NRMP through coordinated grant funding, opportunities for market-based solutions such as for carbon offsets, and capacity building for decision-makers and managers. Some of the capacity to meet the NRMP vision may necessarily be regional in approach.

Implementing and funding the NRMP may require partners to address impacts emanating from outside the project footprint, such as water quality concerns from upstream, aquatic invasive species from both marine and freshwater sources, or sea level rise. It may also require a coordinated approach to habitat work in the south bay, so that opportunities to provide for the south bay's core values and most vulnerable conservation planning species (see Section 1.3: The Bayfront Environ's Core Natural Resource Values) are not lost in a project-by-project approach. Also, so that scarce financial resources are invested well for a sustainable future.

A. Implementation of some NRMP recommendations might benefit from a bay-wide or regional approach. For example, restoring as much of the missing tidal flats, marsh, and upland transition habitats as possible, would benefit from a broader management framework, financial feasibility plan, and grant funding, as consistent with landowner mission, policy, and plans (see Appendix E: Potential Concepts for "Beyond Compliance" Conservation).

B. Seek a grant for capacity building for decision-makers, managers, and stakeholders as appropriate. The funds would help establish a framework of continuing education and networking with peer organizations.The intent is to improve decisions and the ability to interpret the goals of this NRMP as issues arise.

1. Consider participating in peer learning networks to support collaborative planning. A model could be the National Forest Foundation. Increase the capacity for a unified message and for advising decision-makers based on the core ecosystem values of south bay and indicators (Section 1.3: The Bayfront Environ's Core Natural Resource Values), and threats to vulnerable natural resources.
2. If resources allow, compile case studies of successful outcomes locally and from other locations for collaborative landscape restoration. These can be more powerful for collaborative learning and beneficial change than a formal monitoring program.
3. Maintain continuity of the "knowledge infrastructure" through personnel and membership transitions, to strengthen stakeholder capacity and ability to benefit the CVBMP project area.

Objective 7.5-4

Watershed-Level Coordination. Align programs and resources for efficiency gains through alliances and partnerships with others, to achieve the water quality standards in the watersheds feeding the CVBMP area.

I. The NRMP will promote, at a minimum, the maintenance and improvement of water quality where possible and coordination with other entities charged with watershed protection activities (CCDP 1.3).

II. Work with partners to correct problems with retrofitting, repair, and maintenance of existing stormwater and flood infrastructure; examples of such challenges include temporary species impacts or activities that encourage invasive species.

III. Where and when possible, recover the natural sediment condition of the CVBMP habitats, which was a combined function of the contributing watersheds and tidal regime, and which sustained wetland and marine habitats with fine sediment and other.

IV. Pursue improvements to prevent litter and pollutants from entering the stormwater collection system. In situations where this is not achieved, provide measures to remove them prior to discharge into the bayfront habitat areas.

7.6 Funding Summary

7.6.1 Funding Prioritization

Ensure the Port, City and RDA are not required to expend funds for NRMP implementation until project-level revenues are identified in accordance with Section 3.4 [of the Settlement Agreement] and impacts initiated (Settlement Agreement 4.1.1).

Funding for the mandatory strategies described in blue boxes and core strategies with green lines is included in financial planning for project implementation. Depending on the type of strategy, these will be funded as a part of construction project costs, operation and maintenance costs, or other identified funding including grants. The NRMP Implementation Table generally identifies the Project Proponent, which may be the Port, City, or a developer, as having Funding Responsibility for design and construction oriented strategies. Operation and maintenance strategies are generally the responsibility of the Port, City or JPA.

For the adaptive or future aspects of the project, the following five evaluation criteria align with this NRMP's guiding principles (Section 1.4: The NRMP's Core Guiding Principles), and could be used to evaluate proposals or emergent financing opportunities, whether work is required by the NRMP's controlling documents or is recommended to meet NRMP goals and objectives.

1. Which NRMP objectives are achieved by the proposed work?
2. Is the proposed work required by the Settlement Agreement, CCDP, or MMRP?
3. Identify which indicators and conservation planning species benefit from the proposed work (see Figure E-2). (These species are to help consider design criteria such as tidal range, sediment, size, or slope of habitat area.)
4. What primary (P) and secondary (S) ecosystem services are provided? Check off in Table 7-12 if, for example:
   - Water quality threat addressed;
   - Flood protection benefit delivered;
   - Species abundance threat reduced;
   - Species habitat improved;
   - Increased recreational opportunity;
   - Increased land value for property adjacent to new natural areas;
   - Improved proximity of nature to recreators;
   - Proximity to trails, roads, boat ramps;
   - Resident or visitor usage rates and people are within walkable, drivable distances of the resource.
5. Additional Ranking Criteria as appropriate:
   - Builds resilience against a known vulnerability identified in the NRMP (climate change, invasion, feral predators).
   - Reduces a threat through habitat improvement in quantity or quality (such as risk to conservation planning species by providing escape cover from predators).
   - Reduces user conflict.
   - Addresses multiple, cumulative impacts - e.g. environmental, subsistence fisheries, commercial fisheries, biodiversity, etc.

- Protects a restoration investment or a future restoration opportunity.
- Ecosystem-based. Gets to the underpinnings of ecosystem values (physical attributes that foster habitat quality).
- Increases ecosystem services: nature-people interface, carbon stocks.
- Restores "missing" habitat elements from historical mudflat, salt marsh, and/or upland transition.
- Ecosystem trade-offs are analyzed transparently.
- Project may be replicated, scaled up, or may catalyze other beneficial work.
- Strengthens other bay-related planning processes.
- Improves probability of successful implementation of CVBMP goals and objectives by making them more operational (provides a valuable management step).

Table 7-12. Fill in with P for primary ecosystem service, and S for secondary service.

X	Icon	Provisioning	X	Icon	Regulating	X	Icon	Habitat/Supporting	X	Icon	Cultural
		Food			Local Climate & Air Quality			Habitats for Species			Recreation, Mental & Physical Health
		Raw Materials			Carbon Sequestration, Storage			Maintenance of Genetic Diversity			Tourism
		Fresh Water			Moderation of Extreme Events						Aesthetic Appreciation, Inspiration for Culture, Art and Design
		Medicinal Resources			Waste-water Treatment						Spiritual Experience, Sense of Place
					Erosion Prevention, Soil Fertility						
					Pollination						
					Biological Control						

Appendix A: Acronyms

Acronym/Abbreviation	Definition
°C	Celsius
°F	Fahrenheit
BMP	Best Management Practice
Buffer Areas	No Touch, Limited Use, and Transitional Use Buffer Areas in the Sweetwater and Otay Districts
Cal-IPC	California Invasive Plant Council
CCB	Center for Conservation Biology
CCC	California Coastal Commission
CCDP	Chula Vista Bayfront Development Policies issued by the California Coastal Commission
CC&Rs	Covenants, Conditions & Restrictions
CDFW	California Department of Fish and Wildlife
CDP	Coastal Development Permit
CEQA	California Environmental Quality Act
CH_4	methane
City	City of Chula Vista
CNPS	California Native Plant Society
CRAM	California Rapid Assessment Method
CVBMP	Chula Vista Bayfront Master Plan
CWA	Clean Water Act
District	Unified Port District of San Diego
DR	Demand Reduction
EE	energy efficiency
EIR	Environmental Impact Report
ESA	Ecological Society of America
ESHA	Environmentally Sensitive Habitat Areas
GHG	greenhouse gases
HLIT	Habitat Loss and Incidental Take
ICLEI	International Council for Local Environmental Initiatives
INRMP	Integrated Natural Resources Management Plan
IPM	Integrated Pest Management
JPA	Joint Powers Authority
JURMP	Jurisdictional Urban Runoff Management Program
LED	Light-Emitting Diode
LEED	Leadership in Energy and Environmental Design
LID	Low Impact Development
M&V Plan	Measurement and Verification Plan
MLLW	Mean Lower Low Water
MMRP	Mitigation Monitoring and Reporting Program
MSCP	Multiple Species Conservation Program
N_2O	nitrous oxide
NGO	non-governmental organization

Acronym/Abbreviation	Definition
NOAA	National Oceanic and Atmospheric Administration
NOD	Notice of Decision
NOI	Notice of Intent
NOP	Notice of Preparation
NPDES	National Pollutant Discharge Elimination System
NRC	National Research Council
NRMP	Natural Resources Management Plan
NWR	National Wildlife Refuge
O&M	Operations & Maintenance
OMRI	Organic Materials Review Institute
ORWMP	Otay River Watershed Management Plan
PMP	Port Master Plan
Port	Unified Port District of San Diego
PWC	Personal Water Craft
QR Code	Quick Response Code
RAMP	Regional Advance Mitigation Planning
RCC	Resort Conference Center
RHMP	Regional Harbor Monitoring Program
ROD	Record of Decision
RWQCB	Regional Water Quality Control Board
SCCWRP	Southern California Coastal Water Research Project
SDRWQCB	San Diego Regional Water Quality Control Board
SWPPP	Storm Water Pollution Prevention Plan
SWQMP	Storm Water Quality Management Plan
SWRCB	State Water Resources Control Board
USACE	U.S. Army Corps of Engineers
USFWS	U.S. Fish and Wildlife Service
WAG	Wildlife Advisory Group
WHA	Wildlife Habitat Area
WQIP	Water Quality Improvement Plan

Appendix B: Ecosystem-Based Management and Ecosystem Services

B.1 Ecosystem-Based Management

Ecosystem-based management has become institutionalized in resource agencies as a core approach to addressing the challenges of protecting and managing ecosystem functions for the benefits they provide.

Human activities on land and in the ocean are changing coastal and marine ecosystems and threatening their ability to provide important benefits to society, such as healthy and abundant seafood, clean beaches, and protection from storms and flooding. Ecosystem-based management is a management approach to address these challenges. It considers the whole ecosystem, including humans and the environment, rather than managing one issue or resource in isolation. Key aspects of Ecosystem-based management include (NOAA 2013):

- Integration of ecological, social, and economic goals and recognition of humans as key components of the ecosystem.
- Consideration of ecological—not just political—boundaries.
- Accounting for the complexity of natural processes and social systems and using an adaptive management approach in the face of resulting uncertainties.
- Engaging multiple stakeholders in a collaborative process to define problems and find solutions.
- Incorporating an understanding of ecosystem processes and how ecosystems respond to environmental perturbations.
- A concern for the ecological integrity of coastal-marine systems and the sustainability of both human and ecological systems.

The following is derived from the Ecological Society of America's (ESA) position on ecosystem management as best science. The ESA describes ecosystem management as driven by explicit goals, executed by policies, protocols, and practices, and made adaptable by monitoring and research based on our best understanding of the ecological interactions and processes necessary to sustain ecosystem composition, structure, and function. It includes the following elements:

1. *Sustainability.* Ecosystem management does not focus primarily on "deliverables" but rather regards intergenerational sustainability as a precondition.
2. *Goals.* Ecosystem management establishes measurable goals that specify future processes and outcomes necessary for sustainability.

3. *Sound ecological models and understanding.* Ecosystem management relies on research performed at all levels of ecological organization.
4. *Complexity and connectedness.* Ecosystem management recognizes that biological diversity and structural complexity strengthen ecosystems against disturbance and supply the genetic resources necessary to adapt to long-term change.
5. *The dynamic character of ecosystems.* Recognizing that change and evolution are inherent in ecosystem sustainability, Ecosystem management avoids attempts to "freeze" ecosystems in a particular state or configuration.
6. *Context and scale.* Ecosystem processes operate over a wide range of spatial and temporal scales, and their behavior at any given location is greatly affected by surrounding systems. Thus, there is no single appropriate scale or timeframe for management.
7. *Humans as ecosystem components.* Ecosystem management values the active role of humans in achieving sustainable management goals.
8. *Adaptability and accountability.* Ecosystem management acknowledges that current knowledge and paradigms of ecosystem function are provisional, incomplete, and subject to change. Management approaches must be viewed as hypotheses to be tested by research and monitoring programs.

Ecosystem function depends on its structure, diversity and integrity. Ecosystem management seeks to maintain biological diversity as a critical component in strengthening ecosystems against disturbance. This challenge is compounded by the fact that diversity itself is a dynamic property of ecosystems. Thus, management of biological diversity requires a broad perspective and recognition that the complexity and function of any particular location is influenced heavily by the surrounding system.

Spatial and temporal scale are critical. Ecosystem function includes inputs, outputs, cycling of materials and energy, and the interactions of organisms. In order to monitor and manipulate these processes, scientists define ecosystem boundaries operationally. But boundaries defined for the study or management of one process are often inappropriate for the study of others; thus, ecosystem management requires a broad view. The mismatch between the scales at which humans make resource management decisions and at which ecosystems operate presents the most significant challenge to ecosystem management.

Uncertainty, surprise and limits to knowledge. Ecosystem management acknowledges that, given sufficient time and space, unlikely events are certain to occur. Adaptive management addresses this uncertainty by combining democratic principles, scientific analysis, education and institutional learning to increase our understanding of ecosystem processes and the consequences of management interventions, and to improve the quality of data upon which decisions must be made.

Humans as Ecosystem Components. Ecosystem management is as concerned with managing human activities as with managing lands and waters. There is little doubt that the resources upon which humans depend are delivered from ecosystems in finite quantity. Even more daunting is the fact that the delivery capacity of these resources is not distributed uniformly across the globe or in patterns that necessarily correlate with human demand.

Defining Sustainable Goals and Objectives. Ecosystem management recognizes that to meet resource demands sustainably we must value our ecosystems for more than economically important goods and services. Sustainable strategies for the provision of ecosystem goods and services cannot take as their starting points statements of need or want such as mandated timber supply, water demand, or arbitrarily set harvests of shrimp or fish. Rather, sustainability must be the primary objective, and levels of commodity and amenity provision must be adjusted to meet that goal.

Reconciling Spatial Scales. Implementation of Ecosystem management would be greatly simplified if management jurisdictions were spatially congruent with the behavior of ecosystem processes. Given the variation in spatial domain among processes, one perfect fit for all processes is virtually impossible; rather, ecosystem management must seek consensus among the various stakeholders within each ecosystem.

Reconciling Temporal Scales. Whereas management agencies are often forced to make decisions on a fiscal year basis, Ecosystem management must deal with timescales that transcend human lifetimes. Thus, while recognizing the need to make short-term decisions, and while acknowledging that unlikely events do happen, ecosystem management requires long-term planning and commitment.

Making the System Adaptable and Accountable. Successful ecosystem management requires institutions that are adaptable to changes in ecosystem characteristics and in our knowledge base. But to view management as experimental is not to advocate capricious implementation of untried or *avant-garde* actions. It is rather to acknowledge the limits of our understanding of even conventional management procedures to the complex array of ecosystem components necessary for sustained functioning.

Ecosystem management is not a rejection of an anthropocentric for a totally biocentric world view. Rather it is management that acknowledges the importance of human needs while at the same time confronting the reality that the capacity of our world to meet those needs in perpetuity has limits and depends on the functioning of ecosystems.

B.2 Ecosystem Services - A Chula Vista Bayfront Master Plan Primer

An ecosystem services approach begins with human dependency on nature. Ecosystem services are the direct and indirect contributions of ecosystems to human well-being. The approach considers the economic significance of biodiversity loss and ecosystem degradation in terms of negative effects on human well-being.

A tiered approach:

- **Recognizes** value, be it intrinsic, social or contemplative
- **Demonstrates** the economic value of a service in order to respond (example: the natural sewage treatment **function** of a wetland)
- **Captures** value by rewarding and supporting good conservation (e.g., payment for ecosystem services).

Economic valuations communicate the value of ecosystems and biodiversity and their largely unpriced flows of public goods and services.

Evaluating and integrating good stewardship is good economic practice.

Natural solutions, when available, are more cost-effective than technical solutions.

The conceptual framework for organizing ecosystem services places them in four categories: provisioning, ecosystem-regulating, supporting, and cultural services. These categories and examples are consistent with the broad international literature on ecosystem services (for instance, see Haines-Young and Potschin 2011).

Provisioning services are the goods or products obtained from ecosystems: food, fiber, raw material, fresh water, medicinal resources, genetic resources.

Ecosystem regulating services are the benefits obtained from an ecosystem's control of natural processes: local climate and air quality regulation, carbon sequestration and storage, moderation of extreme weather events, water purification and wastewater treatment, erosion prevention and maintenance of soil fertility, pollination, pest regulation through biological control.

Habitat or supporting services: habitats for species, maintenance of genetic diversity, primary productivity (photosynthesis), soil formation, nutrient cycling, water cycling.

Cultural services are the non-material benefits people obtain from ecosystem services: recreation and mental and physical health, tourism, aesthetic appreciation and inspiration for culture, art and design, ethical values, spiritual experience and sense of place.

Table B-1. Ecosystems, ecosystem services, and drivers of ecosystem change at the Chula Vista Bayfront Master Plan area.

Ecosystem	Ecosystem Services	Drivers of Ecosystem Change
▪ Marine	▪ Subsistence and recreational fishing, habitat for fish nursery, climate regulation, ecotourism, recreation	▪ Sediment quality and contamination, pollution from stormwater runoff, fresh water runoff from extreme storm events diluting salinity, nutrient runoff and deposition, climate change, destruction of fish nursery habitats
▪ Salt Marsh and Mudflats	▪ Nutrient cycling, carbon sequestration, habitats for species, habitats for genetic diversity, ecotourism, recreation, aesthetic appreciation, spiritual experience	▪ Nutrient runoff and deposition, industrial and urban pollution, sediment transport and quality, climate change, invasive species, conversion of wetlands
▪ Upland Transition and Dry Uplands	▪ Water regulation, climate regulation extreme events regulation, soil conservation, pollination, biological control, habitats for species, habitats for genetic diversity, recreation, cultural value, ecotourism	▪ Climate change, salt buildup, fire, population growth, invasive species
▪ Parks and Transition Zones	▪ Pollination regulating local climate, stormwater runoff, erosion prevention, nutrient cycling, habitats for species, primary productivity, water cycling, recreation, tourism, aesthetic appreciation, sense of place	▪ Over use, improper management, climate change, invasive species
▪ Built Environment	▪ Ecosystem services generally consumed rather than produced. LEED standards reduce resource consumption. Green spaces and roof-gardens contribute to air quality, energy conservation, microclimate regulation, noise reduction, water regulation, pollination, pest regulation, cultural value, recreation, tourism	▪ Waste generation and trash, water pollution, air pollution, invasive species, climate change

Appendix C: Setting

This Appendix describes the setting of the CVBMP footprint. The proposed development and use by parcel is presented first followed by a description of important natural resources and ecosystem functions and connections. Historic habitat loss and land use of San Diego Bay is detailed last.

For a detailed description of natural resources within the CVBMP footprint, see the CVBMP Final EIR (2010).

C.1 CVBMP Parcels Proposed Development and Use

Table C-1 presents the proposed uses and specifications for each of the parcels within the CVBMP footprint as shown in Map 1-2.

Table C-1. Chula Vista Bayfront Master Plan parcels and proposed development and use.

Parcel Number	Proposed Use	Proposed Development
H-1	Community Boating Center	10,000-20,000 square feet; 1–2 stories; 15–30 feet high
H-1A	Signature Park	5 acres
H-3	Resort Conference Center	1,500-2,000 hotel rooms; 415,000 square feet net conference space; 100,000 square feet restaurant; 20,000 square feet retail; 300 240 feet high
H-9	Retail/Commercial Recreation and Marina Support	25,000-50,000 square feet; 1-2 stories; 15-30 feet high
H-9	Interim Park/Landscaping	2 acres
H-12	Ferry Terminal/Restaurant	10,000-25,000 square feet; 2 stories; 30–40 feet high
H-13, H-14	Residential	1,500 units; 19 stories; 220 feet high
H-13, H-14	Ancillary Retail	15,000 square feet
H-15	Mixed-Use Office/Commercial Recreation	420,000 square feet; 90-130 feet high
H-15	Hotel	250 rooms, 90-130 feet high
H-17	Bayfront Fire Station	9,500 square feet; 2 stories; 27 feet high
H-18	Interim Surface Parking Lot	1,100 parking spaces
H-18	Mixed-Use Office/Commercial Recreation	100,000 square feet; 6–10 stories; 85–155 feet high
H-18	Collector Parking Garage	1,100-3,000 parking spaces; 6-10 stories; 85-155 feet high
H-21	Retail/Commercial Recreation	75,000-150,000 square feet; 1–2 stories; 15–30 feet high
H-23	Resort Hotel	500 rooms, 300 feet high
H-23	Cultural/Retail	200,000 square feet; 30–65 feet high
HP-1, H-8	Signature Park	17 acres
HP-3	Shoreline Promenade (abutting H-9)	1 acre
HP-3	Shoreline Promenade (abutting HP-1 and H-8)	3 acres
HP-3	Shoreline Promenade (abutting HP14, HP-15, and HP-21)	3 acres
HP-3	Shoreline Promenade (abutting H-1 and H-1A)	2 acres
HP-5	Wetlands and Buffer	9 acres
HP-6, HP-7, HP-8	Parks/Open Space	8 acres
HP-9, HP-12, HP-13, HP-14, HP-15	Park/Open Space	18 acres

Table C-1. Chula Vista Bayfront Master Plan parcels and proposed development and use.

Parcel Number	Proposed Use	Proposed Development
HP-23A	Industrial Business Park Use	1 acre
HP-28	H Street Pier (first half)	0.4 acre
HW-1, HW-2, HW-3, HW-4	Marinas, Boat Navigation Area, Commercial Harbor	50 acres, 700 slips
HW-6	Marina (see H-1)	200 slips
HW-7	Navigation Channel	60 acres
O-1	Industrial Business Park Use	18 acres
O-3A, O-3B	RV Park	175-236 RV spaces, 1-2 stories, 15-35 feet high
O-4	Industrial Business Park Use	28 acres
OP-1A, OP-1B, OP-3	South Park/Open Space	51 acres
OP-2A, OP-2B	Ecological Buffer/Telegraph Creek Channel	27 acres
S-1	RV Park and Campground	19 acres
S-2	Signature Park/Open Space	18 acres
S-2A	Open Space	3 acres
S-3	Mixed-Use Office/Commercial Recreation	60,000–120,000 square feet, 2–3 stories, 30–45 feet high
S-4	Office	120,000 square feet, 8 stories, 125 feet high
SP-1	Ecological Buffer	41 acres
SP-2	Seasonal Wetland	14 acres
SP-3	Nature Center Parking and Access Road	3 acres
SP-4, SP-5, SP-6, SP-7, S-5	Parks/Open Space	11 acres

Table C-2 presents the parcels within the CVBMP and the vegetation community/land cover type for each. Due to changes in the project design, development of parcels may have changed since the CVBMP EIR (2010) was finalized.

Table C-2. Parcels of the Chula Vista Bayfront Master Plan and the vegetation communities/land cover types for each parcel.

Parcel Number	Vegetation Community/Land Cover Type	Acres
Sweetwater District		
Road	Disturbed Diegan coastal sage scrub	0.79
	Disturbed habitat	6.46
	Disturbed riparian	0.03
	Mulefat scrub	0.07
	Southern coastal salt marsh	0.03
	Urban/developed	1.16
S-1	Disturbed Diegan coastal sage scrub	0.06
	Disturbed habitat	17.73
	Urban/developed	0.72
S-2A	Disturbed Diegan coastal sage scrub	3.09
	Disturbed habitat	1.29
	Southern coastal salt marsh	0.04
	Urban/developed	1.04
S-3	Disturbed habitat	6.15
	Urban/developed	0.01
S-4	Disturbed habitat	4.98
	Urban/developed	1.10
S-5	Urban/developed	1.32
SP-1	San Diego Bay	0.26
	Disturbed Diegan coastal sage scrub	3.33
	Disturbed habitat	34.85
	Disturbed wetland	2.00
	Eucalyptus woodland	0.36
	Southern coastal salt marsh	0.04

*Navigational Channel

Table C-2. Parcels of the Chula Vista Bayfront Master Plan and the vegetation communities/land cover types for each parcel.

Parcel Number	Vegetation Community/Land Cover Type	Acres
	Urban/developed	0.24
SP-2	Coastal brackish marsh	3.40
	Disturbed habitat	6.52
	Disturbed riparian	3.05
	Urban/developed	1.39
SP-3	Disturbed Diegan coastal sage scrub	0.11
	Disturbed habitat	2.62
SP-4	Disturbed Diegan coastal sage scrub	0.24
	Disturbed habitat	3.03
	Mulefat scrub	0.03
	Urban/developed	0.64
SP-5	Disturbed Diegan coastal sage scrub	0.01
	Disturbed habitat	0.56
	Urban/developed	0.53
SP-6	Disturbed habitat	4.18
	Urban/developed	0.05
SP-7	Disturbed habitat	0.24
	Urban/developed	0.91
Harbor District		
Road	Disturbed habitat	0.75
	Non-native grassland	2.14
	Ornamental vegetation	0.09
	Southern coastal salt marsh	0.10
	Urban/developed	29.21
H-1	Urban/developed	2.26
H-1A	San Diego Bay	0.03
	Urban/developed	5.28
H-3	Disturbed habitat	0.26
	Non-native grassland	6.11
	Urban/developed	32.83
H-8	Urban/developed	6.05
H-9	Urban/developed	8.59
H-12	San Diego Bay	0.77
	Urban/developed	0.04
H-13	Non-native grassland	7.97
H-14	Non-native grassland	4.83
	Urban/developed	1.36
H-15	Urban/developed	9.44
H-17	Non-native grassland	1.72
	Urban/developed	0.07
H-18	Disturbed habitat	8.69
	Urban/developed	0.23
H-21	Non-native grassland	3.88
	Urban/developed	6.23
H-23	Urban/developed	24.42
HP-1	Disturbed habitat	1.44
	Non-native grassland	1.67
	Urban/developed	8.33
HP-3	San Diego Bay	1.33
	Non-native grassland	0.07
	Urban/developed	7.06
HP-5	Non-native grassland	4.61
	Southern coastal salt marsh	1.07
	Urban/developed	3.20

*Navigational Channel

Table C-2. Parcels of the Chula Vista Bayfront Master Plan and the vegetation communities/land cover types for each parcel.

Parcel Number	Vegetation Community/Land Cover Type	Acres
HP-6	Urban/developed	1.26
HP-7	San Diego Bay	0.01
	Disturbed habitat	0.07
	Non-native grassland	0.10
	Ornamental vegetation	0.23
	Southern coastal salt marsh	0.22
	Urban/developed	3.28
HP-8	Disturbed habitat	0.24
	Ornamental vegetation	0.48
	Southern coastal salt marsh	0.47
	Urban/developed	1.34
HP-9	Disturbed habitat	0.06
	Ornamental vegetation	0.19
	Urban/developed	0.68
HP-11	Disturbed habitat	1.90
	Southern coastal salt marsh	0.47
	Urban/developed	0.78
HP-12A	Urban/developed	4.03
HP-12B	Urban/developed	4.35
HP-13A	Urban/developed	1.08
HP-13B	Urban/developed	1.16
HP-14	San Diego Bay	0.03
	Urban/developed	2.85
HP-15	San Diego Bay	0.38
	Urban/developed	3.16
HP-23A	Urban/developed	1.26
HP-28	San Diego Bay	0.83
HW-1	San Diego Bay	21.78
	Southern coastal salt marsh	0.06
	Urban/developed	0.10
HW-2	San Diego Bay	13.54
	Urban/developed	0.03
HW-3	San Diego Bay	3.95
	Southern coastal salt marsh	0.12
	Urban/developed	0.11
HW-4	San Diego Bay	10.42
	Urban/developed	0.02
HW-5	San Diego Bay	0.33
HW-6	San Diego Bay	8.47
	Urban/developed	0.05
HW-7	San Diego Bay	86.84*
Otay District		
Road	Disturbed habitat	3.65
	Disturbed seasonal pond	0.63
	Eucalyptus woodland	0.13
	Non-native grassland	0.04
	Urban/developed	2.37
O-1	Disturbed habitat	15.45
	Disturbed seasonal pond	2.65
	Non-native grassland	0.23
O-A3	Disturbed habitat	0.26
	Urban/developed	9.07
O-3B	Disturbed habitat	0.99
	Urban/developed	3.68

*Navigational Channel

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Table C-2. Parcels of the Chula Vista Bayfront Master Plan and the vegetation communities/land cover types for each parcel.

Parcel Number	Vegetation Community/Land Cover Type	Acres
O-4	Disturbed habitat	2.18
	Disturbed seasonal pond	2.05
	Non-native grassland	16.56
	Ornamental vegetation	0.22
	Urban/developed	6.13
OP-1A	Disturbed habitat	1.27
	Eucalyptus woodland	0.43
	Urban/developed	11.86
OP-1B	Disturbed habitat	7.07
	Eucalyptus woodland	1.40
	Urban/developed	2.40
OP-2A	San Diego Bay	0.14
	Disturbed habitat	4.13
	Disturbed seasonal pond	3.65
	Non-native grassland	4.12
	Ornamental vegetation	0.36
	Urban/developed	11.61
OP-2B	Disturbed habitat	1.90
	Non-native grassland	0.15
	Urban/developed	1.41
OP-3	Disturbed habitat	10.35
	Disturbed seasonal pond	0.14
	Eucalyptus woodland	0.26
	Non-native grassland	9.75
	Ornamental vegetation	4.80
	Urban/developed	0.85

*Navigational Channel

C.2 Important Habitat and Species Connections in the CVBMP Footprint and South San Diego Bay

Detailed habitat and species descriptions, locations, and extents are provided in the CVBMP Final EIR (2010) and other studies and reports maintained by the Port (some of which are subsequent to EIR publication).

C.2.1 What is Unique about South Bay Habitats?

South San Diego Bay provides habitat values unique to the bay and Southern California Bight. These values are described below.

Fish Nursery and Breeding and Resting Area

- Eelgrass beds provide a significant nursery for over 25 fish species that utilize San Diego Bay.
- Habitats of south San Diego Bay supports fish species, including important fishery species, during the larval and juvenile life stage, such as California halibut, white sea bass, northern anchovy, and spotted and barred sand bass.
- South San Diego Bay provides protection from predators for fish eggs and larvae in eelgrass, salt marsh, and open currents.

Foraging Area

- South San Diego Bay habitats support populations of forage fish (e.g., slough anchovy, topsmelt, and shiner perch) of the California least tern and many other birds and fishes.
- Intertidal mudflats are important foraging habitat for fish during high tide and shorebirds at low tide.
- South San Diego Bay is the only ecoregion in the Bay where green sea turtles are known to forage.

Important Species and Habitats

- Largest expanse of protected waters in southern California for migratory birds on the Pacific Flyway.
- South San Diego Bay is a Western Hemisphere Shorebird Reserve Network Site, with more than 20,000 shorebirds per year.
- Globally important[1] numbers of seabirds, such as gull-billed terns and Caspian terns, nest in south bay.
- Twelve species of fish indigenous to bays and estuaries of the Southern California Bight utilize the south bay.
- NOAA Essential Fish Habitat of Particular Concern includes estuary and eelgrass habitats in south bay.
- The south bay is the northern range for many fish species commonly encountered further south in eastern subtropical and tropical Pacific and not normally distributed in the Southern California Bight, including the California halfbeak, bonefish, California needlefish, shortfin corvine, Pacific seahorse, California butterfly ray, banded guitarfish, red goatfish, Pacific sierra, green jack, midline thread herring, and scalloped hammerhead.
- San Diego Bay serves as important habitat for a resident population of up to 60 juvenile and adult ESA-listed green sea turtles (Eguchi et al. 2010).

1. "Globally important" is a term used by the Audubon Society to categorize locations and congregations of bird species.

C.2.2 Habitats of South San Diego Bay

Table C-3. Breakdown of habitat subtypes native to south San Diego Bay.

Uplands	- Beach, beach wrack - Berms, dikes - Moist grassland - Grassland/ ephemeral wetland complex - Maritime Succulent Scrub and Boxthorn - Coastal Sage Scrub - Inland Dunes
Wetlands	- Low Salt Marsh & Marsh Plain - High Salt Marsh - Diked Pond - Salt Pond - Freshwater Marsh - Willow Clumps - Riparian Forest (Sycamore/ Willow)
Marine Tidal Connections	- Open Water - Nearshore Subtidal Unvegetated (Sandy) - Nearshore Subtidal Vegetated (Eelgrass) - Tidal Flat - Tidal Channel Network - Stream Mouth/ Brackish Water - Hardened Structures

Values for Protecting Upland Transition Communities

- Uplands transitions have unique plant assemblages.
  - Characteristic species include: California boxthorn, variegated dudleya, salt-grass, sea-blite, alkali heath, and sea lavender.
  - Special status plant species include salt marsh bird's beak, coastal dune milk vetch, Brand's phacelia, southwestern spiny rush, estuary suaeda, woolly seablite, San Diego County viguiera, San Diego barrel cactus, variegated dudleya, Nuttall's lotus, Palmer's frankenia, and red sand-verbena.
- Special status wildlife species include: San Diego black-tailed jackrabbit, western burrowing owl, and loggerhead shrike. The silvery legless lizard is a special status reptile.
- Certain birds forage in wave wrack lines, such as the large-billed savannah sparrow, Belding's savannah sparrow, and flycatchers.
- Uplands provide nesting sites for colonial seabirds, rare shorebirds, and burrowing owls.
- Coastal upland invertebrates are the primary prey for many species of wildlife and are important as pollinators, including: funnel web weavers, wolf spiders, trapdoor spiders, endemic nocturnal sand spiders, globose dune beetle, sandy beach tiger beetle, mudflat tiger beetle, and wandering skipper.
- Uplands help buffer rises in sea level and may provide for habitat migration.

Wetlands

The USACE, the CDFW, and the CCC all have jurisdiction of wetlands in the project footprint. Map C-1 details the jurisdiction of each agency.

Functions of Aquatic Subhabitats

Tidal creeks and channels	Provides: Refuge for small fish, eggs and larvae of larger fish. Example species: Gobies and topsmelt.
Sandy bottom sediment	Provides: Refuge for crustaceans (prey item) and fish. Example species: Important habitat for bottom-dwelling species (e.g., rays, sharks, flatfish). Burrows of ghost shrimp are used by arrow goby.
Emergent vegetation	Provides: Habitat and refuge for many small fish species. Example species: Some gobies and California killifish.
Submerged vegetation	Provides: Productive refuges used by most small fish species, including eelgrass. Example species: Pipefish, gobies, California killifish, Pacific staghorn sculpin, and mullet.
Nearshore shallow water	Provides: Substrate and food for larvae and juveniles of many species that use bays, lagoons, and estuaries as nurseries. Transient species from intertidal and nearshore soft-bottom habitat use the bay during the spring and summer - entering the lagoons as eggs/ larvae or as juveniles/ adults seeking habitat and food. Example species: California halibut, diamond turbot, sardines, and croakers. Seasonal species include: sunperch, anchovies, croakers, stingrays, and halibut.
Open water	Provides: Uninterrupted tidal exchange. Example species: Anchovies, sardines, topsmelt, and striped mullet.
Saline pools	Provides: Areas with increased salinity due to reduced tidal circulation. Example species: Only the most salt tolerant species, including topsmelt, and California killifish.
Brackish and fresh water	Provides: Habitat for fish tolerating or preferring low salinity. Example species: Topsmelt and striped mullet.

C.2.3 Distribution of Species in South San Diego Bay

Fish Species Utilizing San Diego Bay

Figure C-1 depicts common fish species found in south San Diego Bay and highlights the species that are characteristic only in the southern ecoregion of San Diego Bay due to habitat conditions.

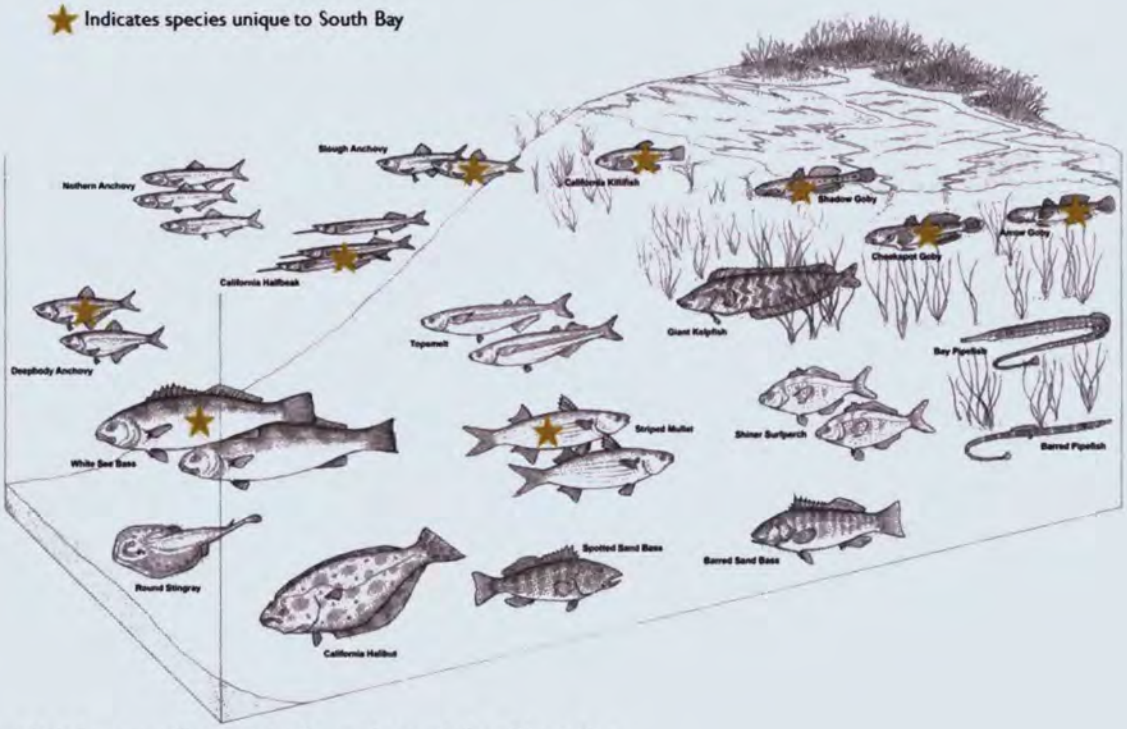

Figure C-1. Common fish species found in south San Diego Bay.

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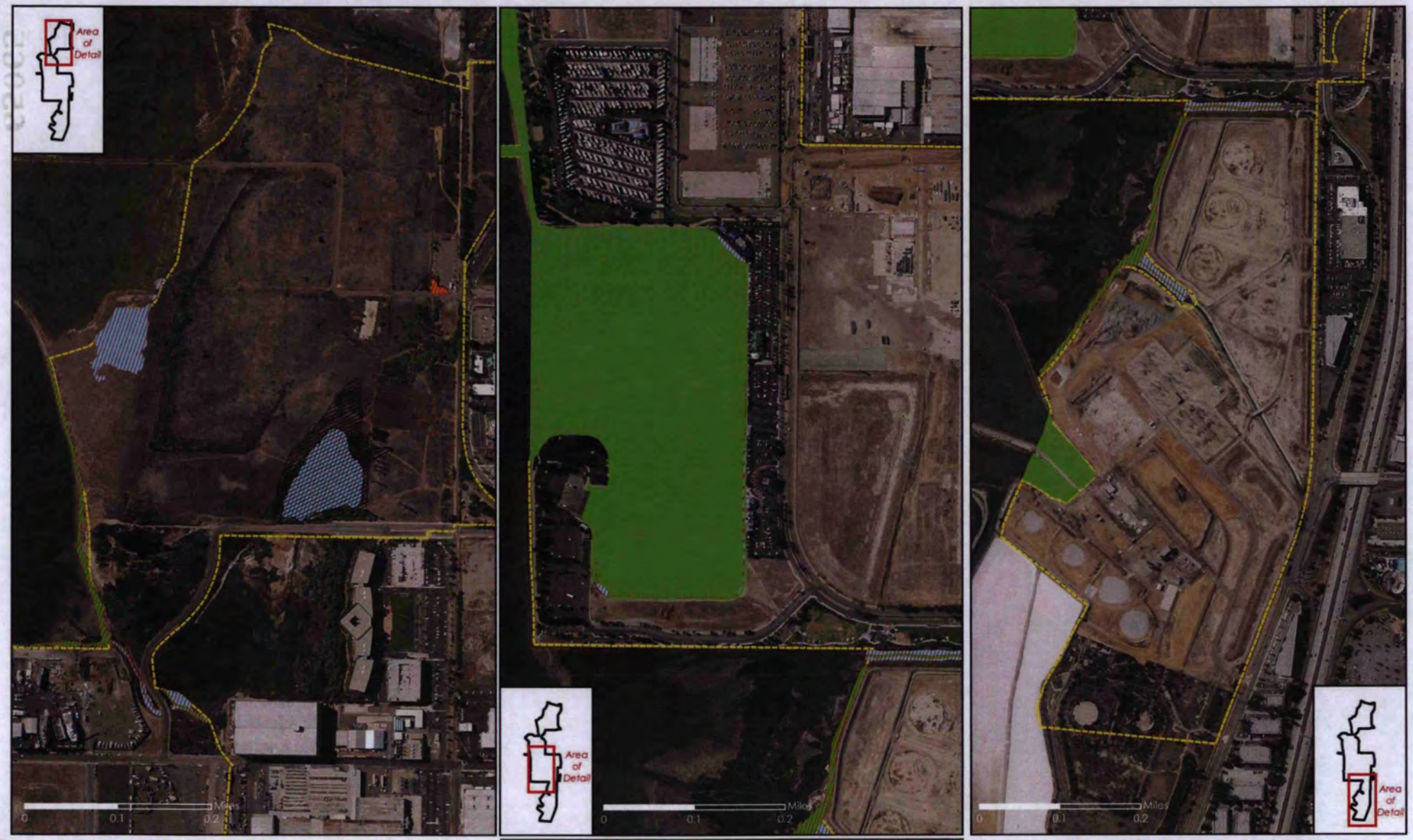

MAP C-1

Wetlands and Jurisdictions within the CVBMP Project Footprint

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Habitat Subtypes Supporting Birds

South San Diego Bay can be split into three distinct foraging habitats: upland transitional, intertidal, and subtidal. Bird species that utilize south San Diego Bay exploit different foraging habitats depending on the adaptations and specializations of each species, demonstrated in Figure C-2.

Upland habitat is frequently used for roosting and foraging sites by bird species that normally occupy intertidal and subtidal habitats when those areas are inundated. As a transitional habitat, it maintains connectivity between habitats throughout the bay.

San Diego Bay's broad, gentle slopes provides a range of water depths in intertidal habitats to accommodate a wide assemblage of bird species, including shorebirds, marsh birds, and dabbling ducks. Shorebird species are particularly well-adapted with varying bill lengths, leg lengths, and foraging strategies to exploit the changing topography within the bay. In addition, the unique vegetation found in salt marsh habitat provides cover for the federally- and state-listed light-footed clapper rail.

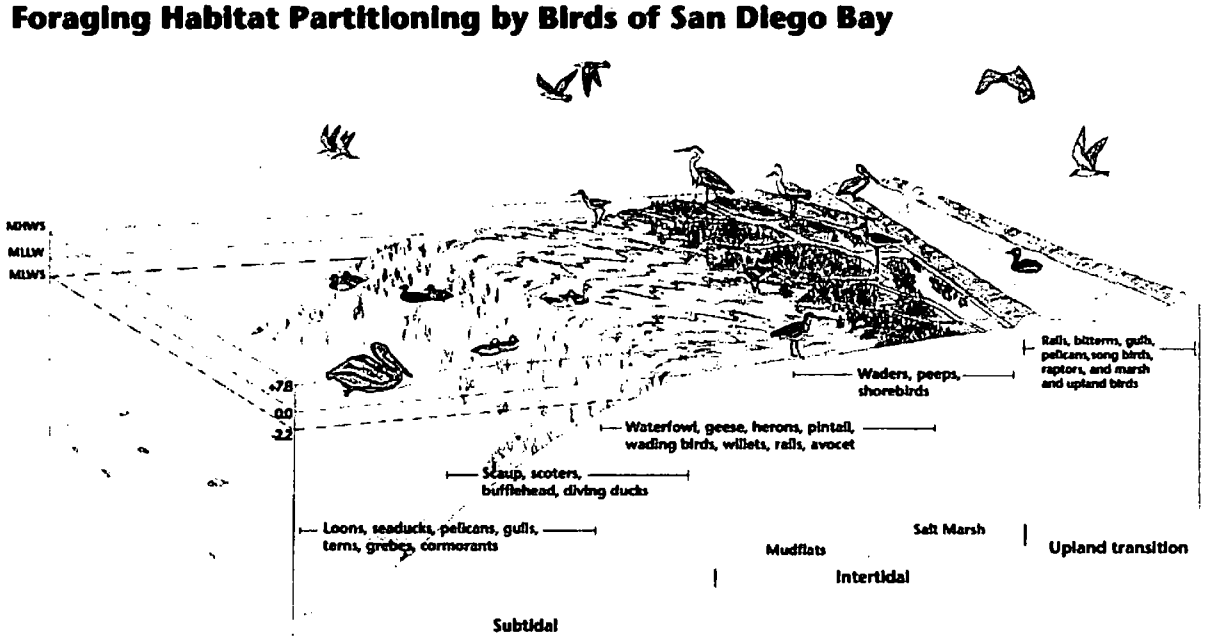

Figure C-2. Foraging habitat partitioning by birds of San Diego Bay.

Subtidal areas are utilized by diving birds such as pelicans, cormorants, and diving ducks that search for prey from the water surface or from the air. Salt marsh habitat shelters rare resident, specialist birds such as the light-footed clapper rail; produces abundant fish and wildlife; and sequesters carbon at a much higher level than other habitats (see also Section D.3: Carbon Sequestration Benefits & Potential in Wetlands).

C.2.4 Key Attributes of Ecosystem and Habitat Quality

The following are physical conditions favor species reproduction, growth, and diversity of aquatic and marine species.

Buffer and Landscape Condition

- Mosaic of habitats supports the maximum species and densities of birds.
- Connectivity for fish.
- Buffer from urban uses (watershed functions, clean fresh water and sediment sources).

Hydrologic Condition

- Slow tidal retreat, range of tidal depths to maximize foraging time for different foraging strategies.
- Hydroperiod.
- Water quality.

Physical Structure

- Warm, nutrient-rich, shallow waters, which enable the presence of larval and juvenile fish in large numbers.
- Broad, intertidal shorelines with gentle slopes.
- Environmental gradients and transitions of salinity, non-vegetated, vegetated
- Shelter from waves; areas of quiet water.
- Higher salinities provide for organisms indigenous to estuaries.
- Brackish water provide for certain species such as avian dabblers.
- Sediment size (fine, particularly) that support benthos.
- Substrate complexity and structural patch richness.
- Topographic complexity on micro scale to trap water, allow anchoring, to hold on.
- Upland refugia for birds during high tide and tidal surges.
- Microchannels in mudflats and marshes.

Biotic Structure

- Plankton.
- Vegetation - algae, eelgrass, salt marsh. Vertical biotic layers.
- Horizontal interspersion of vegetation.
- Invasion, aggressive or over-abundant species.
- Benthic invertebrate abundance.

C.3 History of Habitat Loss in San Diego Bay

Table C-4 estimates habitat losses within San Diego Bay from 1859 to 1995 by comparing a 1859 geodetic chart and 1995 aerial photo, as updated in 2007.

Table C-4. Habitat Change in San Diego Bay.

Habitat (depths in feet)[a]	1859 Acres (% of total)	2007 Acres (% of total)	2007 % Loss or Gain Since 1859
Deep Subtidal (>–20)	2212 (12%)	4394.8 (28%)	+99%
Moderately Deep Subtidal (–12 to –20)	954 (5%)	Not Available	Not Available
Shallow Subtidal (–2.2 to –12)	6400 (35%)	3767.5 (24%)	-41%
Vegetated Shallow Subtidal[b]	Unknown	3734 (24%)	Unknown
Intertidal excluding Salt Marsh (+2 to –2.2, high tide line to –3 on 1859 coverage)	6148 (33%)	984 (6%)	-84%
Artificial hard substrate[c,d] (riprap and seawall; piers, wharves)	0	Not Available	Not Available

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Table C-4. Habitat Change in San Diego Bay.

Habitat (depths in feet)[a]	1859 Acres (% of total)	2007 Acres (% of total)	2007 % Loss or Gain Since 1859
Salt Marsh	2785 (15%)	843 (5%)	-69.7%
Upland Transition	Unknown	2308 (15%)	Unknown
Riparian	Unknown	7 (<1%)	Unknown
Freshwater Marsh	Unknown	1 (<1%)	Unknown
Salt Works			
Crystallizer	Not Applicable	121 (<1%)	Not Applicable
Pickling	Not Applicable	59 (<1%)	Not Applicable
Primary	Not Applicable	462 (3%)	Not Applicable
Primary/Intertidal	Not Applicable	106 (<1%)	Not Applicable
Secondary	Not Applicable	366 (2%)	Not Applicable
Dikes	Not Applicable	62 (<1%)	Not Applicable
Total	**18,500**	**15,694**	

a. All depths based on Mean Lower Low Water.
b. Vegetated shallows is a subset of shallow subtidal, so is not included in the totals.
c. Plus 131 acres (53 ha) horizontal surface structures (piers, etc.).
d. Artificial hard substrate is a subset of subtidal and intertidal habitats, so is not included in the totals.

C.4 Cultural Land Use History of the CVBMP area

Chula Vista is located within the historical territory of the Kumeyaay peoples. At the time of Spanish contact, the Kumeyaay were nomadic and inhabited portions of present-day San Diego County, Imperial County, and Baja California, Mexico. They lived in autonomous bands that typically occupied a main village and several smaller inhabitations, moving seasonally based on food sources (Loumala 1978; City of Chula Vista 2012c).

The Kumeyaay peoples practiced a fairly typical hunting-and-gathering routine common among California Native Americans. Kumeyaay peoples living along the coast gathered clams, abalone, scallops, sea stars, octopuses, and other marine species from lagoons and tidepools, and gathered grunion during runs (Baksh n.d.). Tule reeds were used to make boats, or balsas, for offshore fishing (Hoffman and Gamble 2006). Hooks made from abalone shells and yucca fiber lines were used for fishing, as were agave or yucca fiber nets and spears made with cactus thorns (Baksh n.d.). While the Kumeyaay peoples hunted large game (e.g., deer, mountain sheep, and antelope), they relied primarily on small game (e.g., rabbits, ground squirrels, woodrats, and other small animals) and birds (e.g., pigeons, doves, larks, robins, quail, and other birds) (Baksh n.d.). Bow and arrows were used for hunting game animals, and birds and traps, clubs, throwing sticks, and yucca fiber nets were used to capture small game animals (Baksh n.d.). While hunting game provided the Kumeyaay peoples with important sources of protein and fat, the bulk of their diet came from plant foods, such as edible seeds, nuts, beans, fruits, and other plant foods (Baksh n.d.). Acorns were a staple of the Kumeyaay peoples' diet, and agave, pine nuts, chia, wild cherry, yucca buds and seeds, manzanita berries, elderberries, and mesquite beans were other plant foods consumed (Loumala 1978; Baksh n.d.; Hoffman and Gamble 2006).

In 1769, Spanish colonization of Alta California began with the arrival of Father Crespi and Father Junipero Serra (City of Chula Vista 2005). The creation of the mission system impacted the Kumeyaay culture, especially their socio-political structure (Loumala 1978). In 1795, Chula Vista became part of the Spanish land grant, Rancho del Rey ("The King's Ranch"), that served as grazing lands for large herds of cattle and horses (Chula Vista Historical Society 1991; City of Chula Vista 2012a, 2012c).

Following Mexican independence from Spain in 1821, there were fundamental changes in California. Missions were secularized or abandoned, and large land grants ("ranchos") were given to citizens. In 1831, Rancho del Rey became the Rancho de la Nacion ("National Ranch"), which encompassed the area now known as Chula Vista, National City, Bonita, Sunnyside, and the Sweetwater Valley (City of Chula Vista 2012b). Rancho de la Nacion was also used as grazing land for cattle and horses until 1845, when the land was granted to John Forster (City of Chula Vista 2012b).

At the end of the Mexican-American War in 1848, California became part of the United States' territory. In 1850, California became a state and under American law land grants such as Forster's were allowed to continue as private property. Forster eventually sold the land to a French developer, who in turn sold it to the Kimball brothers in 1868. This would be the beginning of Chula Vista, as the Kimball brothers wanted to turn the land into productive American cities and farms (City of Chula Vista 2012b, 2012c). In the 1880s the American settlement boom began in the area, and by 1889 there were ten houses under construction and the City of Chula Vista was created (City of Chula Vista 2012b).

The subtropical climate and long growing season of the San Diego region meant that certain crops performed exceptionally well. In 1888, the Sweetwater Dam was completed and brought water to Chula Vista residents and farms (City of Chula Vista 2012c). Citrus trees were found to be extremely successful, and for a while Chula Vista was the largest lemon-growing center in the world. Aside from lemons, main crops were celery, tomatoes, strawberries, lettuce, cucumbers, and marigolds. In the 1920s, Mexican and Japanese immigrants provided the majority of agricultural labor (City of Chula Vista 2012c). The Great Depression affected the area, but agriculture provided Chula Vista with a considerable income (City of Chula Vista 2012a). In 1931, lemon orchards produced approximately $1 million in revenue, and celery brought in almost $600,000 (City of Chula Vista 2012a).

Salt works is also a part of the historic land use of the Chula Vista bay region. In 1870, La Punta Salt Works was established in the southeast corner of the San Diego Bay, but the facility closed in 1901 (ORWMP 2006). The Western Salt Company was established in 1902 about a quarter mile northeast of La Punta Salt Works location (ORWMP 2006). In 1911, more land was purchased in the south end of the Bay to expand the facility and by 1916 the facility stretched across the entire end of the South Bay (ORWMP 2006). This expansion eliminated historic salt marsh and mudflat habitat with the creation of diked evaporation ponds (ORWMP 2006). A flood in 1916 damaged the facility, but it was reconstructed by 1918 (ORWMP 2006). In 1922, the facility switched ownership to the H.G. Fenton Company, and in 1999 approximately 964 acres of the salt works was incorporated into the South Bay Unit of San Diego Bay NWR (ORWMP 2006).

Wartime production also played a significant role in the history of Chula Vista. In 1916, the Hercules Powder Company built a kelp processing plant on Gunpowder Point (Living Coast Discovery Center 2013). Acetone and potash were extracted from kelp and were used to make cordite, an explosive used by the British in World War I (Living Coast Discovery Center 2013; City of Chula Vista 2005). During the war, Hercules produced 20,838,000 kilos of cordite for the British (City of Chula Vista 2012a). The large-scale production of cordite meant that Hercules had three kelp harvesters working almost continuously and 1,500 employees working day and night (City of Chula Vista 2005). Remnants of the Hercules buildings on Gunpowder Point are still present and can be seen from nature center trails (Living Coast Discovery Center 2013).

In 1941, the Rohr Aircraft Corporation relocated to Chula Vista prior to the attack on Pearl Harbor and United States' involvement in World War II. Rohr employed 9,000 workers at the height of wartime production, causing a demand for housing that led to the conversion of orchard and agriculture lands into homes (City of Chula Vista 2012a). The population of Chula Vista tripled from 1940 to 1950, growing from 5,000 residents to over 16,000 residents (City of Chula Vista 2012a). The rapid population growth and development during and after World War II, not only in Chula Vista but the greater San Diego area, greatly stressed San Diego Bay (ORWMP 2006). The Bay was seen as a disposal site for bilge water, garbage, and sewage even before World War II; but the rapid growth during the war overwhelmed the few San Diego sewage plants (ORWMP 2006). Contamination of the Bay steadily increased, and in 1955 a quarantine was placed in the central Bay area by the California Department of Public Health as the contamination in the Bay from sewage waste was considered a hazard to public health (ORWMP 2006). After the San Diego metropolitan Sewerage System became operational in 1963 and all domestic discharges and discharges from the Naval Amphibious Base were connected in 1964, sewage dumping in the Bay ceased and San Diego Bay showed rapid recovery (ORWMP 2006).

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Appendix D: Sea Level Rise, Climate Change, and Carbon Sequestration Assumptions

D.1 Sea Level Rise

D.1.1 Sea Level Rise Summary Points

The following subsections represent the current thinking on climate change and sea level rise for San Diego Bay as adopted by the San Diego Bay Sea Level Rise Adaptation Strategy (International Council for Local Environmental Initiatives [ICLEI] 2012). This strategy was funded by the San Diego Foundation, and included the following governmental groups: the City of Chula Vista, the City of Coronado, the City of Imperial Beach, the City of National City, the City of San Diego, the Port, and the San Diego County Regional Airport Authority. The U.S. Navy, Federal Emergency Management Agency, and San Diego Gas & Electric also contributed as stakeholders and technical advisors. Other governmental and non-governmental conservation groups such as the Tijuana River National Estuarine Research Reserve, were involved in developing the adaptation strategy. The key scientific points that underpinned this planning effort are adumbrated below.

Causes of Global Sea Level Rise

- Thermal expansion of the oceans
- Melting of land based ice glaciers

Historical Sea Level Rise

- Global rise has been about 1.8 centimeters every ten years since 1960 (United Nations' Intergovernmental Panel on Climate Change 2007).
- At San Diego Bay, the documented sea level rise has been 2.06 millimeters per year over the period spanning 1906 to 2006 (NOAA website).

Various Scenarios

The State of California (2010) uses of projections:

- By year 2050: between 26 and 43 centimeters
- By year 2100: between 78 to 176 centimeters

Aside from these, the Port/City will utilize as appropriate the California Coastal Commission's Sea Level Rise Policy Guidance (2015). That document cites sea level rise scenarios presented in Table D-1.

Table D-1. National Research Council (NRC 2012) Sea Level Rise Projections.

	Low end of range	Mid-range	High end of range
2030	2 in.	6 in.	12 in.
2050	5 in.	11 in.	24 in.
2100	17 in. (1.4 ft)	37 in. (3.1 ft)	66 in. (5.5 ft)

San Diego Bay Sea Level Rise Planning Scenarios

Current elevations within the Chula Vista Bayfront Master Plan project footprint are presented in Map D-1, Map D-2, and Map D-3.

ICLEI (2012) present four scenarios for sea level rise in San Diego Bay. These were developed by Rick Gersberg at San Diego State University.

- 2050 Daily Conditions - Mean high tide in 2050 with 0.5 meters of sea level rise
- 2050 Extreme Event - 100 year extreme high water event in 2050, with 0.5 meters of sea level rise, including such factors as El Niño, storm surge, and unusually high tides
- 2100 Daily Conditions - Mean high tide in 2100 with 1.5 meters of sea level rise
- 2100 Extreme Event - 100-year extreme high water event in 2100, with 1.5 meters of sea level rise, including such factors as El Niño, storm surge, and unusually high tides

These are all so-called 'bathtub models' which suffer for not accounting for the following factors:

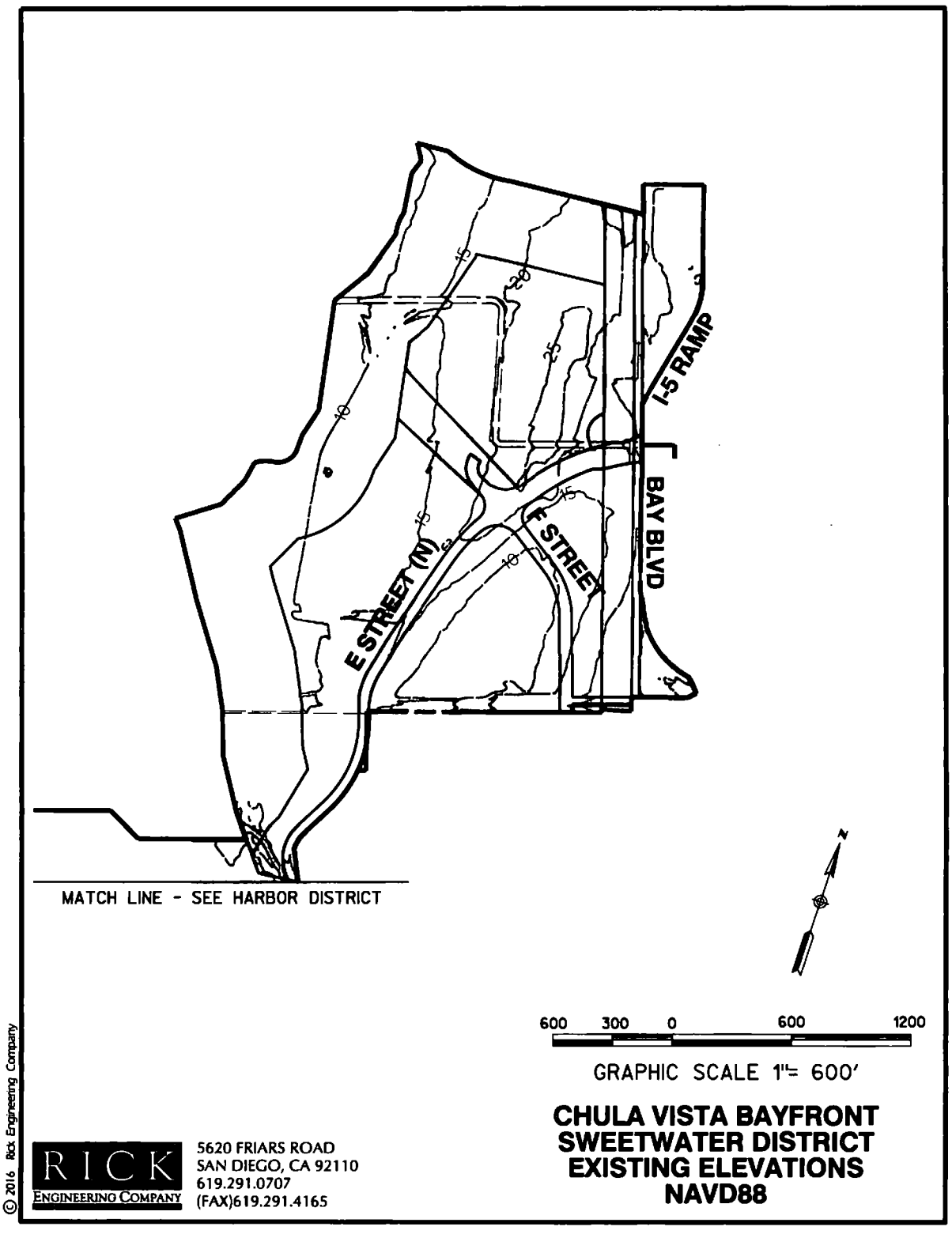
- Undetected topographic features;
- Erosion during storm events;
- Existing shoreline protection infrastructure such as sea walls or revetments;
- Future changes to land use and land form.

Placeholders for maps of sea level rise within San Diego Bay are provided below. They are currently being created with the most up to date information and reviewed by the Port. Once approved, they should be included here. The Port/City will utilize as appropriate the California Coastal Commission's Sea Level Rise Policy Guidance (2015).

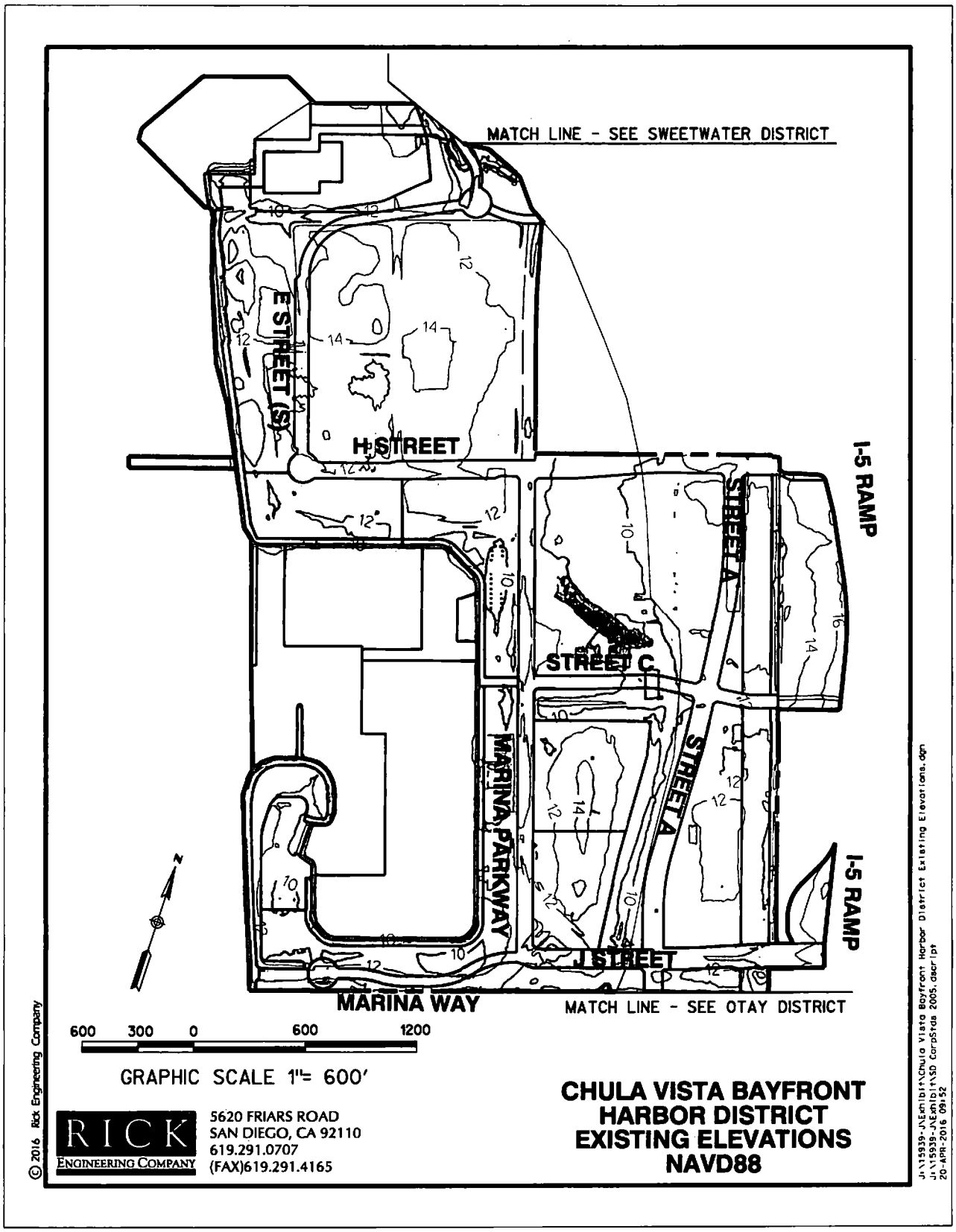
Sea Level Rise Impacts

The following describes the various impacts that can result from sea level rise.

- **Flooding** - normally dry land being covered by water for a limited period of time due to storm events.
- **Inundation** - land that was once dry becomes permanently wet.
- **Erosion** - wearing away of the earth's surface - episodic and chronic.
- **Saltwater Intrusion** - the physical migration of saltwater into freshwater aquifers. The region's potable water supply is considered less vulnerable to salt water intrusion than to rising water tables.
- **Water Table Rise** - the top of the freshwater aquifer rises. A rising water table would pose many risks to infrastructure, including stormwater facilities, sewer mains, potable water distribution, electricity and natural gas distribution, and transportation facilities.

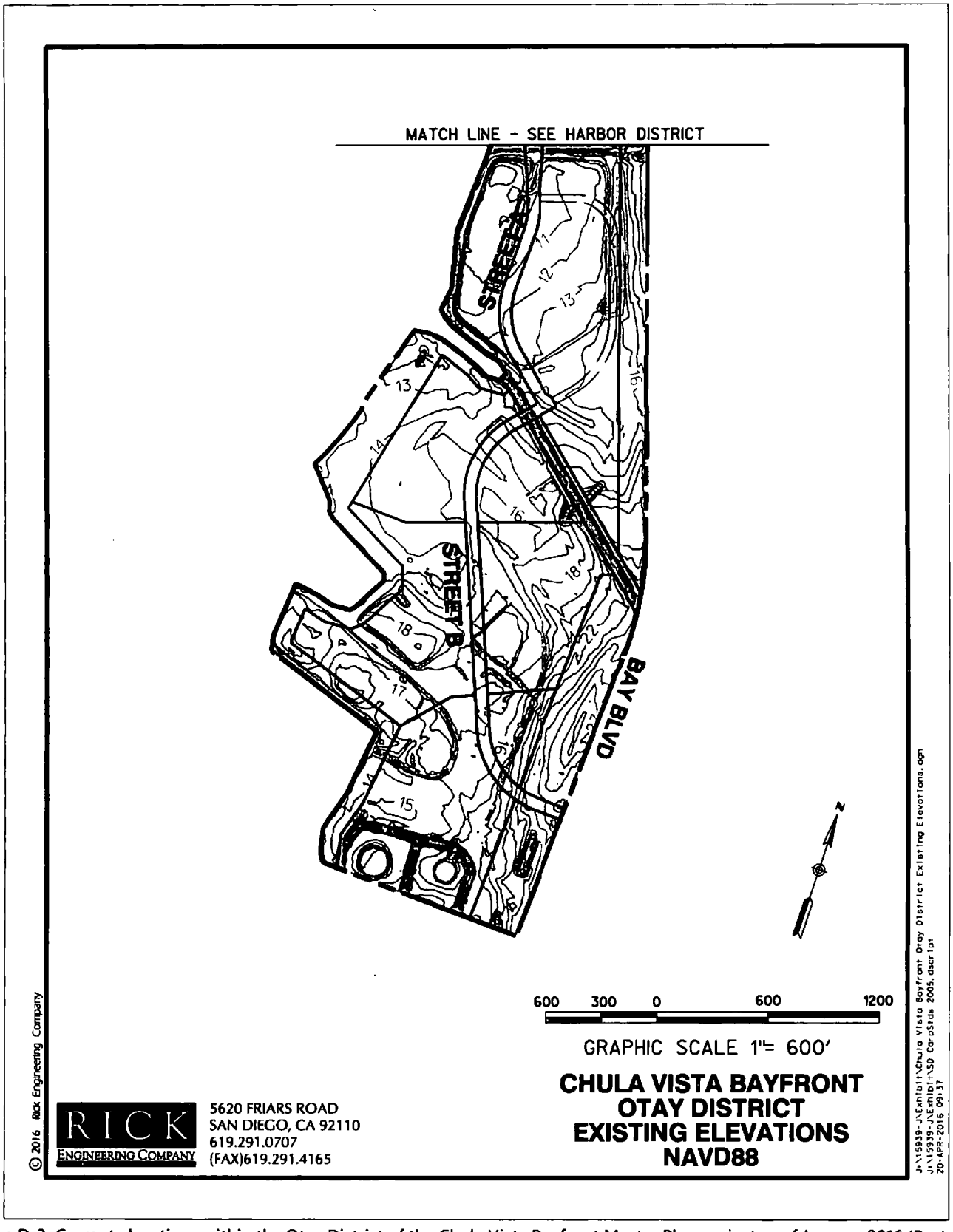


Map D-1. Current elevations within the Sweetwater District of the Chula Vista Bayfront Master Plan project as of November 2008 (Port of San Diego 2008, 2013, 2016).



Map D-2. Current elevations within the Harbor District of the Chula Vista Bayfront Master Plan project, composite from November 2008 and June 2013 evaluations (Port of San Diego 2008, 2013, 2016).

65065 192



Map D-3. Current elevations within the Otay District of the Chula Vista Bayfront Master Plan project as of January 2016 (Port of San Diego 2008, 2013, 2016).

The primary impacts identified by ICLEI (2012) sea level rise strategy for the bay include inundation and erosion. Intertidal ecosystems are particularly susceptible to inundation, these include marshes, tidal flats, tidal creeks, and the rocky intertidal zone. Examples of these include the Sweetwater Marsh, J Street Marsh, and tidal flats. These areas support multiple threatened and endangered species and are key locations on migratory bird routes. These areas present a high vulnerability inundation because of their extensive exposure, high sensitivity, and low capacity to adjust or adapt to an elevated tidal regime.

Sea level rise, coupled with potentially larger storm events could result in greater erosion liabilities, leading to degraded water quality in some erosion-receiving areas causing more sediment and higher turbidity. The impact of erosion depends on the amount of along-shore transport caused by water flow, the frequency and intensity of storms, the amount of re-supply available, and the management practices and planning decisions made within the watershed. Upland ecosystems of undeveloped dry lands around the Bay which are important habitat for ground-nesting birds, present a high vulnerability to erosion. Subtidal ecosystems, such as eelgrass beds, provide shelter from waves and from marine predators and are less vulnerable to erosion.

D.2 Climate Change and Extreme Heat Predictions

This brief report reviews current literature pertinent to the projected extremes in temperature and precipitation over the next 70 years in the interior coastal zone of San Diego County.

Temperature

The earliest impact of global climate change will be a pronounced rise in extreme summertime temperature along with a more modest rise in wintertime temperature. Projected warming across the county ranges from 1.5 degrees Fahrenheit (°F) to 4.5 °F. The interior warming rises considerably more than coastal. Rise in temperature will be most notable during extreme heat waves, which will expand temporally from June-September to April-December. Heat waves are projected to increase in frequency, duration and magnitude. Under a consensus model, heat wave events will increase three-fold. Under the A2 emissions scenario and GFDL model (no significant control of GHG emissions accompanied by moderate warming), the peak temperature in the coastal zone of San Diego County, which in includes San Diego Bay, will increase 2-4 °F by 2050 (Messner et al. 2011). The same model also predicts that the coastal zone should expect 200-300 days per year over 65 °F (Messner et al. 2011).

The frequency of extreme temperatures currently estimated to occur every 100 years (100 year heat events) is projected to increase by at least 10-fold in many regions of California under moderate emissions scenarios. Under higher emissions scenarios, those extreme temperatures are projected to occur close to annually in most regions. Observations confirm that changes in extremes (from data over the past 20 years) are not always proportional to changes in the mean. Adaptation to extreme events can be more challenging than adaptation to gradual changes in the mean. With both day and night time trends in warmest days and nights increasing, it would be expected that fire weather frequency would also increase. Highest annual three-day average maximum temperature (100 year return level) for San Diego County increases from 105 °F for the period 1950-2000 to 110 °F to 117 °F for the period 2051-2100. The highest three day average minimum (night time) temperature, 100 year return level, from 1950-1999 was 70–72 °F; the projected highest three day average minimum tempera-

ture, 100 year return, for 2051-2100 is 77 °F to 87 °F. Coherent changes in temperature suggest significant differences in the severity of hot spells (both in length and intensity) and decreases in frost days and, more generally, cold spells. A significant difference in the magnitude of changes in temperature extremes is found when comparing the two emissions scenarios, A2 and B1, suggesting mitigation in GHG emissions would limit the severity of these changes (Mastreandrea et al. 2011).

The Center for Conservation Biology (CCB) at University of California, Riverside found through modeling that suitable environmental conditions for coastal sage scrub were predicted to decrease between 10% and 100%, with the greatest reductions at higher temperatures and extremes in drought. Decline of chaparral was less pronounced since higher percentages of suitable habitat remain at the elevated temperatures with current or reduced precipitation. Their modeling also predicted that 34% more CCS acreage will burn in 2041-2050 than in 1996-2005. Climate envelopes for species will shift 10-50 times faster than occurred at the end of the last ice age. The CCB also modeled predicted habitat for the Quino checkerspot butterfly and the California gnatcatcher in association with plant species. Potential habitats for each were reduced by 69–100% relative to the climate change model only (Preston et al. 2008)

Climate Wizard data indicate that both mean maximum temperature in August ($p < 0.0001$) and mean minimum temperature in January ($p = 0.00628$) have already begun to increase over the last 100 years by 0.015 degrees Celsius (°C)/year and 0.014°C/year respectively.

Precipitation

Precipitation projections are less certain, but the region will maintain an overall Mediterranean climate through the 21st century. The future will most likely continue to have a high degree of year-to-year variability, and the variability may deepen. The region will remain highly vulnerable to severe droughts. There is projected to be an increased likelihood of an extended perfect drought scenario, which would affect southern California, the Sacramento River basin, and the Colorado River basin at the same time for as much as 30–50 years vs. <5 years from the previous 100 year record. Mean soil moisture conditions are expected to drop below the 1989 drought threshold with an increasing frequency and greater severity (Messner et al. 2011).

Overall, however, trends in precipitation intensity are inconclusive for San Diego County, though the consensus modeling (Climate Wizard) projects an overall slight drop in annual precipitation. Consensus modeling does indicate, however, an increase of up to 50% in precipitation for the June-August season, especially in the second half of the century.

D.3 Carbon Sequestration Benefits & Potential in Wetlands

The following sections present brief summary points related to carbon sequestration in wetlands, and the potential for creating carbon off-sets.

Carbon Sequestration Benefits in Wetlands

- sequester GHGs from the atmosphere;
- store carbon reservoirs in the soil;
- provide adaptation to sea-level rise;
- increase flood protection;
- provide wildlife habitat;
- improve water quality.

Carbon Sequestration Potential

Wetlands act both as a reservoir for carbon, ultimately sequestered from the atmosphere, and producers of methane (CH_4) and nitrous oxide (N_2O) through biogeochemical processes. Table D-2 presents examples of potential relative carbon storage potentials for various wetland habitat categories.

Table D-2. Summary of potential GHG reductions in coastal wetlands.

Wetland type	Carbon sequestration	Methane production	Net GHG sink
Mudflat (saline)	Low	Very Low	Low to Medium
Salt Marsh	High	Very Low	High
Freshwater	Very High	High to Very High	Neutral or Variable
Estuarine Forest	High	Low	High
Mangrove	High	Low to High	Low to High*
Seagrass	High	Low	High

Source: Philips Williams & Associates, Ltd. and Science Applications International Corporation (2009).
**dependent on salinity.*

Table D-3 illustrates the potential for carbon stores various habitats.

Table D-3. Carbon stores in coastal wetlands and seagrass beds.

Ecosystem Type	Standing Soil Carbon (gCm2)		Long Term Rate of C accumulation in sediment (gCm-2y-1)
	Plants	Soil	
Tropical forests	12,045	12,273	2.3-2.5
Temperate forests	5,673	9,615	1.4-12.0
Boreal forests	6,423	34,380	0.8-2.2
Wetlands	4,286	72,857	20
Tidal salt marshes	-	-	210
Mangroves	7,990	-	139
Seagrass meadows	184	7,000	83
Kelp forests	120-720	n.a.	n.a.

Source: E. Pidgeon. 2009. "Carbon Sequestration by Coastal Marine Habitats: Important Missing Sinks." In D. Laffoley and Grimsditch (eds.), The Management of Natural Coastal Carbon Sinks. Gland, Switzerland: IUCN.
n.a. = not available

Potential Offset Projects

- Wetland Creation,
- Wetland Restoration, and
- Wetland Enhancement (Sediment placement to attain a vegetated surface elevation; Sediment placement to maintain a vegetated marsh; Sediment placement to convert a shallow tidal basin to a vegetated tidal marsh.)

Outstanding Issues

There are still many uncertainties related to developing an offsets methodology for this project type including:

1. An absence of good datasets on wetlands practices and trends. See Table D-4.

Table D-4. Publications in peer-reviewed journals.

Topic	No. Papers (2008)
Carbon sequestration	5,731
C sequestration / forests	2,246
C sequestration / wetlands	176
C sequestration / tidal wetlands	6

2. Lack of established accounting guidance and emission factors/sequestration rates for relevant tidal wetlands classifications.
3. Wetlands are somewhat unique for offsets projects because federal and state agencies have a large role in their regulation and management, and actually own much of the land that could be used for tidal wetlands projects. It must therefore be determined how to establish a methodology that determines what is beyond "business-as-usual" activities of the public sector, in addition to that of the private sector.
4. Permanence - will the project last and how long?
5. Leakage - will activities to sequester carbon on the project site indirectly lead to increases in carbon release off-site?

Key Questions for Carbon Sequestration Projects

- Does the project lend itself to a performance standard-based approach?
- Can the project demonstrate that carbon sequestered will be additional; i.e., would not have occurred without carbon financing?
- Can GHG emissions budgets be quantified for existing land uses and for the project?
- Is the reduction potential significant?
- Can the project boundary and GHG fluxes across that boundary be clearly defined?
- Can ownership be unambiguously determined?
- Can leakage be assessed; i.e., will secondary carbon losses occur external to the project boundary because of the project?
- Can risk to carbon storage permanence be assessed and mitigated.

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Appendix E: Potential Concepts for "Beyond Compliance" Conservation

The primary purposes of this Appendix are to:

1. Promote "beyond regulatory compliance" improvement in habitat quantity or quality, benefiting resiliency of natural estuarine resources consistent with the Port's business growth mission, when regulation is not the primary driver.
2. Promote innovation and leveraging of effective public-private financial strategies for common purposes, and to implement practical work that furthers the NRMP's indicators of success.

Pilot approaches may be employed within the CVBMP planning area that have the potential to benefit the larger San Diego Bay region. The pilot approaches would follow this NRMP's guiding principles (Section 1.4: The NRMP's Core Guiding Principles) for: CCDP compliance; Ecosystem-Based Management and ecosystem services; Trans-boundary integrated planning; Nature-based benefits accessible to all; Best science and accountability; Non-regulatory conservation planning; and Collaboration.

The underlying rationale behind the recommendations in this section are:

Even if all the best practices to reduce threats to wildlife in the CVBMP controlling documents are fully implemented, this benefit could be overwhelmed by sea level rise and other future changes beyond local control. Reducing risk to wildlife should be balanced with investing in resilience for vulnerable natural resources by improving habitat quality and quantity.

All innovations and disciplines are needed to sustain the CVBMP area's core values (Section 1.3: The Bayfront Environ's Core Natural Resource Values), and pooling of resources towards a common vision. The legal framework for project-by-project requirements and project-linked financing tools maybe insufficient tools to keep up with the need to implement conservation work in an era of budget constraint.

An approach to pursue conservation using pilot projects recognizes that there are knowledge gaps that cannot be filled in advance of needed work. Also, the CVBMP footprint is small and not always the most appropriate scale to problem-solve or to address a desired change cost-effectively and sustainably. The measures of success identified in this NRMP (see Section 7.0: Moving Forward: Implementation of the NRMP, Monitoring for Adaptive Management, Addressing SLR, and Future Funding) require many scales of action (e.g. site-specific to regional).

In the sections below are: five project concepts for potential grant or other funding (Sections E.1–E.5), four potential planning process improvements (Sections E.6–E.9), and a summary of research opportunities (Section E.10). Criteria that could be used to evaluate successful conservation are presented in the last section (Section E.11) of this Appendix. The background and purpose of each is presented, followed

by the desired outcomes or objectives. Some project phasing or other considerations are presented in some cases. These project concepts are illustrative rather than exhaustive in scope. The examples are intended to lead to the practical implementation of work for the future of the CVBMP area and vicinity, potentially through Requests for Proposal, grant opportunities, other funding sources, or combinations.

It is recommended that the work proposed in the following sections be undertaken programmatically and potentially under an umbrella agreement with the resource and regulatory agencies (see the pilot project described below in Section E.9), because habitat goals and sea level rise adaptation would benefit from a holistic approach to planning and compliance, and because otherwise the work would be burdened by the time frame required by regulatory compliance processes.

Whether funding is through mitigation opportunity, through opportunities for beneficial re-use of dredged sediment, grant programs, or other sources, a certain sequence of work should take place, both to improve decision-making and to comply with laws such as the California Coastal Act and California Environmental Quality Act (CEQA). This recommendation is also true regardless of whether the work takes place as individual projects, in phases over time. The six-step outline below would be typical for a grant-funded project.

1. Feasibility Study
   - Purpose: Identify fatal flaws and develop range of conceptual alternatives.
   - Objectives:
     - Define existing conditions.
     - Establish opportunities and constraints.
     - Formulate alternatives.
     - Analyze alternatives.
     - Evaluate alternatives.
   - Time frame: Typically six months to two years.
   - Funding: Usually government or non-governmental organizations (NGO).
2. Preliminary Design
   - Purpose: Develop preliminary designs for the alternatives suitable to start environmental review.
   - Objectives:
     - Refine major project components (e.g. habitat architecture, earthwork, structures).
     - Define project component scale and scope (e.g. earthwork volume, area of disturbance).
     - Develop construction methods and maintenance needs (e.g. equipment type and number).
     - Prepare construction cost estimates.
     - Conduct technical studies necessary to support environmental review.
   - Time frame: Typically one to two years.
   - Funding: Usually government or NGOs but can be private (e.g. Poseidon).
3. Environmental Review
   - Purpose: Obtain CEQA compliance, identify environmental impacts, select alternatives and mitigation, and consider proposed project.
   - Potential Requirements for an EIR:

- Issue Notice of Intent (NOI)/Notice of Preparation (NOP).
- Conduct scoping.
- Prepare administrative draft EIR or other document as applicable.
- Prepare draft EIR or other document as applicable.
- Release draft EIR for public comment period.
- Prepare responses to public comments.
- Prepare final EIR or other document as applicable.
- Select proposed project or an alternative.
- Obtain Notice of Decision (NOD) or equivalent depending on applicable CEQA document.

- Time frame: Typically one to one and one-half years.
- Funding: Usually government or NGOs but can be private (e.g. Poseidon).

4. Final Design and Permitting
   - Purpose: Prepare construction documents and obtain permits/approvals for proposed project.
   - Objectives:
     - Prepare construction plans for key milestones (e.g. 30%, 60%, 100%).
     - Prepare construction specification for key milestones (e.g. 30%, 60%, 100%).
     - Prepare construction cost estimates for key milestones (e.g. 30%, 60%, 100%).
     - Prepare and submit permit applications (e.g. CDP).
     - Respond to questions/comments on permit applications.
     - Obtain final permits/approvals.
   - Time frame: Typically six months to two years.
   - Funding: Usually government, but can be private .
5. Construction
   - Purpose: Hire construction contractor and construct project.
   - Objectives:
     - Develop contractor bidder list.
     - Prepare construction bid documents.
     - Release construction contractor bid solicitation.
     - Review construction contractor bids.
     - Select construction contractor.
     - Construct project.
     - Implement the restoration plan with as much community participation as possible.
   - Time frame: Typically one to two years.
   - Funding: Usually government, but can be private .
6. Monitoring
   - Purpose: Determine project success and lessons learned.
   - Objectives:
     - Develop monitoring plan. Establish a benchmark reference condition or site to make more site-specific success criteria for NRMP indicators and conservation planning species.

- Perform fieldwork in accordance with monitoring plan.
- Analyze field (e.g. species richness) and laboratory (e.g. grain size) data, as relevant.
- Prepare monitoring reports (e.g. quarterly, annual, final).
- Prepare compliance reports, as needed (e.g. mitigation).

- Time frame: Typically four years (mitigation) to ongoing (restoration).
- Funding: Usually government or NGOs, but can be private (e.g. Poseidon).

7. Tell the story about why the work was done and show how the provision of ecosystem services improves for people, fish, and wildlife.

E.1 Concepts for J Street Marsh & Telegraph Creek, Estuary-Watershed Connection

Background and Purpose

The mouths of streams that empty into San Diego Bay in their native condition form the primary ecological link between fresh water and the marine system, and between aquatic and upland terrestrial systems. Thus, the use of native vegetation to stabilize banks and shorelines at the stream mouth is generally beneficial. In their natural state, these systems filter or treat non-point source pollutants, and provide wildlife habitat. Leaf litter and other stream detritus form the energy base of a food web, and provide habitat and food for a variety of fish and wildlife.

This NRMP seeks to improve natural functions at the mouths of the J Street Channel and Telegraph Creek, their portions within the CVBMP footprint and beyond. The brackish marsh, salt-tolerant uplands, freshwater marsh, and willow groves could be re-established as compatible and permissible with designated functions for stormwater conveyance (see Section 5.3 of the Settlement Agreement and Section 3.0: Minimizing Harm to Neighboring Wetlands and Marine Waters).

The District will exercise diligent and good faith efforts to enter into the following cooperative agreement with the USFWS or other appropriate agency or organization (Settlement Agreement 4.4.1; CCDP 14.1): An agreement for long-term protection and management of the J Street Marsh and addressing additional protective measures such as educational signage, long-term maintenance, and monitoring and enforcement by District personnel and enforcement of resource regulations by the District and other Resource Agencies, and placement of enforcement signage. Subject to the cooperation of the applicable Resource Agency, such cooperative agreement will be executed prior to the commencement of development within the Otay District (Settlement Agreement 4.4.1.2; CCDP 14.1(b)).

Desired Outcomes and Objectives

The broad objective of this project is to restore the natural functions at the mouths of Telegraph Creek and at J Street Marsh. These functions include: habitat for fish and wildlife including an abundant macro-invertebrate prey base; water and sediment quality management; aesthetic values and recreation. Specific habitat objectives include nesting, migratory rest, fish nursery support, and hiding cover for native fauna. Vegetation may include freshwater and brackish marsh suitable for a stormwater conveyance context (such as low-stature bendable species); shrubby willow riparian; saline-tolerant upland transition, and salt marsh.

The objective of improving watershed connections should address species typically found at the mouths of these streams such as striped mullet, dabbling ducks, and others dependent on brackish water and intermittent flood. The striped mullet is currently common in the lower Otay River and Sweetwater Channel.

The project should help accommodate impacts from sea level rise in the area of J Street Marsh, and improve the capacity of the area to handle it (see also Project E.3 below).

Studies, Phases and Alternatives

The NRMP recommends that the existing wetlands should be enhanced through the provision of mitigation opportunities for the loss of wetlands elsewhere and potentially creating a bank from the mitigation for future impacts. However, the work could also take place through grants. Removal of the rock revetment wall between these wetlands and the J Street Marsh would provide a better wetland/upland transition, for example. The NRMP promotes the elimination of the bridge over J Street Channel and the road it leads to, so that the wetlands there can be expanded and connected with the shoreline and the J Street Channel to enhance habitat value and to provide mitigation opportunity. In Phase IV of the CVBMP implementation, the road crossing associated with the creek and circulation are to be re-planned (this may require an amendment to the CCDP). The area would be replanted with native vegetation suitable for the riparian-estuarine interface.

A key consideration in the first phase of this project is the stormwater conveyance and flood safety function provided at and near the outlet of these streams. Techniques that provide necessary safety and compliance while able to accommodate additional ecological and water quality benefits need to be identified and assessed for feasibility. Biotechnical methods may be considered. A hydrologic and hydraulic study to maximize environmental benefit while providing stormwater conveyance and flood safety may be needed. A matrix of benefits-versus-impacts should be constructed. Each alternative should provide equal safety against flooding, but may vary based on overall project costs, constructability, and environmental benefits.

Baseline wetland studies would be needed to prepare for any mitigation credit opportunities. The local (MSCP) planning context should be considered for Endangered Species Act compliance and consultation under Section 7.

Design for this work should consider natural soil and plant processes to attenuate pollutants commonly found in polluted runoff from upstream urban areas such as sediment (turbidity), nutrients, oil and grease, and metals. (Refer to MM 6C - Vegetated Treatment Systems for more information on relevant management practices. See the State Water Resources Control Board (SWRCB) flood control channel measures/website.[1])

1. http://www.waterboards.ca.gov/water_issues/programs/nps/encyclopedia/3_1b_plandes_flodcntl.shtml

E.2 Concepts to Minimize Loss due to Sea Level Rise In the CVBMP Buffer Areas by Terracing to Facilitate Habitat Migration

Background and Purpose

Global sea level rise is expected to be an accelerating process resulting in high tides and low tides increasing at faster rates than mean sea level. A time-sensitive opportunity exists within the CVBMP footprint to potentially plan a comprehensive approach for facilitating managed retreat or habitat migration of the marine to upland transition habitats. As sea level rise progresses, the habitats of concern that will be affected include eelgrass meadows, mud flats, salt marsh (lower and upper) transition zones and upland. The following is from NRMP controlling documents of the CVBMP.

Buffers within the PMP area have been designed to accommodate potential areas of future sea level rise inundation and are identified on Exhibit 2. The Chula Vista Bayfront plan also provides for an adequate amount of habitat migration within the identified buffer areas based on a projected sea level rise (CCDP 3.1).

All buffers shall be established and maintained by the Port/City. Within the western 200-foot width of Parcel SP-1, a portion of the buffer areas would be re-contoured and restored to provide habitat consistent with the native vegetation communities in the adjacent open space preserve areas and to provide mitigation opportunities for project impacts. Appendix 4.8-8 provides more specific detail of the mitigation opportunities available within the buffer area included within the Proposed Project. Table 4.8-5 provides a breakdown of the available maximum mitigation acreage that is available within the buffer. Figure 4.8-23 depicts the conceptual mitigation opportunities within the Sweetwater District. Figures 4.8-24 and 4.8-25 display the cross section of the buffer zones in the Sweetwater District indicated on the conceptual illustration. Figure 4.8-26 depicts the conceptual mitigation opportunities within the Otay District. The proposed restoration includes creating and restoring coastal salt marsh and creating riparian scrub vegetation communities. In addition, the coastal brackish marsh, disturbed riparian habitat, and wetland would be enhanced. (EIR and MMRP (page 37))

Studies, Phasing, and Alternatives

For the Buffer Areas of the CVBMP footprint (No-Touch, Limited Use, and Transitional Use Buffer Areas), two phases are considered together to minimize the net loss of habitat due to sea level rise.

The first phase considers incorporation of a strategy that prepares for habitat migration above the existing salt marsh within the Buffer Areas. This specific strategy would incorporate the grading of terraces at regular vertical intervals and of varying shapes to allow for some complexity in the horizontal distribution of terrace elevations. A specific design would provide the specifications of vertical interval and total areas for each terrace. Vertical interval would be associated with the projected sea level rise goals so as to provide for multiple terraces distributed through the Buffer Areas and designed in such a way that the horizontal topography allows for shaping to promote complexity and maximization of vertical edges. The project design may identify four mean sea level rise conditions consistent with the state (Coastal and Ocean Resources Working Group for the Climate Action Team [CO-CAT]) guidance: (i) Existing, (ii) 2030, (iii) 2050, and (iv) 2100. The design would determine the desired number of terraces based on these results and the target habitats

and species to support (see Table E-1). It is recommended that the project design shape the terraces to comply with the total acres required using a free form approach and allowing for habitat complexity (see Figure E-1). The project engineer should work with the project biologist to prepare the design to achieve a biologically driven habitat design instead of an engineering driven design.

Costs for the design, financing, and implementation phases may be part of a Request for Proposal. A financial strategy would be part of the Request for Proposal. A combination of mitigation opportunity and grant funding is anticipated, with Port investment in baseline studies and administrative oversight to set up the mitigation framework.

The second phase incorporates a strategy that would unfold over time as habitat migration is under way. As the salt marsh is transformed to lower elevation habitats, these areas may be restored appropriately to convert them into high-quality mudflats, and, in the lowest zones with permanent inundation, eelgrass meadows.

Figure E-1. Schematic illustration of desired design outcome.

E.3 Concepts to Improve J Street Marsh Intertidal and Upland Connections, and Ecosystem Services

Background and Purpose

The potential to improve the intertidal connection between J Street Marsh, the salt ponds, and the intake/discharge channels is a key opportunity to secure benefit to essential habitats and species of south San Diego Bay, as well as sea level rise resilience and hazard reduction, among other ecosystem services.

Desired Outcomes

Improve the intertidal connection of J Street Marsh, Telegraph Creek, and the salt ponds by building up the subtidal-intertidal elevation and lessening the slope gradient bayward of the J Street Marsh.

Besides improving habitat, potentially provide a habitat-based, "soft" infrastructure buffer for sea level rise by expanding the intertidal area in a continuum bayward of the existing shore. The created habitats could then migrate up to the existing shoreline under future sea level rise versus retreat inland from the existing shoreline.

Provide ecosystem services for people, fish, and wildlife to the maximum extent feasible by considering all means to sustainably deliver such services, including biodiversity, filtration, carbon sequestration, recreation, and tourism. All of these are impaired due to the habitat fragmentation that has occurred over time. Seek triple bottom line outcomes: ecological, economic, and social (community well-being).

Consistent with the NRMP, this work should provide for conservation planning species. Essential habitat conditions to support conservation planning species should improve or expand, especially surface elevations relative to tides, to estimate how many hours a day and times a year tidal flooding will occur. Depending on the selected species, other core ecological variables to design for are vegetation composition, abundance, height and density; soil salinity; and tidal inundation.

Study Considerations and Alternatives

The project, if implemented, would follow a path similar to that outlined in the introduction to this Appendix (pages E-2 to E-4). Any design should identify the conservation planning species intended to use the area, and a reference site where these species are currently active. The design would include defined sediment size, depth of sediment, tidal elevation, tidal inundation times, tidal flushing, level of channel sinuosity, secondary channel networks in the intertidal zone, habitat complexity for trapping sediment and creating pools, and ratio of organic to inorganic components of the sediment. The sediment depth should be sufficient to provide for infaunal organisms to retreat into deeper sediments or burrows so that not all are vulnerable to foraging shorebirds and fish.

The problem of a deficiency of fine sediment may complicate the achievement of desired results for habitats that require fine sediment. However, sandy sediment can build up elevations and provide a core or base with fine sediment over the top to provide for appropriate benthic infauna or vegetation. Alternatively, sediment trapping mechanisms may need to be considered; or sediment could be deposited near shore and allowed to accrete naturally with or without a trapping mechanism. As long as sediment supply is sufficient, the mudflat and marsh can build up (accrete) vertically and horizontally (bayward).

Another alternative to consider is to build a small mini levee/berm and vegetate it, then back fill behind it at the same rate as sea level rise. The elevation of the berm should allow overtopping by high tides with the water receding back to the bay.

The project design should accommodate and respond to market conditions and the flat or declining budgets of traditional funding sources. As far as possible it should take advantage of strategic alliances for cost efficiencies.

E.4 Concepts for F & G Street Marsh

Background and Purpose

The tidal connection between San Diego Bay and the F & G Street Marsh could be substantially improved as a wildlife corridor so a wider range of wildlife will readily use this area. This work will benefit from the removal of Lagoon Drive/E Street, which is planned as part of the E Street extension improvement project by the City of Chula Vista.

According to the CCDP and the CVBMP Settlement Agreement:

> As a future and separate project, the District will investigate, in consultation with the USFWS, the feasibility of restoring an ecologically meaningful tidal connection between the F & G Street Marsh and the upland marsh on parcel SP-2, consistent with USFWS restoration concepts for the area. At a minimum the investigation will assess the biological value of tidal influence, the presence of hazardous materials, necessary physical improvements to achieve desired results, permit requirements, and funding opportunities for establishing the tidal connection. This investigation will be completed prior to the initiation of any physical alteration of SP-2, F Street, and/or the F & G Street Marsh. In addition, once emergency access to the CVBMP project area has been adequately established, such that F Street is no longer needed for public right-of-way, the District and City will abandon/vacate the F Street right-of-way for vehicular use, but may reserve it for pedestrian and bicycle use if ecologically appropriate (Settlement Agreement 4.4.5, CCDP 14.5).

The CCDP also states that a pedestrian bridge is proposed to create a linkage over a tidal inlet associated with the F & G Street Marsh:

> Tidal habitats should be treated as ESHAs and the bridge crossing must be designed to enhance the habitat values present and reduce erosion. This bridge span must be extended and the existing incised channel slope should be cut back, reducing the slope and then creating additional salt marsh habitat on the created floodplain. Site-specific studies to assess the extent and quality of natural resources at the site will be required at the time development is proposed (CCDP 5.12).

Desired Outcome

By removing Lagoon Drive and reconnecting tidal access to the F & G Street Marsh, connectivity for wildlife would be enhanced between the CVBMP project footprint and the adjacent WHAs. It is desired that a habitat corridor/connection via redesign for the E Street cross-over, allow for movement of species between the CVBMP footprint and the NWR.

Steps and Considerations

1. As a future and separate project, the District will investigate, in consultation with the USFWS, the feasibility of restoring an ecologically meaningful tidal connection between the F & G Street Marsh and the upland marsh on parcel SP-2, consistent with USFWS restoration concepts for the area. The investigation will assess the biological value of tidal influence, the presence of hazardous materials, necessary physical improvements to achieve desired results, permit requirements, and funding opportunities for establishing the tidal connection. This investigation will be completed prior to the initiation of any physical alteration of SP-2, F Street, and/or the F & G Street Marsh. In addition, once emergency access to the CVBMP project area has been adequately established, such that F Street is no longer needed for public right-of-way, the District and City will abandon/vacate the F Street right-of-way for vehicular use, but may reserve it for pedestrian and bicycle use if ecologically appropriate (Settlement Agreement 4.4.5 and CCDP 14.5).
2. Consistent with the NRMP, consider means to enhance ecosystem services, including biodiversity, filtration, carbon sequestration, recreation, and tourism, all of which are impaired due to the habitat fragmentation that has occurred over time. Any intertidal structures should be designed with conservation planning species in mind in terms of elevation, slope, grade, salinity, etc., by establishing a benchmark reference site to emulate that is currently used by the species.

E.5 Concepts to Assess Sea Level Rise Risk and Vulnerability

The warming climate is a concern of this NRMP because the effects of sea level rise and heat stress could overwhelm all the other measures adopted for natural resources protection in the CVBMP project footprint and WHAs. While climate change mitigation requires a response at a global scale (with our local contribution), adaptation can effectively occur at local scales.

This project should support decisions to implement cost-effective work for adapting to sea level rise and effectively protect the CVBMP project footprint and WHAs. This is in addition to the sea level rise Buffer Areas as a baseline measure established in the CCDP, and the minimum elevation requirements for development in the City of Chula Vista planning area. This project would serve as a pilot or model for similar adaptation elsewhere in San Diego Bay and the region (such as the Port's Climate Action Plan 2013c).

Desired Outcomes/Objectives

The outcome desired for this project is an Adaptation Plan based on a risk and vulnerability assessment for sea level rise on the CVBMP footprint and potentially the WHAs. It would protect the whole continuum of shoreline communities dependent on San Diego Bay conditions beginning with eelgrass in the subtidal shore and progressing to saline-tolerant upland transition plant communities of the highest tidal shore. Upland transition can include high marsh elements inundated once or twice per year, such as California boxthorn and saltbush species, perennial grass-pickleweed community, salt panne or sand flat inclusions, or brackish/freshwater marsh/riparian elements such as rushes, bulrush, arrowweed, or salt marsh fleabane. Conservation planning species are:

- Intertidal endemic fishes such as those in the goby family, and those young-of-year fishes dependent on eelgrass as a nursery such as California halibut. These benefit from warm, sheltered water, a detrital or planktonic-based food chain, and a continuum of tidal access between eelgrass, mudflat, and salt marsh channel. The mudflat has gradual elevation change and pocket shelter such as rocks, vegetation, algae, or other complexity such as ghost shrimp burrows.
- Migratory shorebirds that depend on abundant mud-dwelling infaunal organisms and a broad mudflat that provides sufficient foraging time for birds with a range of foraging behavior (beak lengths and styles) to get adequate nutrition at low tide. They also require high tide roosting and shelter in the upland transition.

The project should identify critical problems of scale and the capacity to implement the adaptation practices. Any obstacles to implementation should be identified, such as sources of fine sediment, conflict with jurisdictional mandates, need for permitting or impact analysis, timing, cost, or other impediment.

A successfully implemented Adaptation Plan would demonstrate ecological sustainability, financial sustainability, equitable use of public funds, and consistency with the missions of stakeholder jurisdictions such as public access, navigation access, and recreation values.

Studies or Steps

The phases or steps for this work may include those identified in NOAA's Coastal Service Center process for coastal decision-making (http://www.csc.noaa.gov/digitalcoast/training/list).

1. A Vulnerability Study specific to the CVBMP footprint should be nested in scale to others already accomplished in San Diego Bay and the region. The Study may incorporate a Risk Assessment that addresses which areas and ecosystem services are most vulnerable, and which impacts are likely to cause the greatest losses.
2. Establish the baseline risk to ecosystem services by assessing exposed infrastructure (to include natural resources as infrastructure and source of ecosystem services). This may directly support the review of cost and benefit.
3. Consider developing alternatives (see below) appropriate for the local low-energy shoreline. The final array of alternatives and decisions could involve stakeholder input due to: unique local conditions and knowledge, history, community interests, the desired vision of the Chula Vista and neighboring community, and administrative and legal aspects.
4. Analyze alternatives and mixes of alternatives for cost-benefit. This analysis should be conducted under four mean sea level conditions: (i) Existing, (ii) 2030, (iii) 2050, and (iv) 2100, to be consistent with the state (CO-CAT) guidance. The alternatives should consider placement and alignment of any structures both within and outside the CVBMP footprint. Obstacles to implementation should be clearly stated in each case. Evaluate adaptive capacity as part of alternatives review (regulatory and planning approaches such as development restrictions, hazard mitigation, shoreline management, post-disaster recovery and emergency plans; fiscal capacity; shoreline structures, evacuation routes and redundant water/wastewater/power systems).
5. Develop the Adaptation Plan. The Adaptation Plan may include:
   - Goals, Objectives, Action Measures, Strategies for developed lands, strategies for undeveloped land.

- Implementation goals that are unambiguous, quantifiable, and time-bounded. Implementation should include a phasing plan to spread out the cost over time. It should include public policy recommendations.
- Designs and formulation of standards by an engineer or geoscientist while using a performance-based approach to recommendations that focuses on outcomes. This is to avoid pitfalls of poor execution, and overly conservative design.
- Cost estimate.
- Funding options.
- CEQA review.
- CCC review, if necessary

6. Monitor Effectiveness. Is the community less vulnerable? Are natural resources more resilient?
7. Share and build on results. Include strategies for stakeholder and public outreach, education, and capacity building.

Alternative Adaptation Options to Evaluate for Effectiveness and Cost-Benefit

Potential Accommodation or Damage Prevention Through Planning

- Integrate upstream areas into planning for possible stream flooding. This could include loss reduction through raising roads; floodplain storage by creating dry basins for holding storm water; retrofitting by removing impervious surfaces, reinforcing, bracing and anchoring structures, flood-proofing structures. Watershed-based open space preservation and conservation can be designed to store floodwaters.
- Building codes include flood-proofing. Adapt existing usable infrastructure for the new evolving waterfront.
- Prohibit coastal hardening (verify that we can plan for a low energy shoreline). Offer incentives for removal of existing structures.
- Prevent development. Redevelopment restrictions, compact community design, government purchase of development rights. Loss reduction through acquisition, demolition, and relocation.
- Managed Retreat: moving development out of the tidal flood zone in a planned and controlled manner using techniques such as rolling easement, zoning, abandonment, relocation, avoidance; this can be based on certain benchmarks of sea level rise. Implement rolling easements or similar policies that allow for shoreline retreat. In highly developed areas there are extensive impediments, high planning costs, and issues of property loss, 'takings', incentives for coastal development, tourism, and tax base impacts.
- Discourage development. Establish a tax based on property value and proximity to coast or need for shoreline hardening or beach nourishment (used in The Netherlands, Sandbridge, Virginia). Create an alongshore buffer/easement for ecosystem retreat, management, and adaptation via: property purchase, purchase of development rights, setbacks/deed restrictions, development disincentives, sale incentives. Insurance incentives/disincentives; clarification of coverage - cost of insurance, based on flood risk, can create a disincentive for building in high risk areas.

- Loss distribution through insurance. Insurance is typically guided by an historical understanding of the frequency and severity of risk factors. As climate change presents a shift away from known weather patterns and extreme events, insurance companies, and the insured, will be required to re-evaluate risk under a new set of untested assumptions about the frequency and severity of extreme events.
- Allow only short-term, inundation-friendly uses.
- Strategic Retreat is the gradual abandonment of dwellings in high risk areas and new development in low risk areas. Allow only structures that are non-permanent, relocation-friendly, elevated/raised, modular, floating, or decomposing.
- Drinking water and wastewater facilities - public infrastructure vulnerability reduction.
- Stormwater management through detention and permeable surfacing (not sea water flood).
- Accommodation through emergency flood response plan; early warning alert system/surveillance with siren or telephone warning system.

Potential Hard Structures

- Embankment, sea wall, revetment, bulkhead (to protect low areas from flooding).
- Design structures to withstand extreme storm events.

Soft Approaches

- Artificial nourishment with mud or sand.
- A vertical levee that eventually becomes submerged as water migrates in.
- Wetland augmentation vertically, horizontally. Salt marshes and other habitats absorb and disperse energy from waves. When designed to encourage the size and connectivity of native aquatic and terrestrial habitats, this benefits many other ecosystem services, including public access.
- Conduct a risk and vulnerability assessment for the CVBMP footprint and surrounding areas to sea level rise impacts from the open coast. This could lead to consideration for establishing a berm in shallow waters offshore of the Silver Strand, or building up the Silver Strand as a berm to protect flooding of the south bay.
- Living Shoreline Restoration. Consider establishing stabilizing vegetation on a berm in shallow waters offshore of the natural or hardened shoreline. Create breaks or gaps in the berm and adjust their height to allow tidal flow. It may fill naturally behind the berm or may be filled with materials to achieve elevations suitable for planting. The structure would fall between the mean high tide and mean low tide. At high tide the waves should wash over the structure bringing in fresh nutrients and organics and dropping sediments. At low tide, water would run out of the marsh to allow for flushing. Gaps in the structure would allow ingress and egress of marine resources. Slope grading would vary depending on the distance from the high water mark to the structure.
- Invasive species management and other processes for preserving native species under anticipated conditions of climate change.

Risk Acceptance (Do Nothing)

- The ecosystem has little to no ability to adapt or recover. There is inland inundation and salt water intrusion.

E.6 Concepts for Artificial Structures and Substrates - Improved Value for Native Species Through Project Design

Background and Need

Shoreline structures that employ as many natural habitat elements as appropriate for site conditions while serving the purpose of the artificial structure are sometimes called living or soft shorelines. They conserve, as feasible, natural sand or mud edges, sheltered pockets, or vegetated elements. They are suited for areas of low to moderate wave energy. Living shorelines create habitat and vegetated buffers that can improve water quality and reduce the effects of upland runoff. Artificial structures in the intertidal zone have potential to provide improved habitat value through design of surfaces available for colonization by algae or invertebrate organisms, or for sheltering fish or for roosting birds.

Objectives

Where they are necessary or beneficial, artificial structures in the intertidal and subtidal zone should improve habitat value for native organisms and other ecosystem services.

Steps or Phases, Alternatives to Examine

- During the CEQA process for structures interfacing bay waters, consider applying design, engineering, and construction practices for conservation planning species selected depending on the site for the structure. Define the physical conditions for the conservation planning species such as appropriate tidal circulation, light, substrate, or sediment replenishment. Maintain or restore conditions for the species and, where possible, deterrence of non-native species.
- Potentially establish needs for the conservation planning species at the site where the structure is to be placed, in as physical terms as possible for the life history stage of the species at that site.
- Potentially apply construction design principles such as surface roughening, sinuosity, particle or feature size or grade, tidal exposure, hardness, etc. Structures should not result in "dead zones" for aquatic species that cannot exit with the tide. Tidal flushing and connectivity to the areas landward of an intertidal structure should be considered through appropriate opening locations and sizes governed by conservation planning species likely to utilize the structure or tides specific to each site.
- If water quality improvement is one of the objectives, runoff from the adjacent watershed should be directed into or through the wetland as opposed to a simple excavated basin with a limited watershed.
- Site-specific engineering may be required to ensure that the intertidal zone and supporting structures provide functional ecological benefits. Design Criteria could include placement and orientation to maximize fine sediment retention; dynamic shore condition; ecological function; ecological process. Appropriate shoreline applications will act as part of the natural system, not against it.
- Potentially analyze alternatives: hard, soft stabilization with fill, hybrid, placement, alignment, impacts to native flora/fauna. Soft approaches: riparian vegetation management, upland transition vegetation management, sand or finer sediment nourishment, dune restoration (sand replenishment eventually will

be needed), tidal marsh enhancement, tidal marsh creation, bank grading, fiber logs. Hybrid approaches: marsh toe revetment; marsh sill; marsh with groins, offshore breakwater system. Placing sediment off the shoreline to let it naturally wash in. Design in fringe wetlands that improve water quality.

- Potentially develop financial incentives for the use of soft shorelines or improved habitat value of artificial substrates.

E.7 Concepts for Restoring Fine Sediment Dynamics

Background

A management plan might be created to protect and restore the role of fine sediment in the bay. Natural fine sediment supply and dynamics has both marine and freshwater influences.

Desired Outcome

Sources of fine sediment may be identified for possible restoration work or as part of a broad program that allows for ecosystem markets and mitigation markets to play a role in recovering fine sediment supply through nourishment and retention (such as by trapping if necessary) in south San Diego Bay.

Steps

A study funded through a grant may be conducted on the feasibility, cost-benefit, and priority for promoting fine sediment beyond the current baseline. The results could determine if fine sediment criteria should be considered in project and restoration design, and analysis of alternatives.

E.8 Concepts for Regional Restoration Planning to Benefit the CVBMP Area, and Coordinate Public-Private Funding Towards Conservation Need

Background and Purpose

Restoration Planning based on an ecological need (proactive) vs. opportunistically by project requirement (reactive) may be best to optimize conservation effort. Case studies are available throughout the United States where regulatory agencies, private interests, and planners have achieved improved outcomes for both mitigation need and ecosystem benefit. An example in the San Diego region are the multiple-species programs tied to project permitting under the state's Natural Communities Conservation Planning program, but there are many others. Creative wetland mitigation banking or in-lieu fee arrangements for both wetlands and species offsets are other examples.

The NRMP contains a broad portfolio of possible conservation and restoration actions for a small space with intense concentration of ecosystem values, influenced by regional and global environmental and economic drivers, and in an era of flat or declining budgets. None of these are expected to change in the near term. Projects affecting natural resources in and potentially surrounding the CVBMP area should contribute the most possible to NRMP resilience goals and offset the consequences of these drivers, using incentives, regulatory, and/or financial tools to benefit joint private and public interests.

Desired Outcomes, Objectives

The desired outcome is a planning overlay that provides:

- Faster, less expensive, and more effective at benefiting habitat quantity and quality than traditional project-by-project work.
- Higher quality habitat by considering a landscape context and understanding the biophysical habitat elements that support conservation planning species, and evaluating future threats to those conditions.
- Fewer delays in infrastructure development and improvements.
- A blended regulatory and financial strategy that aligns with achieving NRMP goals and objectives for the well-being and resilience of people, fish, and wildlife.
- CEQA efficiencies such as by use of categorical exclusions and pilot projects (which would still require CEQA review) to build more complex problems from, or by focusing on a more cohesive strategy on a landscape level that results in cost efficiency.
- Demonstrate one of two overarching strategies to maximizing flexibility to spend money to benefit habitat recovery and conservation species:

1. Planning efficiencies that help accomplish more with the funds that are available, which is mostly spent on environmental compliance responsibilities, especially project-level documentation and various kinds of monitoring; and
2. Partnerships, alliances and collaboratives that will pay off while bringing in new investment from partners or from beneficiaries of ecosystem services.

Suggested Studies and Steps

- Seek grants to support a market analysis and feasibility study for one of the project ideas in this Appendix, through its project design plans and planning documents. Evaluate financial opportunities to set up restoration, mitigation banking, and ecosystem service markets and what scale is necessary to be effective for aquatic resources. The market should define the scale needed.
- Evaluate the local appropriateness of the many examples in California and the U.S. of attempts to achieve the above outcomes using programmatic agreements. Evaluate whether the scale of the habitat work is worth extra administrative overhead expense by looking at case studies elsewhere. See for example: National Cooperative Highway Research Program (2011). Other examples include: (1)Joint Aquatic Resources Permit Application for San Francisco Bay and State of Washington; (2) Minnesota state wetlands policy; (3) Natural Capital Project (Stanford, University of Minnesota, The Nature Conservancy, and World Wildlife Fund, producing one of first applications that places a monetary value on ecosystem services - InVEST [Nelson et al. 2009]); (4) Willamette Basin Partnership in Oregon. Funded through an NRCS Innovation Grant meant to help create markets for ecosystem services. Mitigation activity and planning are driven by a markets approach, which tends to demand both transparent criteria for measuring environmental improvements and damages and an assessment of benefits associated with alternative mitigation outcomes. (5) Regional Advance Mitigation Planning (RAMP) in California to meet needs for infrastructure and flood protection while advancing regional and statewide conservation goals. Launched in 2008 by a coalition of infrastructure and natural resource agencies, nongovernmental organizations, and academic researchers, RAMP is an effort to develop a more comprehensive approach to mitigating biological resource impacts caused by state infrastructure projects, such as roads and levees. It allows for natural resources to be protected or

restored as compensatory mitigation before infrastructure projects are constructed, often years in advance. Mitigating in advance allows for more efficient project approvals, more certainty to cost estimates, and takes advantage of conservation opportunities before important land is lost to conversion. There is a RAMP Statewide Framework for implementing regionally.

- Set up for broad environmental offsets, not single species, or wetlands alone. A baseline description of ecosystem services is needed to support this, followed by a needs assessment at a landscape or watershed level (such as impairment correction, fine sediment, carbon sequestration, more mudflat, more upland transition, more access to fresh/salt water interface). A trade-off analysis should be conducted among natural resources of concern for a particular location where work is proposed.
- Rate sites for their potential to provide specific ecosystem services and support specific conservation planning species. A natural resource economist should integrate social-economic values into the formula for site valuation and priorities. Consider the offset site's economic benefits to people; for example, sites that are restored and provide access and visibility to people have a higher value.
- Continue the culture of collaboration and partnership established by the WAG.

E.9 Concept to Conduct a Market Analysis of Mitigation Opportunity and Pilot Project for a Programmatic Approach to Regulatory Compliance and Sea Level Rise Accommodation

With the interplay of natural resources, their use, and the variety of benefits they provide as extraordinarily concentrated as they are in San Diego Bay, mitigation opportunities are precious, as are development opportunities. A project-by-project approach could have unintended consequences that forego future choices of greater benefit to NRMP goals and sea level rise adaptation. Therefore, this NRMP recommends that the planning and regulatory process be realigned in a programmatic framework to facilitate conservation work in the areas affecting the health of the CVBMP area. As illustrated by this NRMP's Guiding Principles in Section 1.4, and Implementation Principles in Section 7.3, the first purpose of the programmatic framework is to identify how the core natural resource values (see Section 1.3: The Bayfront Environ's Core Natural Resource Values) of the CVBMP area, and potentially its connected areas, could be enhanced, regardless of the requirements of the source of funding or regulation. The second purpose would be to facilitate the most progress to achieving NRMP goals through as many means as possible, whether it be grants, mitigation, beneficial re-use of sediment, or other.

Achieving habitat goals would benefit from a market analysis of mitigation opportunities, to determine how effective mitigation banking or other mechanisms would be in meeting the Port's needs, and at what scale such a mechanism, or combination with other means, would need to function to be financially viable. Opportunities for conservation work are very constrained, and conservation goals may be at risk from sea level rise and other threats. The financial viability of relying on mitigation as a source of funds for NRMP beyond-compliance goals identified in the CVBMP controlling documents may not be practical.

In addition, such an analysis would inform planners about whether the NRMP recommendations of this Appendix would benefit from a programmatic approach to determining what mix of grant funding and private sector investment could work.

A San Diego Bay-wide pilot project is suggested to identify and overcome regulatory hurdles that can stand in the way of implementing projects to adapt to sea level rise while providing habitat enhancement opportunities. Placement of dredge material, for example, can be pre-planned for vulnerable locations onshore, providing climate change resilience and habitat benefit. This pilot project may include an effort to work with the resource and regulatory agencies to develop policies and procedures to facilitate such beneficial reuse projects and a conceptual model for implementing such work. Under current regulation, it is difficult to get a permit to place fill in wetlands even though such an activity may be useful and necessary in the future to offset sea level rise. Consequently, it would be useful to have the regulations modified prior to the time dredge and fill projects are needed in the future, so that important sediment sources are not lost to bay natural resource benefit and sea level rise adaptation.

E.10 Concepts for Research Opportunities Supporting NRMP Goals

This NRMP seeks to foster partnerships with research institutions to conduct work that makes a difference on the outcomes and indicators of success for the CVBMP area. All of the research opportunities below may require partnerships to leverage funds and technical support. Examples are:

- Investigate the dynamics of fine sediment in south bay as it relates to retention of conservation values and future resilience to sea level rise. Investigate and differentiate between clays/silts and sandy sediment processes in the bay.
- Investigate best methods to evaluate ecosystem services provided by the status quo, to compare to benefit achieved in the future. Compare existing ecosystem valuation tools such as InVEST (Natural Capital Project)[2] and SolVES (Social Values for Ecosystem Services).[3]
- Evaluate the effectiveness of the climate change adaptation measures in the CVBMP project footprint and vicinity, and benefits or trade-offs for people. Also assess cost-benefit in at least three time frames. Adaptation measures examples could include planting native vegetation, planting urban trees, water conservation, reduced shoreline erosion, or sediment nourishment.
- Refine the list of conservation planning species so that providing for them has more of a physical basis, and biologists can provide direction for incorporating into project scopes and habitat design. Improve understanding of the biophysical parameters that support each species.
- Refine the measures of community well-being. Evaluate social benefits of sustainable community living adjacent to wildlife habitat.
- Refine the economic measures of success, for efficient use of scarce funds which makes a difference on accomplishing long-term NRMP goals.

E.11 Recommended Evaluation Criteria

The following five evaluation criteria align with this NRMP's guiding principles (Section 1.4: The NRMP's Core Guiding Principles), and could be used to evaluate proposals or financing opportunities.

2. http://www.naturalcapitalproject.org/pubs/NatCap_InVEST_Tool_Description_All_TEEBcases_2010.pdf
3. solves.cr.usgs.gov/

1. Which NRMP objectives are achieved by the proposed work?
2. Is the proposed work required by the Settlement Agreement, CCDP, or MMRP?
3. Identify which indicators and conservation planning species benefit from the proposed work (see Table E-1 and Figure E-2). (These species are to help consider design criteria such as tidal range, sediment, size, or slope of habitat area.)
4. What primary (P) and secondary (S) ecosystem services are provided? Check off in Table E-1 if, for example:
   - Water quality threat addressed;
   - Flood protection benefit delivered;
   - Species abundance threat reduced;
   - Species habitat improved;
   - Increased recreational opportunity;
   - Increased land value for property adjacent to new natural areas;
   - Improved proximity of nature to recreators;
   - Proximity to trails, roads, boat ramps;
   - Resident or visitor usage rates and people are within walkable, drivable distances of the resource.
5. Additional Ranking Criteria as appropriate:
   - Builds resilience against a known vulnerability identified in the NRMP (climate change, invasion, feral predators).
   - Reduces a threat through habitat improvement in quantity or quality (such as risk to conservation planning species by provision of escape cover from predators).
   - Reduces user conflict.
   - Addresses multiple, cumulative impacts - e.g. environmental, subsistence fisheries, commercial fisheries, biodiversity, etc.
   - Protects a restoration investment or a future restoration opportunity.
   - Ecosystem-based. Gets to the underpinnings of ecosystem values (physical attributes that foster habitat quality).
   - Increases ecosystem services: nature-people interface, carbon stocks.
   - Restores "missing" habitat elements from historical mudflat, salt marsh, and/or upland transition.
   - Ecosystem trade-offs are analyzed transparently.
   - Project may be replicated, scaled up, or may catalyze other beneficial work.
   - Strengthens other bay-related planning processes.
   - Improves probability of successful implementation of CVBMP goals and objectives by making them more operational (provides a valuable management step).

Table E-1. Fill in with P for primary ecosystem service, and S for secondary service.

X	Icon	Provisioning	X	Icon	Regulating	X	Icon	Habitat/Supporting	X	Icon	Cultural
		Food			Local Climate & Air Quality			Habitats for Species			Recreation, Mental & Physical Health
		Raw Materials			Carbon Sequestration, Storage			Maintenance of Genetic Diversity			Tourism
		Fresh Water			Moderation of Extreme Events						Aesthetic Appreciation, Inspiration for Culture, Art and Design
		Medicinal Resources			Waste-water Treatment						Spiritual Experience, Sense of Place
					Erosion Prevention, Soil Fertility						
					Pollination						
					Biological Control						

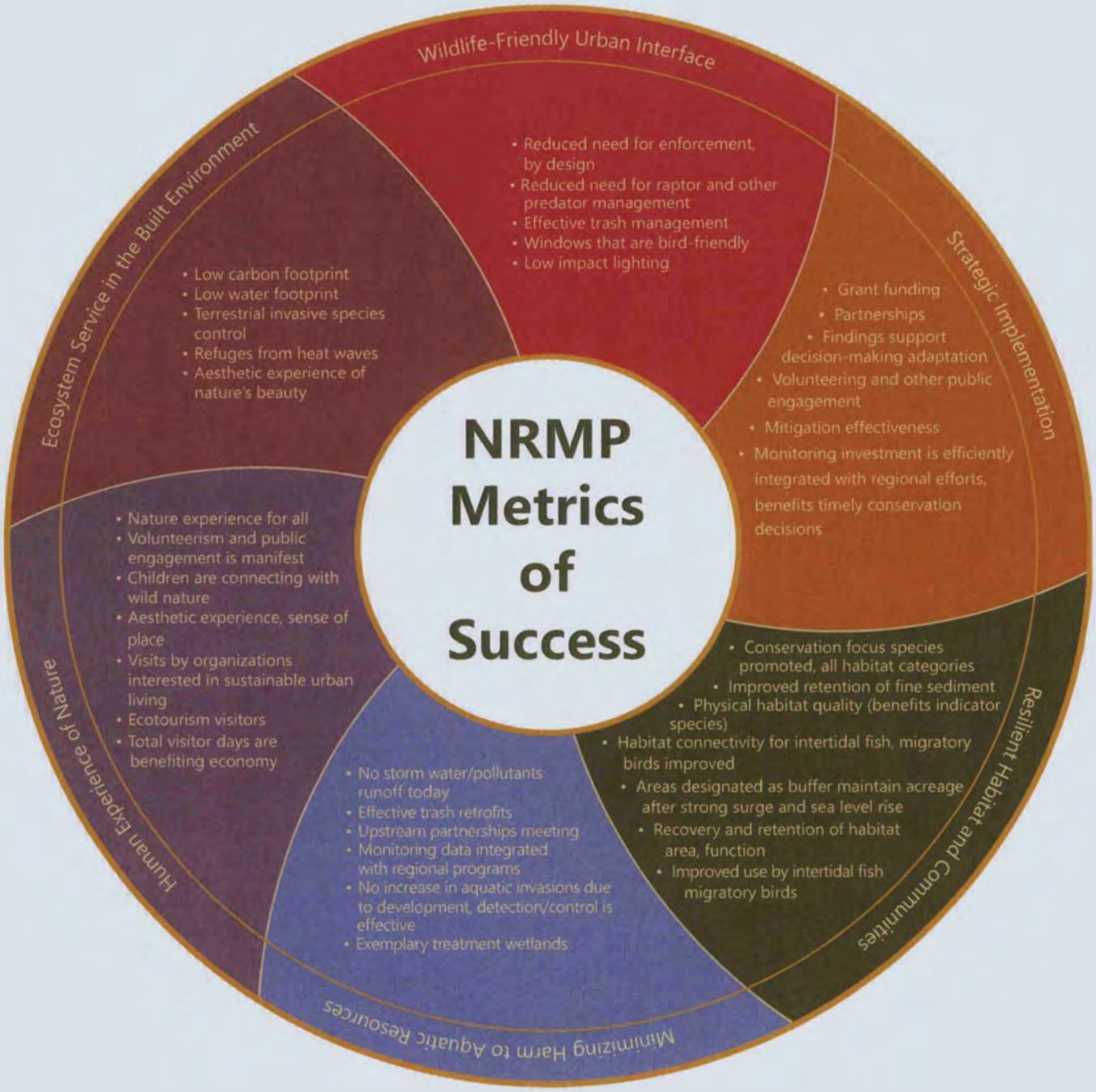

Figure E-2. Success Indicators for NRMP implementation.

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Appendix F: Comprehensive Plant List

The following plant lists are intended as guidance for landscape planning. As a comprehensive guide, specifications for each plant species are listed, as well as preferences for sun exposure and irrigation needs. These lists are developed specifically for coastal San Diego Urban/Wildland interface for specific ecosystem services, such as supporting native pollinator species, habitat, stormwater runoff filtration, and the human experience of nature. Each species listed is known to be in cultivation and should be available from local and state-wide sources. Seeds of many herbaceous species (containing no above-ground woody parts) are available from S&S Seeds, or by contract from local seed collecting companies. Several species included are listed by the USFWS as threatened or endangered, and seed collection permits must be obtained from USFWS. Taxonomy is consistent with the Jepson Manual, 2nd Edition (Baldwin et al. 2012).

Recommendations made here are plants native to California from locations within the state with a similar dry Mediterranean climate with an average rainfall of approximately 15 inches per year. Many of the recommended species are those that occur within the coastal environment of southwestern San Diego County. There is increasing availability of plant material in nurseries propagated from local genetic stock. For new plantings at the Chula Vista Bayfront, this would be the top choice when available. There are at least two reasons for this as a practice consistent with the goal of sustainable landscapes. Both reasons emerge from the principle that plants, like all organisms, often form local populations with distinct gene pools. From the perspective of sustainable horticulture, obtaining plants from within the local genetic population will assure forms of the species that are most adapted to the locale. From the perspective of conservation, the introduction of conspecific plants (same species) from outside the local gene pool may unwittingly introduce genetic material not contained within the local gene pool. The effects of this dynamic are subtle and long-term, but could contribute to a homogenization of local gene pools and the loss of genetic diversity.

One note to observe when using these lists is the ambiguous separation of perennials and shrubs. Used here is a broad understanding of a perennial plant that would include all herbaceous perennials and plants referred to as suffrutescent. These are plants that are found mostly within Mediterranean climates that may develop a scaffold of branches above ground that are woody at the base but always herbaceous within the current season's growth. These are sometimes referred to as subshrubs, but are considered perennial in the broad sense in this treatment.

Another is the distinction between trees and shrubs. Used here is a naturalistic approach that considers the life history of the species in question. Many of the larger shrubs can eventually become tree-like, especially with pruning. However, even in nature, these large growing shrubs have multiple trunks from the base of the plant with crowns typically much more dense than trees. With regard to this list, shrubs rarely exceed 20 feet in height. Most tree species listed are considerably taller when mature.

F.1 Annuals

Botanical Name	Common Name	Native Status	Height (inches)	Spread (inches)	Irrigation	Wildflower Gardens	Bedding	Flower Color	Flowering Season	Shade	Part Shade	Full Sun
Calandrinia ciliata	red maids	SD	4-18	4-18	R-M-L	X		rose-red	Feb-May			X
Castilleja densiflora	Parish's owl's clover	CSD	4-12	4	M-L	X		yellow-purple	Mar-May			X
Castilleja exerta	red owl's clover	CSD	6-12	4	M-L	X		purple	Mar-May			X
Cistanthe maritima	sea kisses	CSD	4-18	4-18	R-M-L	X		rose-red	Feb-May			X
Chloropyron maritimum subsp maritimum	salt marsh bird's beak	CSD	4-16	4-16	L	X		white-cream	May-Oct			X
Clarkia amoena	godetia	CA	12-24	6-12	M-L	X	X	pink-lavender	Jun-Aug		X	X
Clarkia bottae	punch-bowl godetia	SD	12-24	12-18	M-L	X	X	pink	Apr-Jul		X	X
Clarkia concinna	red ribbons	CA	4-12	12	M-L	X	X	red	Apr-Jul		X	X
Clarkia purpurea subsp. *quadrivulnera*	four-spot clarkia	CSD	12-24	6-12	M-L	X	X	red-purple	Apr-Aug		X	X
Clarkia rubicunda	red godetia	CA	24-36	24-36	M-L	X	X	pink-lavender	May-Aug		X	X
Clarkia unguiculata	elegant clarkia	SD	12-24	12	M-L	X	X	pink-salmon-red-purple	Apr-Sep		X	
Collinsia heterophylla	Chinese houses	CSD	10-20	8-12	M-L	X		white and violet	Mar-Jun	X	X	
Dicranostegia orcuttiana	Orcutt's bird beak	CSD	4-18	4-18	L	X		white and yellow	Mar-Aug			X
Eschscholzia californica	California poppy	SD	12-24	12-24	M-L	X	X	orange	Feb-Sep			X
Eschscholzia caespitosa	tufted gold- poppy	SD	4-12	8-18	L	X		yellow	Mar-May			X
Gilia capitata	blue gilia	SD	4-12	3-6	M-L	X		blue	Apr-Aug			X
Gilia tricolor	bird's-eye gilia	CA	4-12	3-6	M-L	X		purple, yellow, and white	Mar-Jun			X
Lasthenia gracilis	goldfields	CSD	2-4	3-8	M-L	X		yellow	Feb-Apr			X
Layia platyglossa	tidy tips	CSD	12-24	12-18	M-L	X	X	yellow and white	Mar-May			X
Linanthus dianthiflorus	farinose ground pink	CSD	4-8	4-6	L	X		pink, white and red	Feb-Jun			X
Lupinus bicolor	miniature lupine	CSD	3-6	3-6	M-L	X		blue and white	Mar-Jun			X
Lupinus microcarpus var. *densiflorus*	valley lupine	CA	12-24	12-24	M-L	X	X	yellow	Apr-Jun			X
Lupinus nanus	valley sky lupine	SD	4-12	4-12	M-L	X		blue	Mar-May			X
Lupinus succulentus	arroyo lupine	CSD	12-24	12-24	M-L	X	X	blue	Feb-May			X
Mentzelia gracilenta	slender stick-leaf	SD	36-48	12-24	L	X		yellow	Apr-May			X
Nemophila maculata	spotted nemophila	CA	8-12	8-12	R-M	X		white and blue	may-Jul		X	
Nemophila menziesii	baby blue eyes	SD	3-6	8-12	R-M	X	X	blue	Feb-May		X	
Phacelia campanularia	desert bluebell	SD	4-24	4-24	L	X	X	blue	Feb-May			X
Phacelia grandiflora	giant-flowered phacelia	CSD	12-40	12-40	M	X	X	lavender	Apr-Jun		X	X
Phacelia parryi	Parry's phacelia	CSD	4-36	4-36	L	X		violet	Mar-May		X	X
Platystemon californicus var. *nutans*	San Diego cream cups	CSD	4-12	4-12	M-L	X		cream-yellow	Mar-May			X
Salvia columbariae	chia	CSD	3-24	2-9	L	X		violet	Mar-Jun			X
Triphysaria eriantha	butter and eggs	SD	2-6	2-3	M-L	X		yellow and white	Feb-Apr			X
Zeltnera venusta	California centaury	CSD	4-8	4-9	L	X	X	pink-salmon	May-Aug		X	X

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F.2 Perennials

Botanical Name	Common Name	Native Status	Height (inches)	Spread (inches)	Irrigation	Perennial Border	Massing	Specimen	Flower Color	Flowering Season	Evergreen	Summer or Stress Deciduous	Winter Dormant	Shade	Part Shade	Full Sun
Abronia maritima	red sand verbena	CSD	3-6	18-24	M-L		X		wine red	Feb-Oct	X					X
Abronia umbellata	pink sand verbena	CSD	3-6	18-24	M-L		X		pink	all year	X					X
Achillea millefolium	yarrow	CSD	3-18	18+	M-L	X			white to pink	Apr-Sep	X				X	X
Agave shawii var. shawii	Shaw's agave	CSD	36-60	36+	L			X	yellow	Sep-May	X					X
Ambrosia pumila	San Diego ambrosia	CSD	12-24	24+	L		X		none	Apr-Jul	X				X	X
Anemopsis californica	yerba mansa	CSD	8-24	12+	R-M-L		X		white	Mar-Aug		X			X	X
Aquilegia formosa	western columbine	SD	24-36	12-18	R-M			X	red and yellow	Apr-Sep			X		X	X
Artemisia douglasiana	Douglas mugwort	CSD	24-60	24+	M-L		X		insignificant	n/a	X				X	X
Asclepias californica	round-hood milkweed	SD	18-24	12-18	L	X		X	purple	Apr-Jul						X
Asclepias fascicularis	narrow-leaf milkweed	SD	18-24	36+	L	X		X	white	May-Oct			X			X
Camisonniopsis cheiranthifolia subsp. *suffruticosa*	beach evening primrose	CSD	4-24	12-24	L	X	X		yellow	Apr-Aug	X					X
Corethrogyne filaginifolia	California sand-aster	CSD	18-36	18	L	X			pink	Jul-Nov	X					X
Dudleya attenuata subsp. *attenuata**	Orcutt's dudleya	CSD	2-10	2-6+	L			X	white flushed rose	May-Jun	X					X
*Dudleya blochmaniae**	Blochman's dudleya	CSD	4-12	1-3+	L			X	white	Apr-Jun		X				X
*Dudleya brevifolia**	short-leaf dudleya	CSD	1-2	1-2+	L			X	pale yellow	Apr-Jun		X				X
*Dudleya edulis**	ladies fingers	CSD	6-12	6-12+	L			X	cream	May-Jul	X				X	X
*Dudleya lanceolata**	lance-leaf dudleya	CSD	6-12	6-12+	L			X	yellow to red	Apr-Jun	X				X	X
*Dudleya pulverulenta**	chalk dudleya	CSD	12-24	12-24+	L			X	red	May-Jul	X				X	X
*Dudleya variegata**	variegated dudleya	CSD	2-8	1-3+	L			X	yellow	Apr-Jun	X					X
*Dudleya visida**	sticky dudleya	CSD	6-24	3-8+	L			X	pink	May-Jun	X					X
Epilobium canum	California fuchsia	CSD	6-30	12-48	M-L	X	X		bright orange-red	Jun-Dec			X		X	X
Ericameria palmeri	Palmer's goldenbush	CSD	6-18	6-18	L	X			yellow	Sep-Nov	X					X
Erigeron glaucus	seaside aster	CA	8-12	24-36	M-L	X			lavender	May-Jul	X					X
Eriogonum grande var. *rubescens*	red buckwheat	CA	24-36	36+	L	X			rose	Apr-Sep	X				X	X
Eriophyllum confertiflorum	yellow yarrow	CSD	18-24	18-24	M-L	X			gold	Apr-Aug		X				X
Erysimum capitatum	western wallflower	SD	12-24	12-18	L	X			orange-yellow-lavender	Mar-Sep	X					X

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**Dudleyas are succulents that form a rosette of leaves (cluster resembling a rose). Dimensions given are for single rosettes. Most species form tight clumps made up of many (even hundreds) rosettes. Most of those listed are part of the maritime succulent scrub found on coastal bluffs.*

Botanical Name	Common Name	Native Status	Height (inches)	Spread (inches)	Irrigation	Perennial Border	Massing	Specimen	Flower Color	Flowering Season	Evergreen	Summer or Stress Deciduous	Winter Dormant	Shade	Part Shade	Full Sun
Euthamia occidentalis	western golden rod	CSD	24-60	24+	R	X			gold	Jul-Nov			X			X
Grindelia camphorum	gumplant	CSD	18-60	18-60	M-L	X			yellow	May-Nov	X					X
Helianthus californicus	California sunflower	CSD	48-84	48+	R-M-	X			yellow	Jul-Oct			X			X
Heterotheca sessiliflora	bristly goldenaster	CSD	8-24	8-24	M-L	X			yellow	Jun-Sep	X					X
Heuchera maxima	Island alum root	CA	24-36	12-18	M-L	X	X		white-pink	Apr-May	X				X	
Heuchera rubescens	San Diego alum root	SD	4-8	8-12	M-L	X	X		pink-red	May-Sep	X				X	
Heuchera Rancho Santa Ana Hybrids	RSABG alum root hybrids	Cv	6-18	18+	M	X	X		pink-coral-salmon-red	Apr-Jul	X				X	
Iris douglasiana	coast iris	CA	8-18	24-72	M-L	X	X		purple-white	Mar-Apr	X				X	X
Iris Pacific Coast Hybrids	PCH iris	Cv	12-24	12-36	M-L	X	X		many colors	Mar-Apr	X				X	X
Isocoma menziesii	goldenbush	CSD	36-60	24	L	X			Yellow	Sep-Nov			X			X
Iva hayesiana	San Diego marsh-elder	CSD	36	36	M		X		insignificant	n/a	X				X	X
Lepechinia calycina	pitcher sage	CA	36-48	36-48	M-L	X			white-lavender	Apr-Jun				X	X	
Leptosyne maritima	San Diego sea-dahlia	CSD	12-30	12-30	M-L	X			yellow	Feb-Jun		X				X
Lupinus formosus	summer lupine	SD	8-30	8-30	L	X			purple	Apr-Sep		X			X	X
Lupinus latifolius var. *parishii*	Parish s stream Lupine	SD	24-48	24-48	M	X			purple-white	May-Aug	X					X
Mimulus aurantiacus var. *pubescens*	sticky monkey flower	SD	24-48	24-48	M-L	X			pale yellow	Mar-Jun		X			X	X
Mimulus aurantiacus var. *puniceus*	coast monkey flower	CSD	24-36	24-36	M-L	X			red-orange	Mar-Jun		X			X	X
Mimulus clevelandii	Cleveland monkey flower	SD	24-36	24-36	M-L	X			yellow	Apr-Jun		X			X	X
Mirabilis laevis var. *crassifolia*	wishbone flower	CSD	24-30	24-30	L	X			purple	Dec-Jun		X			X	X
Monardella macrantha	scarlet monardella	SD	12-24	18-36	M-L		X		red	May-Aug	X					X
Oenothera elata subsp. *hookeri*	Hooker s evening primrose	SD	18-48	12-18	R-M	X	X		yellow	Jun-Sep	X				X	X
Penstemon centranthifolius	scarlet Bugler	SD	24-36	18-24	L	X			red	Apr-Jul		X				X
Penstemon clevelandii	southern penstemon	SD	24-30	18-24	L	X			purple	Apr-Jul		X				X
Penstemon heterophyllus	foothill penstemon	SD	8-12	12-18	L	X			blue-violet	May-Jul	X					X
Penstemon spectabilis	showy penstemon	SD	36-48	18-24	L	X			blue	Apr-Jul		X				X
Pluchea odorata	salt marsh fleabane	CSD	36-48	18-30	M-L	X			rose-purple	Jul-Nov			X		X	X
Romneya coulteri	Matilija poppy	CSD	60-84	60+	L		X		white	May-Sept	X					X
Salvia spathacea	hummingbird sage	SD	24-48	24+	M-L	X			rose-purple	Apr-Sep	X				X	X

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**Dudleyas are succulents that form a rosette of leaves (cluster resembling a rose). Dimensions given are for single rosettes. Most species form tight clumps made up of many (even hundreds) rosettes. Most of those listed are part of the maritime succulent scrub found on coastal bluffs.*

Botanical Name	Common Name	Native Status	Height (inches)	Spread (inches)	Irrigation	Perennial Border	Massing	Specimen	Flower Color	Flowering Season	Evergreen	Summer or Stress Deciduous	Winter Dormant	Shade	Part Shade	Full Sun
Sidalcea malvaeflora subsp. *californica*	chaparral checkerbloom	SD	6-24	18-36	M-L	X			pink	Mar-Jun		X			X	X
Silene laciniata	southern pink	CSD	4-6	6-12	M-L	X			red	Mar-Jul		X			X	
Sisyrinchium bellum	blue eyed grass	CSD	6-18	4-8	L	X	X		blue-violet	Mar-May		X				X
Solidago velutina subsp. *californica*	California golden rod	SD	12-36	12	L	X			yellow	May-Nov			X		X	X

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F.3 Ferns

Botanical Name	Common Name	Native Status	Height (inches)	Spread (inches)	Irrigation	Shade	Part Shade	Full Sun
Adiantum capillus-veneris	western five-fingered fern	SD	18-24	12+	M-L	X	X	
Adiantum jordanii	California maidenhair	CSD	6-18	12+	M-L	X	X	
Dryopteris arguta	coastal wood fern	SD	12-24	12+	M-L	X	X	
Pellaea andromedaefolia	coffee fern	CSD	6-28	12+	L		X	X
Pellaea mucronata	bird's-foot fern	SD	6-12	12+	L	X	X	X
Pentagramma triangularis subsp. *viscosa*	gold-back fern	CSD	2-6	6-12	L	X	X	
Polypodium californicum	California polypody fern	CSD	4-12	12+	M-L	X	X	
Woodwardia fimbriata	giant chain fern	SD	36-72	24+	R-M	X	X	

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F.4 Bulbs and Bulb-Like Plants

Botanical Name	Common Name	Native Status	Height (inches)	Spread (inches)	Irrigation	Dedicated Bulb Garden	Meadow	Flower Color	Flowering Season	Part Shade	Full Sun
Allium crispum	crinkled onion	CA	6-12	3	L	X		rose-purple	Mar-Jun		X
Allium praecox	early onion	CSD	8-18	3	M-L		X	pale pink	May-Jun	X	
Allium uniflorum	pink meadow onion	CA	6-24	6+	M-L	X	X	white-pink	May-Jun		X
Bloomeria crocea var. crocea	common goldenstar	CSD	12-24	3-6	L	X	X	yellow	Apr-Jun	X	X
Brodiaea coronaria	garland brodiaea	CSD	8-12	3-6	L	X	X	violet	Apr-Jun	X	X
Brodiaea elegans	harvest brodiaea	CSD	8-12	6+	L	X	X	violet	Apr-Aug		X
Calochortus albus	white globe lily	SD	8-36	3	L	X		white	Apr-Jun	X	X
Calochortus amabilis	Diogenes' lantern	CA	8-18	3	M-L	X		yellow	Apr-Jun	X	X
Calochortus concolor	golden-bowl mariposa lily	SD	12-24	3	L	X		yellow	May-Jul	X	X
Calochortus splendens	splendid mariposa lily	SD	8-24	3	L	X		deep lilac	May-Jul		X
Calochortus superbus	superb mariposa lily	SD	16-24	3	L	X		white-yellow-lavender	May-Jul		X
Chlorogalum pomeridianum	wavy-leafed soap plant	SD	24-60	12-18	L		X	white	May-Aug		X
Dichelostemma capitatum	blue dicks	CSD	12	3-6	L	X	X	blue	Mar-Jun		X
Dichelostemma congestum	fork-toothed ookow	CA	24-36	3-6	L	X	X	blue-purple	Apr-Jun	X	X
Dichelostemma ida-maia	firecracker flower	CA	18-30	3-6	L	X	X	red	May-Jul	X	X
Dichelostemma multiflorum	wild hyacinth	CA	18-30	6+	L	X		pink to blue	May-Jun	X	X
Fritillaria affinis	checker lily	CA	18-36	3	M-L	X	X	brown-purple mottled yellow	Mar-Jun	X	X
Fritillaria biflora	chocolate lily	CSD	6-12	3-9	L	X		dark brown to green-purple	Mar-May	X	X

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Notes on bulbs: Many native bulbs may be eaten by gophers. It is suggested that gopher baskets be used when planting to protect the bulbs from predation. Those with an "L" under irrigation should not receive any irrigation from June until fall rains. Summer moisture can cause the bulbs to rot. Purchase only nursery-produced bulbs, never ones that are wild-collected.

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Botanical Name	Common Name	Native Status	Height (inches)	Spread (inches)	Irrigation	Dedicated Bulb Garden	Meadow	Flower Color	Flowering Season	Part Shade	Full Sun
Lilium humboldtii var. ocellatum	oscellated Humboldt lily	SD	60-84	12+	L	X		light orange spotted red	May-Aug	X	X
Lilium pardalinum	leopard lily	SD	36-72	12+	R	X	X	red to yellow with maroon spots	May-Aug	X	X
Triteleia hyacinthina	white brodiaea	CA	12-24	6+	M-L		X	white	Mar-Jul	X	X
Triteleia ixioides	golden brodiaea	CA	8-24	6+	L	X	X	gold-yellow	May-Jul	X	X
Triteleia laxa	Ithuriel's spear	CA	8-18	6+	L	X	X	blue-purple	Apr-Jun	X	X
Triteleia peduncularis	long-rayed brodiaea	CA	18-30	6+	M-L		X	white	May-Jul	X	X

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F.5 Perennial Grasses and Grass-Like Plants

Botanical Name	Common Name	Native Status	Height (inches)	Spread (inches)	Irrigation	Short Meadow	Tall Meadow	Fresh Water Wetland	Salt Marsh	Shade	Part Shade	Full Sun
Sedges and Rushes												
Bolboschoenus maritimus subsp. *paludosus*	saltmarsh bulrush	CSD	48-60	48-60+	SM				X			X
Carex amplifolia	bigleaf sedge	CA	18-36	24+	R-M-L		X	X		X	X	
Carex barbarae	Santa Barbara sedge	SD	12-48	24+	M		X				X	
Carex densa	dense sedge	CA	12-24	12+	R-M		X	X			X	X
Carex globosa	round-fruit sedge	SD	6-12	12+	M-L	X					X	X
Carex gracilior	slender sedge	CA	12-24	12-24	R-M		X	X			X	X
Carex multicaulis	rush sedge	SD	12-24	12-24	M-L		X			X	X	
Carex nudata	torrent sedge	CA	24-36	24-36	R-M		X	X			X	X
Carex pansa	sand dune sedge	CA	3-12	24+	M	X					X	X
Carex praegracilis	cluster field sedge	SD	6-12	8+	M	X						X
Carex spisa	San Diego sedge	CSD	36-48	24+	R-M		X	X			X	X
Carex subfusca	brown sedge	SD	4-8	12+	M-L	X					X	X
Carex triquerta	trigonous sedge	CSD	12-24	13-24	L		X			X	X	
Eleocharis coloradoensis	dwarf spike rush	CSD	2-4	12+	W			X				X
Eleocharis macrostachya	pale spike sedge	CSD	12-36	36+	W			X				X
Eleocharis montevidensis	Dombey's spike rush	CSD	12-24	24+	W			X				X
Juncus acutus subsp. *leopoldii*	southwestern spiny rush	CSD	36-60	36-60	M-L		X	X			X	X
Juncus bolanderi	Bolander's rush	CA	12-36	12+	W			X				X
Juncus covillei	Coville's rush	CA	6-12	12+	W			X				X
Juncus effusus var. *austrocalifornicus*	Pacific rush	CSD	24-60	12-24	M		X	X			X	X
Juncus mexicanus	Mexican rush	CSD	12-24	12-24+	M-L		X	X			X	X

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Botanical Name	Common Name	Native Status	Height (inches)	Spread (inches)	Irrigation	Short Meadow	Tall Meadow	Fresh Water Wetland	Salt Marsh	Shade	Part Shade	Full Sun
Juncus patens	California gray rush	SD	18-36	12-24	M-L		X				X	X
Juncus phaeocephalus	brown-headed rush	SD	6-24	12+	R-M		X	X				X
Juncus xiphioides	flat-leaf rush	CSD	18-36	12+	W			X				X
Schoenoplectus acutus var. *occidentalis*	common tule	CSD	36-160	60+	W			X	X			X
Schoenoplectus californicus	southern bulrush	CSD	36-160	60+	W			X				X
Schoenoplectus pungens var. *longispicatus*	common three-square bulrush	CSD	12-36	36+	W			X				X
True Grasses												
Agrostis pallens	seashore bent grass	SD	2-24	12+	M-L	X						X
Aristida purpurea	purple three awn	SD	12-36	24	L		X					X
Bromus carinatus	California brome	CSD	18-36	24-36	L		X				X	X
Distichlis spicata	salt grass	CSD	6-30	36+	L	X						X
Elymus condensatus 'Canyon Prince'	San Miguel Island giant wildrye	CA	24-36	36-48	L		X				X	X
Elymus glaucus	blue wildrye	SD	12-18	18-24	L		X				X	X
Elymus triticoides	creeping wildrye	CSD	24-48	24+	M-L		X				X	X
Festuca californica	California fescue	SD	36-48	12-18	M-L		X				X	X
Festuca rubra	red fescue	SD	6-12	12+	M-L	X				X	X	X
Hordeum brachyantherum	meadow barley	CSD	24-36	24	M-L		X				X	X
Koeleria macrantha	junegrass	CSD	12-18	8-12	L	X					X	X
Melica imperfect	melic	CSD	18-36	12	M-L		X				X	X
Muhlenbergia rigens	deergrass	SD	36-48	36-48	M-L		X				X	X
Sporobolus airoides	alkali sacaton	CSD	24-36	24-36	M-L		X					X
Stipa lepida	foothill needlegrass	CSD	12-18	8-12	L	X					X	X
Stipa pulchra	purple needlegrass	CSD	12-24	8-12	L		X				X	X

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F.6 Ground Covers

Botanical Name	Common Name	Native Status	Height (inches)	Spread (inches)	Irrigation	Flower Color	Flowering Season	Fruit Color	Evergreen	Deciduous	Shade	Part Shade	Full Sun
Abronia maritima	red sand verbena	CSD	3-6	18-24	M-L	wine red	Feb-Oct	n/a	X				X
Abronia umbellata	pink sand verbena	CSD	3-6	18-24	M-L	pink	all year	n/a	X				X
Arctostaphylos edmunsii 'Carmel Sur'	Carmel Sur manzanita	CA	4-18	48-72	M	white	Dec-Feb	Red	X			X	X
Arctostaphylos hookeri 'Monterey Carpet'	Monterey carpet manzanita	CA	8-18	48-72	M	white	Feb-Mar	Orange-Red	X			X	X
Arctostaphylos x 'Emerald Carpet'	emerald carpet manzanita	Cv	4-8	36-60	M	white	Dec-Feb	n/a	X			X	X
Arctostaphylos x 'Indian Hill'	Indian Hill manzanita	Cv	12-24	48-60	M-L	white	Dec-Feb	Red	X				X
Arctostaphylos x 'John Dourley'	Dourley's manzanita	Cv	18-36	48-72	M-L	light pink	Jan-Mar	Red	X				X
Artemisia californica 'Canyon Gray'	Canyon Gray Coastal sagebrush	CA	6-12	36-60	M-L	insignificant	n/a	n/a	X				X
Baccharis pilularis 'Pigeon Point'	Pigeon Point Coyote Brush	CA	18-36	72-144	M-L	insignificant	n/a	n/a	X				X
Berberis aquifolium 'Compacta'	compact Oregon grape	CA	24-36	24+	M	yellow	Jan-Apr	deep blue	X			X	X
Berberis aquifolium var. *repens*	creeping Oregon grape	CA	24-36	24+	M-L	yellow	Jan-Apr	deep blue	X			X	X
Ceanothus griseus var. *horizontalis*	Carmel creeper	CA	24-36	60+	M-L	blue	Feb-Jun	n/a	X				X
Epilobium canum	California fuchsia	SD	6-30	12-48	M-L	orange-red	Jun-Dec	n/a		X			X
Erigeron glaucus	seaside aster	CA	8-12	24-36	M-L	lavender	May-Jul	n/a	X				X
Eriogonum fasciculatum 'Dana Point'	Dana Point buckwheat	CA	12-18	36-48	L	buff	May-Aug	deep brown	X			X	X
Grindelia stricta var. *playphylla*	spreading gum plant	CA	24-36	48-72	M-L	yellow	May-Nov	n/a	X				X
Iris douglasiana	coast iris	CA	8-18	24-72	M-L	purple-white	Mar-Apr	n/a	X			X	X
Iris 'Pacific Coast Hybrids'	PCH iris	Cv	12-24	12-36	M-L	many colors	Mar-Apr	n/a	X			X	X
Iva hayesiana	San Diego marsh-elder	CSD	36	36	M-L	insignificant	n/a	n/a	X			X	X
Salvia leucophylla 'Point Sal Spreader'	Point Sal purple sage	CA	24-36	72+	L	lavender pink	Feb-May	n/a	X				X
Salvia mellifera 'Terra Seca'	Terra Seca sage	CA	12-24	36-60	L	light blue	Apr-Jun	n/a	X				X
Salvia mellifera x *S. sonomensis* 'Mrs. Beard'	Mrs. Beard's sage	Cv	6-12	24-48	L	blue	Apr-Aug	n/a	X				X
Salvia sonomensis x *S. clevelandii* 'Bee's Bliss'	Bee's bliss sage	Cv	6-12	36-60	L	lavender	Apr-Jul	n/a	X				X

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F.7 Shrubs

Botanical Name	Common Name	Native Status	Height (feet)	Spread (feet)	Irrigation	Flower Color	Flowering Season	Fruit Color	Clipped or Formal Hedge	Informal Screen	Specimen	Evergreen	Summer/Stress Deciduous	Winter Deciduous	Shade	Part Shade	Full Sun
Arctostaphylos bakeri 'Louis Edmunds'	Louis Edmunds' manzanita	CA	4-6	4-6	M	bright pink	Mar-May	mahogany		X		X					X
Arctostaphylos densiflora 'Harmony'	harmony manzanita	CA	2-3	4-6	M	soft pink	Jan-Mar	mahogany	X	X		X					
Arctostaphylos densiflora 'Howard McMinn'	McMinn manzanita	CA	4-6	5-8	M	soft pink	Jan-Mar	mahogany	X	X		X					X
A. densiflora. 'Sentinal'	sentinal manzanita	CA	6-8	4-8	M	soft pink	Jan-Mar	mahogany	X	X		X					X
Arctostaphylos edmunsii	Little Sur manzanita	CA	1-2	8-12	M	white	Feb-Apr	mahogany				X					X
Arctostaphylos glandulosa subsp. *crassifolia*	Del Mar manzanita (A federally endangered local species, in cultivation. Purchase from a certified grower.)	CSD	2-3	3-6	L	soft pink	Jan-Mar	mahogany		X		X					X
Arctostaphylos hookeri	Monterey manzanita	CA	2-3	4-8	M-L	white	Feb-Mar	mahogany				X				X	X
Arctostaphylos manzanita	Parry manzanita	CA	6-20	6-15	M-L	white	Dec-Mar	mahogany		X	X	X					X
Arctostaphylos pajaroensis	Pajaro manzanita	CA	6-8	6-10	M-L	pink	Nov-Feb	mahogany		X		X					X
Arctostaphylos purissima	La Purissima manzanita	CA	2-3	3-6	M-L	pure white	Dec-Feb	mahogany				X				X	X
Arctostaphylos rudis	shagbark manzanita	CA	3-6	4-8	L	white	Dec-Feb	mahogany	X			X					X
Arctostaphylos obispoensis	serpentine manzanita	CA	6-15	6-10	L	white	Jan-Mar	mahogany				X					X
Arctostaphylos hybrid cultivars*																	
Arctostaphylos x 'Austin Griffiths'	Griffith's manzanita	Cv	8-12	6-8	M-L	soft pink	Dec-Feb	mahogany	X	X	X	X					X
Arctostaphylos x 'Indian Hill'	Indian Hill manzanita	Cv	1-2	4-5	M-L	white	Dec-Feb	red				X					X
Arctostaphylos x 'John Dourley	Dourley's manzanita	Cv	1.5-3	4-6	L	light pink	Jan-Mar	red				X					X

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Arctostaphylos x 'Sunset' (A natural hybrid of *A. hookeri* and *A. pajaroensis* from Monterey County)	sunset manzanita	CA	6-8	8-10	M-L	white	Dec-Mar	mahogany	X		X	X					X
Arctostaphylos x 'White Lanterns'	white lanterns manzanita	Cv	4-6	6-8	M-L	white	Jan-Apr	mahogany	X		X	X					
Arctostaphylos x 'Winterglow'	winterglow manzanita	Cv	2-3	4-6	M-L	white	Dec-Feb	mahogany	X			X					X
Artemisia californica	coastal sagebrush	CSD	2-4	4	L	light yellow	Aug-Sep	brown					X				X
Artemisia palmeri	Palmer's sagewort	CSD	3-6	6	L	light yellow	Jul-Aug	brown					X			X	X
Atriplex canescens	four-wing saltbush	CSD	3-6	6	L	light yellow	Jun-Sep	chartreuse	X			X					X
Atriplex lentiformis	big saltbush	CSD	6-10	6-10	L	light yellow	Jul-Oct	tan tinged pink	X	X		X					X
Baccharis pilularis subsp. consanguinea	coyote Brush	CSD	4-8	4-8	L	white	Jul-Sep	white	X	X		X					X
Baccharis sarothroides	broom baccharis	CSD	3-6	3-6	L	white	Jun-Aug	white		X		X					X
Bahiopsis laciniata	San Diego goldeneye	CSD	2-4	2-4	L	golden yellow	Feb-Aug	brown					X				X
Berberis aquifolium	Oregon grape	CA	4-8	4 +	M	yellow	Dec-Mar	metallic blue		X		X				X	X
Berberis x 'Golden Abundance'	golden abundance Oregon grape	Cv	4-6	4 +	M	golden yellow	Dec-Mar	metallic blue		X	X	X				X	X
Berberis pinnata	California holly grape	SD	4-8	4 +	L	yellow	Feb-Apr	dark blue		X	X	X				X	X
Brickellia californica	California brickellbush	CSD	2-6	2-6	L	white	Jul-Dec	white				X					X
Carpenteria californica	California bush anemone	CA	6-10	6-10	M	white	May-Jul	brown		X	X	X				X	X
Ceanothus cuneatus var. *rigidus* 'Snowball'	snowball Monterey ceanothus	CA	2-4	6-10	M-L	white	Mar-Apr	brown				X					X
Ceanothus griseus 'Louis Edmunds'	Louis Edmonds' Carmel ceanothus	CA	6	20	M-L	blue	Feb-Apr	brown	X			X					X
Ceanothus griseus 'Santa Ana'	Santa Ana Carmel ceanothus	CA	5-8	6-10	M-L	dark blue	Feb-Apr	brown				X					X
Ceanothus maritimus	Hoover ceanothus	CA	3-6	4-8	M-L	violet	Jan-Mar	brown				X					X

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Ceanothus oliganthus var. *sorediatus*	Hoover Jim brush	SD	5-15	10-15	L	blue	Feb-Mar	brown		X	X	X					X
Ceanothus purpureus	hollyleaf ceanothus	CA	3-6	4-10	M-L	violet-purple	Feb-Mar	brown				X					X
Ceanothus thrysiflorus	blue blossom	CA	6-20	10-20	M-L	blue	Feb-May	brown		X		X				X	X
Ceanothus thrysiflorus 'Skylark'	Skylark blue blossom	CA	4-6	9-12	M-L	blue	Apr-Jun	brown	X	X	X	X				X	X
Ceanothus thrysiflorus 'Snow Flurry'	snow flurry wild lilac	CA	9-12	9-12	M-L	white	Feb-Apr	brown		X	X	X				X	X
Ceanothus tomentosus	Ramona lilac	SD	6-8	6-8	L	blue	Feb-Apr	brown		X		X					X
Ceanothus verrucosus	warty-stem ceanothus	CSD	8-12	8-12	L	white	Jan-Mar	brown		X		X					X
Ceanothus hybrid cultivars*																	
Ceanothus x 'Concha'	concha wild lilac	Cv	4-6	6-9	M-L	cobalt blue	Feb-Apr	brown		X	X	X					X
Ceanothus x 'Dark Star'	dark star wild lilac	Cv	4-6	7-10	L	cobalt blue	Feb-Apr	brown		X	X	X					X
Ceanothus x 'Frosty Blue'	frosty blue wild lilac	Cv	8-12	8-12	M-L	blue	Mar-May	brown		X	X	X					X
Ceanothus x 'Joyce Coulter'	Joyce Coulter wild lilac	Cv	3-6	10-15	M-L	blue	Feb-May	brown	X			X					X
Ceanothus x 'Julia Phelps'	Julia Phelps wild lilac	Cv	4-8	8-12	L	cobalt blue	Feb-Apr	brown			X	X					X
Ceanothus x 'Ray Hartman'	Ray Hartman wild lilac	Cv	12-20	12-20	M-L	blue	Mar-May	brown		X	X	X					X
Ceanothus x 'Sierra Blue'	Sierra blue wild lilac	Cv	12-20	12-20	L	vivid blue	Mar-Apr	brown		X	X	X					X
Ceanothus x 'Wheeler Canyon'	Wheeler Canyon wild lilac	Cv	3-6	6-12	M-L	cobalt blue	Mar-May	brown		X	X	X					X
Cercocarpus betuloides var. *betuloides*	birch-leaf mountain mahogany	SD	3-10	3-6	L	insignificant	Mar-May	white feathers	X	X		X					X
Cercocarpus betuloides var. *blancheae*	island mountain mahogany	CA	10-20	10	L	insignificant	Apr-May	white feathers	X	X	X	X					X
Comarostaaphylis diversifolia subsp. *diversifolia*	summer holly	SD	12-20	15-20	L	white	May-Jun	red		X	X	X					X
Cornus sericea subsp. *occidentalis*	creek dogwood	SD	6-15	6 +	R	cream bright red stems	May-Jul	white to cream		X				X		X	X
Dendromecon harfordii	island bush poppy	CA	8-15	8-15	M-L	yellow	Apr-Jul+	brown	X	X	X	X					X

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Dendromecon rigida	bush poppy	SD	8-10	4-8	L	yellow	Apr-Jun	brown		X		X					X
Ericameria palmeri	Palmer's goldenbush	CSD				yellow	Sep-Nov	brown		X		X					
Eriogonum arborescens	Santa Cruz Island buckwheat	CA	2-8	2-8	L	white to pink	Apr-Oct	tan		X	X	X					X
Eriogonum cinereum	ashyleaf buckwheat	CA	2-6	2-6	L	white-pink	all year	tan				X					X
Eriogonum fasiculatum subsp. *fasiculatum*	coast California buckwheat	CSD	2-4	4	L	white	Mar-Jun	tan		X			X				X
Eriogonum giganteum	St. Catherine s lace	CA	6-10	8-12	L	white to rose	Feb-Sep	tan		X	X	X					X
Eriogonum latifolium	coast buckwheat	CA	1-2	4-6	L	white to rose	Feb-Sep	tan			X	X					X
Frangula californica	California coffeeberry	SD	6-12	6-12	L	yellow-green	May-Jul	red-purple	X	X	X	X					X
Frangula californica 'Eve Case'	Eve Case coffeeberry	CA	3-6	3-6	M-L	yellow-green	May-Jul	red-purple	X	X	X	X				X	X
Frangula californica 'Mound San Bruno'	Mound San Bruno coffeeberry	CA	3-6	3-6	M-L	yellow-green	May-Jul	red-purple	X	X	X	X				X	X
Frangula californica subsp. *tomentella*	hoary coffeeberry	SD	12-18	12-18	L	green-yellow	May-Jul	deep red-purple	X	X	X	X					X
Fremontodendron mexicanum	California flannel bush	SD	8-20	12-20	L	gold	Mar-Jun	brown	X	X	X	X					X
Fremontodendron x 'California Glory'	California glory flannel bush	Cv	12-18	8-12	L	yellow	Mar-Jul	brown	X	X	X	X					X
Fremontodendron x 'San Gabriel'	San Gabriel flannel bush	Cv	12-18	12-20	L	gold	Mar-Jul	brown	X	X	X	X					X
Gambelia speciosa	showy island snapdragon	CA	2-3	3-6	M-L	red	Mar-Jun	insignificant	X	X	X	X			X	X	X
Garrya fremontii	Fremont silk tassel	SD	5-10	5-10	L	silver	Jan-Apr	gray	X	X		X					X
Garrya veatchii	canyon silktassel	SD	4-6	4-6	L	silver	Feb-Apr	gray	X	X		X					X
Heteromeles arbutifolia	toyon	CSD	6-20	6-20	M-L	cream	Jun-Aug	bright red or gold	X	X	X	X				X	X
Keckiella antirrhinoides	yellow bush penstemon	SD	3-6	3-6	L	yellow	Apr-Jun	insignificant	X	X			X				X
Keckiella cordifolia	heartleaf keckiella	SD	4-6 +	6-8 +	M-L	orange red	May-Jul	insignificant			X		X			X	X

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Lupinus albifrons	silver bush lupine	SD	4-8	4-8	L	violet to lavender	Mar-Jun	brown		X	X		X				X
Lupinus arboreus	tree lupine	CSD	3-7	3-7	L	yellow	Apr-Jul	brown		X	X	X					X
Lycium andersonii	waterjacket boxthorn	CSD	4-6	6-8	L	pale violet	Mar-May	orange-red		X			X				X
Lycium californicum	coast desert-thorn	CSD	3-5	5-8	M-L	white	Mar-Aug	bright red		X			X				X
Malacothamnus fasiculatus	chaparral mallow	CSD	6-10	6+	L	pink	May-Jul	brown		X			X				X
Malacothamnus palmeri var. *involucratus*	Carmel Valley bush mallow	CA	6-8	6-8	L	white	Feb-Jun	brown		X	X	X					X
Malosma laurina	laurel leafed sumac	CSD	10-20	10-20	L	cream	Jun-Jul	cream		X	X	X					X
Malva assurgentiflora	malva rose	CA	5-10	5-10	L	rose-purple	Apr-Jun	brown	X	X	X		X			X	X
Ornithostaphylos oppositifolia	Baja California birdbush	SD	6-8	8-12	L	white	Jan-Apr	mahogany		X	X	X					X
Peritoma arborea	bladderpod	CSD	3-6	2-4	L	yellow	all year	light brown		X			X				X
Philadelphus lewisii	wild mock-orange	CA	6-10	6-10	M-L	white	Apr-Jun	brown		X	X			X		X	
Pluchea sericea	arroweed	CSD	10-15	10+	M-L	pink	Mar-Jul	light brown	X	X		X					X
Prosopis glandulosa var. *torreyana*	honey mesquite	SD	10-15	15	L	yellow	Apr-Aug	brown			X			X			X
Prunus ilicifolia subsp. *ilicifolia*	holly-leaf cherry	SD	10-20	10	L	cream	Apr-May	red-purple	X	X		X					X
Quercus dumosa	Nuttall's scrub oak	CSD	10-20	10-20	L	green	Mar-May	green-brown			X	X					X
Rhamnus crocea	redberry	CSD	3-6	3-6	L	green-yellow	Jan-Apr	bright red		X	X	X				X	X
Rhamnus ilicifolia	holly-leaf redberry	SD	8-15	8-15	L	green-yellow	Mar-Jun	red	X	X	X	X				X	X
Rhus integrifolia	lemonade berry	CSD	3-15	15+	L	white-pink	Feb-May	red	X	X	X	X				X	X
Rhus ovata	sugar berry	SD	12-18	12-18	L	pink-red	Mar-May	red	X	X	X	X					X
Ribes aureum var. *gracillimum*	golden currant	SD	3-6	3-4	M	yellow	Feb-May	blue-black		X	X			X		X	X
Ribes indecorum	white-flowered currant	SD	4-6-	3-4	L	white	Dec-Mar	blue-black		X	X		X			X	X
Ribes malvaceum	chaparral currant	SD	4-8	3-6	L	pink	Nov-Apr	blue-black		X	X		X			X	X
Ribes sanguineum var. *glutinosum*	pink-flowered currant	CA	4-8	3-6	M-L	pink	Feb-Apr	blue-black		X	X			X		X	X

Key to native status: CSD, coastal southwest San Diego County; SD, species native to San Diego County; CBC, north coastal Baja California (within the California Floristic Province) CA, plants native to California; Cv, Plant cultivars derived from California hybrids of native species. Cultivar selections of wild plants are listed as SD or CA, depending on where the selections were originally made. Key to irrigation: R, regular watering to keep soil moist; M, moderate to occasional watering applied deeply and allowed to dry between irrigations; L, infrequent to no irrigation needed except during winter drought. Spread: x+ indicates spread after 1-3 years, but the species is known to grow larger over time

Notes on shrubs: Many native species and cultivars are tolerant of some water during the summer months. However, almost universally, this will shorten their lives, sometimes by decades. In San Diego, unless otherwise noted, the only irrigation that most native shrubs need is during winter drought and during a 1-2 year period of establishment. If planted in the fall and occasionally irrigated during winter-spring dry spells, the plants should be able to survive and thrive without any further irrigation, including drip. Drought tolerance is enhanced by mulching plants with up to 3 inched of wood-chip mulch. Avoid mulching within 3 inches of the base of the trunk.

**There are many (presumably hybrid) cultivars of both Ceanothus and Arctostaphylos available in the San Diego region. In landscape situations, these may be preferable because of greater garden tolerance. They tend to be a little more accepting of dry season water, so they tend to integrate more successfully when combined with non-natives that have moderate water needs. Still, most will be shorter lived with increasing dry season irrigation.*

*** Most species of Salvia native to California are naturally summer/stress deciduous. In the landscape, Salivas will retain foliage during the dry season with a deep irrigation every 4-6 weeks. More frequent irrigation will substantially reduce their life-span.*

Botanical Name	Common Name	Native Status	Height (feet)	Spread (feet)	Irrigation	Flower Color	Flowering Season	Fruit Color	Clipped or Formal Hedge	Informal Screen	Specimen	Evergreen	Summer/Stress Deciduous	Winter Deciduous	Shade	Part Shade	Full Sun
Ribes speciosum	fuchsia-flowered gooseberry	SD	4-6	6-8	L	bright red	Jan-May	red		X	X		X			X	X
Ribes viburnifolium	Catalina currant	CSD	2-3	3-6	M-L	red-purple	Feb-Apr	red	X	X		X			X	X	
Salix exigua	sandbar willow	CSD	10-15	10-15	M	green-yellow	Feb-May	green-white		X				X			X
Salix lasiolepis	arrow willow	CSD	15-30	15-30	M	green-yellow	Jan-Mar	green-white		X	X			X			X
*Salvia apiana***	white sage	CSD	3-5	5	L	white	Apr-Aug	light brown		X	X		X				X
*Salvia brandegeei***	Brandeeg's sage	CBC	3-6	6	L	blue	Feb-Aug	light brown		X	X		X				X
*Salvia clevelandii***	fragrant sage	CSD	3-5	5	L	deep blue	Apr-Jul	dark brown		X	X		X				X
Salvia clevelandii 'Winifred Gilman**	Winifred Gilman's sage	CA	2-3	3	L	deep blue	Apr-Jul	dark brown		X	X	X					X
*Salvia leucophylla***	purple sage	CSD	4-6	6+	L	pink-lavender	Apr-Jun	light brown	X	X	X		X				X
*Salvia mellifera***	black sage	CSD	3-6	6	L	white-light blue	Mar-Jun	light brown	X	X	X		X				X
*Salvia munzii***	San Miguel Mountain sage	SD	3-6	6	L	light blue	Jan-May	light brown		X	X		X				X
Salvia clevelandii x *S. leucophylla* hybrids																	
Salvia x 'Allen Chickering**	Allen Chickering sage	Cv	4-6	6-8	L	sky blue	Apr-Jun	dark brown		X	X		X				X
Salvia x 'Aromas**	Ken Taylor's sage	Cv	4-6	6-8	L	bright blue	Apr-Jun	dark brown		X	X		X				X
Salvia x 'Whirley Blue**	Whirley Blue sage	Cv	4-6	6-8	L	bright blue	Apr-Jun	dark brown		X	X		X				X
Sambucus nigra subsp. *caerulea*	blue elderberry	CSD	10-20	10-20	M-L	cream	Mar-Sep	blue-black			X			X			X
Simmondsia chinensis	jojoba	CSD	3-6	3-6	L	yellow	Mar-May	green-brown	X	X	X	X					X
Styrax redivivus	snowdrop bush	SD	5-12	5-12	M-L	white	Apr-Jun	light brown		X	X			X		X	X
Trichostema lanatum	woolly blue curls	SD	2-3	2-3	L	magenta-violet	Apr-Jul	light brown		X	X	X					X
Venegasia carpesioides	canyon sunflower	CSD	2-5	2-5	M-L	yellow	Feb-Jul	dark brown		X	X		X		X	X	
Xylococcus bicolor	mission manzanita	CSD	6-10	6-10	L	white	Dec-Feb	mahogany		X	X	X					X

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Notes on shrubs: Many native species and cultivars are tolerant of some water during the summer months. However, almost universally, this will shorten their lives, sometimes by decades. In San Diego, unless otherwise noted, the only irrigation that most native shrubs need is during winter drought and during a 1-2 year period of establishment. If planted in the fall and occasionally irrigated during winter-spring dry spells, the plants should be able to survive and thrive without any further irrigation, including drip. Drought tolerance is enhanced by mulching plants with up to 3 inched of wood-chip mulch. Avoid mulching within 3 inches of the base of the trunk.

**There are many (presumably hybrid) cultivars of both Ceanothus and Arctostaphylos available in the San Diego region. In landscape situations, these may be preferable because of greater garden tolerance. They tend to be a little more accepting of dry season water, so they tend to integrate more successfully when combined with non-natives that have moderate water needs. Still, most will be shorter lived with increasing dry season irrigation.*

*** Most species of Salvia native to California are naturally summer/stress deciduous. In the landscape, Salivas will retain foliage during the dry season with a deep irrigation every 4-6 weeks. More frequent irrigation will substantially reduce their life-span.*

F.8 Climbers

Botanical Name	Common Name	Native Status	Height	Spread	Irrigation	Shade	Part Shade	Full Sun
Aristocratic californica	California dutchman's pipe	CA	12 +	12 +	M-L	X	X	X
Calistegia macrostegia	California morning glory	CSD	6-30	30 +	M-L			X
Clematis lasiantha	chaparral clematis	SD	18	18 +	L		X	X
Lonicera hispidula	California honeysuckle	SD	6-18	6-18	M-L	X	X	X
Lonicera subspicata var. subspicata	southern honeysuckle	CSD	3-8	3-8	L		X	X
Vitis girdiana	desert wild grape	SD	30	30 +	M-L		X	X

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F.9 Trees

Botanical Name	Common Name	Native Status	Height	Spread	Irrigation	Shade	Part Shade	Full Sun
Alnus rhombifolia	white alder	SD	30-60	30-45	R-L		X	X
Chilopsis linearis	desert willow	SD	20-40	20-40	L			X
Lyonothamnus floribundus subsp. *asplenifolius*	Santa Cruz Island ironwood	CA	30-60	20-30	L		X	X
Pinus quadrifolia	four-needle pinyon	SD	10-30	10-20	L			X
Pinus torreyana	Torrey pine	CSD	30-50	20-40	L			X
Platanus racemosa	California sycamore	CSD	50-100	30-50	R-M			X
Prunus ilicifolia subsp. *lyonii*	Catalina cherry	CA	30-45	15-25	M-L			X
Quercus agrifolia	coast live oak	CSD	60-90	60-120	L			X
Quercus chrysolepis	canyon live oak	SD	40-70	50-70	M-L		X	X
Quercus engelmannii	mesa blue oak	SD	20-40	30-50	L			X
Quercus tomentella	island oak	CA	20-40	20-30	L			X
Salix gooddingii	black willow	CSD	40-60	40-60	M			X
Salix laevigata	red willow	CSD	25-40	25-40	M			X
Umbellularia californica	California bay	SD	20-60	20-60	M		X	X

Key to native status: CSD, coastal southwest San Diego County; SD, species native to San Diego County; CA, plants native to California; Cv, Plant cultivars derived from California hybrids of native species. Cultivar selections of wild plants are listed as SD or CA, depending on where the selections were originally made. Key to irrigation: R, regular watering to keep soil moist; M, moderate to occasional watering applied deeply and allowed to dry between irrigations; L, infrequent to no irrigation needed except during winter drought. Spread: x+ indicates spread after 1-3 years, but the species is known to grow larger over time

F.10 Bioswale Plants

Bioswales within the transitional buffer areas serve the important ecological function of regulating water quality from stormwater runoff. The following table provides a guideline for species suitable for functional bioswales that fit ecologically within buffer areas. Refer to lists in this appendix, as indicated, for species details. Zone 1 is the bottom of the bioswales; Zone 2 are the sides of the bioswales; Zone 3 is the top of the bioswales. Species are arranged by zone. All species listed are native to coastal southwestern San Diego County.

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Species	Common Name	List	Zone
Carex spissa	San Diego sedge	Grass-like Plants (F5)	1
Eleochasis montevidensis	Dombey's spike rush	Grass-like Plants (F5)	1
Euthamia occidentalis	western goldenrod	Perennials (F2)	1
Juncus effusus var. austrocalifornicus	Pacific rush	Grass-like Plants (F5)	1
Juncus mexicanus	Mexican rush	Grass-like Plants (F5)	1
Juncus xiphioides	iris-leaf rush	Grass-like Plants (F5)	1
Schoenoplectus pungens var. longispicatus	common three-square	Grass-like Plants (F5)	1
Achillea millefolium	yarrow	Perennials (F2)	2
Ambrosia pumila	San Diego ambrosia	Perennials (F2)	2
Asclepias fasiculatum	narrow-leaf milkweed	Perennials (F2)	2
Carex barbarae	Barbara's sedge	Grass-like Plants (F5)	2
Disticlis spicata	salt grass	True Grasses (F5)	2
Elymus tritichoides	beardless wild-rye	True Grasses (F5)	2
Epilobium canum	California fuchsia	Perennials (F2)	2
Iva hayesiana	San Diego marsh-elder	Perennials (F2)	2
Juncus acutus subsp. leopoldii	southwestern spiny rush	Grass-like Plants (F5)	2
Pluchea odorata	salt-marsh fleabane	Perennials (F2)	2
Stipa pulchra	purple needlegrass	True Grasses (F5)	2
Artemisia californica	coastal sagebrush	Shrubs (F7)	3
Atrilpex canescens	four-wing saltbush	Shrubs (F7)	3
Baccharis sarothroides	broom baccharis	Shrubs (F7)	3
Camisonniopsis cheiranthifolia subsp. suffrutescens	beach evening-primrose	Perennials (F2)	3
Ericameria palmeri	Palmer's goldenbush	Perennials (F2)	3
Eriogonum fasciculatum var. fasiculatum	coast California buckwheat	Shrubs (F7)	3
Leptosyne maritima	sea dahlia	Perennials (F2)	3
Lycium californicum	coast desert thorn	Shrubs (F7)	3
Mirabilis laevis var. crassifolius	coastal wish-bone plant	Perennials (F2)	3
Peritoma arborea	bladderpod	Shrubs (F7)	3

F.11 Salt Marsh and Transition Zone Plants

Restoration of the Salt Marsh to Upland continuum demands an understanding of the placement of plants with respect to the *mean lower low water* (MLLW) measured as an elevation in feet. Plants listed at the lowest elevation endure salt water and inundation on a regular basis. Plants listed at the highest elevation are species that might receive salt water during the highest tidal events, perhaps once a year (Figure F-1). Upland species are members of the coastal sage scrub and maritime succulent scrub plant associations. Plant species listed here are local native species that are annuals, perennials and shrubs.

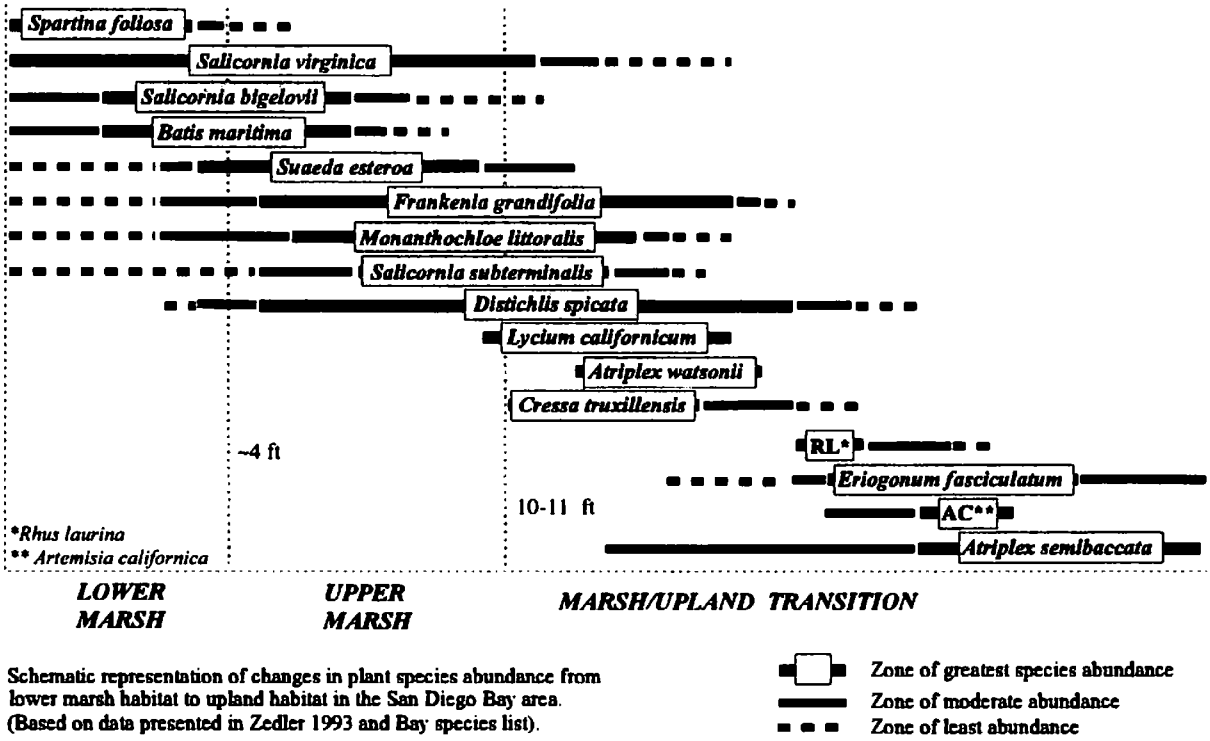

Figure F-1. Schematic of Salt Marsh Habitat and a sample of plant species associated with each zone.

Table F-1. Plant Species for salt marsh-upland transition zones (Sullivan and Noe 2001). Taxonomy is consistent with The Jepson Manual, 2nd Edition (Baldwin et al. 2012).

Botanical Name	Common Name	Plant Form	Height (feet)	Spread (feet)	Habitat*	Elevation Range (MLLW)
Artemisia californica	coast sagebrush	Shrub	2-4	4	UPT	10.0-12.0
Atriplex californica	California saltbush	Perennial	0.5	1.5	HM-UTP	5.8+
Atriplex canescens	fourwing saltbush	Shrub	3-6	6	UPT	10.0-12.0
Atriplex lentiformis	big saltbush	Shrub	6-10	6-10	UPT	10.0-12.0
Atriplex prostrata	fat-hen	Annual	1.5	1.5	FWT	5.5+
Atriplex watsonii	matscale	Perennial	0.4	3-6	HM	6.2-9.5
Arthrocnemum subterminale	Parish's pickleweed	Perennial	0.5-1.5	0.5-1.5	HM	5.8-10.3
Baccharis pilularis subsp. consanguinea	coyote brush	Shrub	4-8	4-8	UPT	10.0-12.0
Baccharis sarothroides	broom baccharis	Shrub	3-6	3-6	UPT	10.0-12.0
Batis maritima	saltwort	Perennial	0.5-1	0.5-1	MP	4.2-7.8
Chloropyron maritimum subsp. *maritimum*	salt marsh bird's-beak	Annual	0.5	1.0-1.5	MP-HM	5.0-9.7
Cressa truxillensis	alkali weed	Perennial	.75	3+	HM	5.8-9.9
Distichlis spicata	salt grass	Perennial grass	0.5-1.5	3+	MP-UTP	4.9+
Elymus tritichoides	beardless wild-rye	Perennial grass	1.5-4	3+	UPT	7.8+
Eriogonum fasiculatum var. *fasiculatum*	coast California buckwheat	Shrub	2-4	4	UPT	7.8+
Frankenia palmeri	Palmer's alkali heath	Shrub	1-1.5	3+	UPT	7.0+
Frankenia salina	alkali heath	Shrub	1-1.5	3+	MP-HM	5.2-7.5
Heliotropium curassavicum var. *oculatum*	seaside helioptrope	Perennial	.25	2.5+	UPT	1.3+
Hornungia procumbens	prostrate hutchinsia	Annual	.33	.33	HM-UPT	7.2-8.1
Isocoma menziesii	coast goldenbush	Perennial	2.5-4	1-1.5	UPT	8.0+
Jaumea carnosa	saltmarsh daisy	Perennial	.25-.65	3+	MP	4.5-7.0
Juncus acutus	southwestern spiny rush	Perennial	5	5	FWT	7.5+

Habitats: ST = subtidal; MP = marsh plain; HM = high marsh; FWT = freshwater transition; UPT = upland transition

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Table F-1. Plant Species for salt marsh-upland transition zones (Sullivan and Noe 2001). Taxonomy is consistent with The Jepson Manual, 2nd Edition (Baldwin et al. 2012).

Botanical Name	Common Name	Plant Form	Height (feet)	Spread (feet)	Habitat*	Elevation Range (MLLW)
Juncus bufonius	toad rush	Annual	.25	.25	FWT	7.2+
Lasthenia glabrata subsp. *coulteri*	Coulter's goldfields	Annual	0.1-0.5	0.1-0.5	HM	6.8-10.0
Limonium californicum	sea lavender	Perennial	1-2.5	2+	MP-HM	4.5-7.6
Lycium californicum	coast desert-thorn	Shrub	3-5	5-8	HM-UPT	7.0+
Malosma laurina	laurel leafed sumac	Shrub	10-20	10-20	UPT	7.8+
Monanthochloe littoralis	shoregrass	Perennial grass	0.5-1	3+	MP-HM	5.0-10.2
Ruppia maritima	ditch-grass	Perennial grass	.5	3+	ST-FWT	0.0
Salicornia bigelovii	annual pickleweed	Annual	0.5-1.5	0.5-1.5	MP	4.5-7.2
Salicornia depressa	glasswort	Annual	0.5-1.0	0.5-1.0	HM	5.1-9.5
Salicornia pacifica	pickleweed	Perennial	1-3	1-2	MP-HM	4.2-9.2
Spartinia foliosa	California cordgrass	Perennial	3-4.5	1.5-4.5	MP	4.1-6.3
Spergularia macrotheca	large-flowered sand-spurry	Perennial	0.25-1	0.5-1.5	HM-UPT	6.7+
Spergularia marina	salt marsh sand spurry	Perennial	0.25-1	0.5-1.5	HM-UPT	6.4+
Suaeda calceoiformis	horned sea-blite	Annual	1.5	1.5	MP-HM	7.2+
Suaeda esteroa	sea-blight	Perennial	3	3	MP-HM	4.6-7.0
Suaeda nigra	bush seepweed	Perennial	3-4	3-4	UPT	7.8+
Suaeda taxifolia	woolly sea-blight	Perennial	3-4	3-4	UPT	6.8+
Triglochin concinna	arrow-grass	Perennial	0.5-1	1+	MP	5.2-6.8
Zostera marina	eelgrass	Perennial marine grass	3-9	3+	ST	-8.0-0.0

Habitats: ST = subtidal; MP = marsh plain; HM = high marsh; FWT = freshwater transition; UPT = upland transition

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Appendix G: Energy Efficiency Requirements

This appendix contains a copy of Exhibit 3 to the MMRP focusing on Energy Efficiency requirements for the CVBMP.

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EXHIBIT 3 to the Mitigation Monitoring and Reporting Program for the Chula Vista Bayfront Master Plan

Exhibit 3 outlines the metholodogies for determing that the goals of the Energy Section are met. The Sample Worksheets are for illustration purposes, to provide a format which may be used both by Developments and by the City of Chula Vista's Building Department. Note that the Energy Section outlines requirements and approaches for projects which will be subject to future codes, regulations, tariffs, and technologies, all of which are subject to change. When clarifications are needed, they will be provided by the City of Chula Vista.

Baseline. The term "Baseline" refers to the amount of energy against which the energy reduction will be measured.

SAMPLE Worksheets. Sample worksheets are provided as suggested approaches. Actual worksheets for calculating the energy requirements should be coordinated with the City of Chula Vista Building Department.

Title 24 Path. Title 24 language refers to the "Standard Budget" and "Proposed Budget." The Whole Building Performance Method, which generates the Standard and Proposed Energy Budgets, is specifically for energy uses within a conditioned building, and does not include lighting which is in Interior Unconditioned Spaces or lighting which is outside. However, for the purposes of the Energy Section, this lighting energy will be added to the energy budgets for the conditioned building, and the combined energy uses will become the Baseline for the "Title 24 Path." Each of the various energy uses will be converted into Site kBtu, except for the final 5% energy reduction waiver allowed for Ongoing Measurement and Verification.

LEED Path. LEED language refers to the "Baseline Design" and "Proposed Design." The LEED Path Baseline is likely to be different and higher than the Title 24 Path Baseline because LEED counts all of the energy uses within the site boundary, some of which are not counted by Title 24. However, LEED is also likely to be better and more comprehensive in calculating overall energy performance features, such as district thermal plants, combined heat and power, natural ventilation, efficiencies in process loads, aggregating multiple buildings, and the benefits of renewable energy. Each of the various energy uses will be converted into dollars ($), except for the final 5% energy reduction waiver allowed for Ongoing Measurement and Verification.

If the LEED Path is chosen, the Development may be subject to an additional fee to the City of Chula Vista for a 3rd party plan check by an experienced LEED reviewer acceptable to the City. Recognizing that LEED Templates may not be complete at the time of the initial Building Department submittals, draft Templates may be used, at the discretion of the reviewer.

Natural Ventilation. When using Natural Ventilation (NV) to qualify as an energy reduction feature, the Development may qualify for a waiver of up to 10% if at least 75% of the area that would normally be cooled relies solely on natural ventilation strategies to help maintain comfortable temperatures. Pro-rations are possible.

City of Chula Vista Sponsored Energy Efficiency Program. Refer to the appropriate City ordinances for details on this program.

Measurement and Verification. Each Development shall develop and implement an ongoing Measurement and Verification (M&V) Plan consistent with the International Performance Measurement and Verification Protocol (IPMVP) Volume III, Concepts and Options for Determining Energy Savings in New Construction, April 2003. The Development may choose either Option B or Option D. If the LEED Path is chosen, the M&V Plan should be consistent with Credit EAc5, except that LEED only requires one year of implementation, and the Energy Section of this Agreement requires M&V to be ongoing.

Demand Response Tariffs. Developments which enroll in SDG&E Demand Response rate tariff(s) which are designed to reduce the load on the electric grid during critical times may be awarded up to a 5% waiver.

EXHIBIT 3

SAMPLE Worksheet A: Title 24 Path

Name: Example Development

Description[1]	Source of Info (Attachments)	Input Standard	Input Proposed	Typical Units of Measure	Convert to Site kbtu	Standard = Baseline	Proposed	Units	Minimum % Reduction	Actual % Reduction
15.2.1 MINIMUM EFFICIENCY										
Title 24 Whole Building Performance	T24 UTIL-1, Part 1			Source TDV kbtu/sf-yr					15%	
15.2.2 CALCULATE BASELINE AND REDUCTIONS										
A. Energy Uses										
T24 Electricity	T24 UTIL-1, Part 2			Site KWH/year	3.413	-	-	kBtu		
T24 Gas	T24 UTIL-1, Part 2			Site Therms/year	100.000	-	-	kBtu		
T24 Lighting Outside and Uncond	Worksheet A-LTG	-	-	Site KWH/year	3.413	-	-	kBtu		
A. Summary of Efficiency of End Uses						-	-	kBtu		
B. Renewable Energy Contributions										
PV: within Development	CSI calculation or PV-Watts[2]	n/a		Site KWH output/year	3.413	n/a	-	kBtu		
PV: Credited from Project		n/a		Site KWH output/year	3.413	n/a	-	kBtu		
Solar Thermal: within Development	F-Chart or equal	n/a		Site kbtu offset/year	1.000	n/a	-	kBtu		
Other	as appropriate	n/a		as appropriate		n/a				
B. Combined Renewable Reductions										
C. Natural Ventilation	Worksheet C						0% to 10%			
D. Chula Vista Program Savings	Confirm with Program Administrator									
Verified Electricity Savings		n/a		Site KWH	3.413		-	kBtu		
Verified Gas Savings		n/a		Site Therms	100.000		-	kBtu		
D. CV Program Combined Reduction										
E. Ongoing Measure & Verify	Worksheet E						Required			
F. Demand Response Tariff	Worksheet F						0% to 5%			
TOTAL REDUCTION FROM BASELINE (Must be at least 50% Reduction)										**0.0%**

NOTES TO WORKSHEET A

Note 1: If the Development includes more than one building, then use multiple Worksheets, or, add backup calculations or line items to this spreadsheet, as most appropriate.

Note 2: Final photovoltaic design and output informatio shall use industry standard software, including at least site location, array orientation, array tilt, and system efficiency. California Solar Initiative (CSI) rebate calculations and PV-Watts are examples of acceptable software.

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EXHIBIT 3

Worksheet A-LTG: Lighting Outside and in Interior Unconditioned Spaces

Name: Example Development

Category[1]	Source of Info (Attachments)	T24 Allowed Watts	Proposed Watts	Occupancy	Average hours	Days /year	Hours /year	Standard KWH/yr	Proposed KWH/yr
Unconditioned spaces	T24 LTG Forms						-	-	-
Unconditioned spaces	T24 LTG Forms						-	-	-
Unconditioned spaces	T24 LTG Forms						-	-	-
Unconditioned spaces	T24 LTG Forms						-	-	-
Unconditioned spaces	T24 LTG Forms						-	-	-
General Site Illumination (Tradable)	T24 OLTG Forms						-	-	-
General Site Illumination (Tradable)	T24 OLTG Forms						-	-	-
General Site Illumination (Tradable)	T24 OLTG Forms						-	-	-
General Site Illumination (Tradable)	T24 OLTG Forms						-	-	-
General Site Illumination (Tradable)	T24 OLTG Forms						-	-	-
Specific Applications (Non-Tradable)	T24 OLTG Forms						-	-	-
Specific Applications (Non-Tradable)	T24 OLTG Forms						-	-	-
Specific Applications (Non-Tradable)	T24 OLTG Forms						-	-	-
Signs (Non-Tradable)	T24 OLTG Forms						-	-	-
Signs (Non-Tradable)	T24 OLTG Forms						-	-	-
Totals (Subtotals are inputs to Worksheet A)								-	-

NOTES TO WORKSHEET A-LTG

Note 1: If more lines are needed, create a spreadsheet in similar format, and enter above, as appropriate.

Note 2: For average runtimes, use the hours in this chart, unless proposer demonstrates to the Bldg Department's satisfaction that a different value should be used.

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EXHIBIT 3

SAMPLE Worksheet B: LEED Path

Name: Example Development

Description	Source of Info (Attachments)	Standard or Baseline	Proposed	Typical Units of Measure	Virtual Rate	Baseline	Proposed	Units	Minimum % Reduction	Actual % Reduciton	
15.2.1 MINIMUM EFFICIENCY											
Title 24 Whole Building Performance	T24 UTIL-1, Part 1			Source TDV kbtu/sf-yr					15%		
15.2.2 CALCULATE BASELINE AND REDUCTIONS											
A. Energy Costs: LEED Performance Rating Method (PRM) EAp2/c1 Letter Template											
Conditioned Building(s)	LEED EAp2/c1 Letter Template	*Included*	*Included*								
Other energy uses on site		*Included*	*Included*								
Lighting: Outside and Uncond		*Included*	*Included*								
Onsite Renew Energy: Development		*Included*	*Included*								
Campus Renew Energy: Project		*Included*	*Included*								
Other		*Included*	*Included*								
Natural Ventilation		May be included in LEED EAp2/c1, OR, use Worksheet C									
Electricity (Summary)	LEED EAp2/c1 Section 1.8 Summary[1]			kWh	#DIV/0!			Site $			
Natural Gas (Summary)				therms	#DIV/0!			Site $			
A. Summary of Efficiency of Energy Costs						$ -	$ -	Site $			
B. Combined Renewable Reductions	Included in EAp2/c1 above										
C. Natural Ventilation	May be included in LEED EAp2/c1 above, OR, use Worksheet C										
Alternate:	Worksheet C						0% to 10%				
D. Chula Vista Program Savings	Confirm with Program Administrator										
Verified Electricity Savings				Site KWH	#DIV/0!		#DIV/0!	Site $			
Verified Gas Savings				Site Therms	#DIV/0!		#DIV/0!	Site $			
D. CV Program Combined Reduction											
E. Ongoing Measure & Verify	LEED EAc5. See Worksheet E.						Required				
F. Demand Response Tariff	Worksheet F						0% to 5%				
TOTAL REDUCTION FROM BASELINE (Must be at least 50% Reduction)											**0.0%**

NOTES TO WORKSHEET B

Note 1: LEED EAp2/c1 Letter Template: Section 1.8, "Energy Cost and Consumption by Energy Type - Performance Rating Method Compliance Table"

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EXHIBIT 3

SAMPLE Worksheet C: Natural Ventilation

Name: Example Development

When using Natural Ventilation (NV) to qualify as an energy reduction feature for this Agreement, the Development may qualify for a waiver if at least 75% of the area that would normally cooled includes effective natural ventilation strategies to help maintain comfortable temperatures. A 5% waiver is granted if the area is also served by an energy or cooling system drawing energy from the grid. A 10% waiver is granted if the area is not served by an energy or cooling system drawing from the grid. The waiver may be prorated if the area is less than 75%. Final determination of normally cooled areas are at the discretion of the Building Department. For example, in CA Climate Zone 7, spaces such as warehouses and kitchens do not normally have electric cooling.

Two approaches are possible:
1. A Development may use a performance approach, such as macro-flow or Computational Fluid Dynamics (CFD) modeling, to design and confirm the maintenance of comfort using natural ventilation techniques.

2 . As an alternate, the prescriptive calculations outlined in the Collaborative for High Performance Schools (CHPS) may be used. CHPS identifies an approach to achieving ventilation strategies which are likely to be effective in helping to maintain interior comfort when outside conditions are moderate. Even though the CHPS program targets school campuses, the approach is useful for
The designer should follow the CHPS guidelines. To satisfy the prescriptive approach, the following table may be used. Inlets and Outlets should each be at least 4% of the floor area of the spa

Space Name	Source of Cooling	Conditioned Floor Area (CFA)	Qualifying CFA	Performance or Prescriptive Calculation	Prescriptive: Inlet (Windward)			Prescriptive: Outlet (Leeward)				
					Area	Orientation	% CFA	Area	Orientation	% CFA	higher than inlet	opposite or corner wall
Space A	NV with grid cooling											
Space B	NV with grid cooling											
Space C	NV with grid cooling											
Subtotal:			**0**									
Space D	NV only											
Space E	NV only											
Space F	NV only											
Subtotal:			**0**									
Other spaces	no NV											
Total Normally Conditioned Floor Area		-										

CFA which is Naturally Ventilated, with Grid Cooling	0	
Energy Reduction Allowed		

CFA Which is Naturally Ventilated Only	0	
Energy Reduction Allowed		

Combined Energy Reduction Allowed	

CFA: NV + grid	Reduction
0%	0%
15%	1%
30%	2%
45%	3%
60%	4%
75%	5%

CFA: NV Only	Reduction
0%	0%
15%	2%
30%	4%
45%	6%
60%	8%
75%	10%

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SAMPLE Worksheet D: Chula Vista Energy Efficiency Program

Name: Example Development

Refer to the appropriate City ordinances for details on this program, including, but not limited to:

City of Chula Vista Municipal Code Section 15.12 "Green Building Standards Ordinance"
City of Chula Vista Municipal Code Section 15.26.030 "Increase Energy Efficiency Ordinance"

SAMPLE Worksheet E: Ongoing Measurement & Verification (M&V)

Name: Example Development

Develop and implement a Measurement and Verification (M&V) Plan consistent with the International Performance Measurement and Verification Protocol (IPMVP) Volume III, Concepts and Options for Determining Energy Savings in New Construction, April 2003. The Development may choose either Option B or Option D.
M&V shall be on-going for the length of the lease.
Tenants shall have sub-meters for electricity. Sub-meters for gas and water should also be considered, but are not required.
The plan shall include a process for corrective action if energy performance goals are not achieved as planned. Refer to ASHRAE Guideline 14 for suggested ranges of discrepancy, appropriate to the meter, magnitude of energy uses, and overall plan.
If the LEED Path is chosen, the M&V Plan should be consistent with EAc5, except that LEED only requires one year of implementation, and the Energy Section of this Agreement requires M&V to be ongoing.

EXHIBIT 3

SAMPLE Worksheet F: Demand Response Tariffs

Name: Example Development

If the development chooses an SDG&E Demand Response tariff in which the customer has the option to manually or semi-automatically reduce electricity use when requested by the utility, then it will be awarded a 3 % waiver towards the overall energy reduction.

If the development chooses an SDG&E Demand Response tariff in which the utility can automatically reduce the customer's electricity use, then it will be awarded a 5 % waiver towards the overall energy reduction.

Meter(s)	Tariff	Manual or Semi-Automatic: Customer Controlled: 3%	Automatic, or Utility Controlled: 5%	% Reduction Awarded

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EXHIBIT 3

Links for References used in EXHIBIT 3

Title 24 Building Energy Efficiency Standards	www.energy.ca.gov/title24/
Collaborative for High Performance Schools (CHPS) CHPS 2006 Volume II Best Practices Manual - Design	www.chps.net/dev/Drupal/node/31
IPMVP, Volume III, Concepts and Options for Determining Energy Savings in New Construction, April 2003.	www.evo-world.org Products & Services / IPMVP / Applications Volume III
Leadership in Energy and Environmental Design (LEED™)	www.usgbc.org
City of Chula Vista sponsored energy efficiency program	
Living Building Challenge	www.ilbi.org

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Appendix I: NRMP Controlling Documents

This appendix contains copies of the following NRMP controlling documents:

- the MMRP as described in the CVBMP Final EIR (May 2010);
- the CVBMP Settlement Agreement (May 2010); and
- the CVBMP CCDP (July 2012).

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MITIGATION MONITORING AND REPORTING PROGRAM

for the

CHULA VISTA BAYFRONT MASTER PLAN

UPD #83356-EIR-658

SCH #2005081077

Prepared for:

SAN DIEGO UNIFIED PORT DISTRICT
3165 Pacific Highway
San Diego, California 92101

Prepared by:

DUDEK
605 Third Street
Encinitas, California 92024

MAY 2010

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1.0 INTRODUCTION

This Mitigation Monitoring and Reporting Program ("MMRP") was prepared for the San Diego Unified Port District ("Port") for the Chula Vista Bayfront Master Plan ("Proposed Project") pursuant to Public Resources Code section 21081.6, which requires public agencies to adopt such programs to ensure effective implementation of mitigation measures. The MMRP will serve the purpose of verifying completion of the mitigation measures for the Proposed Project.

Project Overview

The Proposed Project (Sweetwater Park Plan) comprises the following components:

- Amendments to the Port Master Plan (PMP); the City of Chula Vista General Plan; and the City's Local Coastal Program (LCP), which includes the Land Use Plan and Bayfront Specific Plan; and Multiple Species Conservation Program (MSCP) Chula Vista Subarea Plan
- A land exchange between the Port and Pacifica
- Redevelopment of the Sweetwater, Harbor, and Otay Districts with a variety of uses: park, open space, ecological buffers, cultural, recreational, residential, hotel and conference space, mixed-use office/commercial recreation, and retail. Redevelopment is expected to include a resort and conference center and proposed water uses such as a reconfigured marina basin and boat slips, a new commercial harbor, and realignment of the existing navigation channel.
- Redevelopment of the roadway system and infrastructure serving the Proposed Project area both on site and off site
- Demolition and/or relocation of existing uses to allow for the above redevelopment to occur subject to lease agreements.

Prominent characteristics of the Proposed Project include the establishment of three districts (Sweetwater, Harbor, and Otay), development of an RCC and other hotels, a signature park and other park and open space areas, a large ecological buffer, up to 1,500 residential units, mixed-use office/commercial recreation, retail, cultural uses, and reconfiguration of the existing Chula Vista Harbor. Several actions, including undergrounding of existing transmission lines, remediation of the L-Ditch and the former Goodrich South Campus land area, and demolition/relocation of the SDG&E switchyard (subject to the California Energy Commission (CEC) and California Public Utilities Commission (CPUC) actions), are being and/or would be separately addressed by the regulatory agencies responsible for their review and approval.

The project site (also referred to as the planning area) encompasses approximately 556 acres that includes 497 acres of land area and 59 acres of water area. This planning area has been divided into three districts—the Sweetwater District, the Harbor District, and the Otay District. The Sweetwater District (approximately 130 acres) proposes the lowest intensity development of the three districts and focuses on lower scale, environmentally sensitive and environmentally themed uses, including a large ecological buffer, a signature park, bike path, pedestrian trails, other open space areas, uses such as office/retail, hotel, parking for the Chula Vista Nature Center, and roadway and infrastructure improvements.

The Harbor District is most directly accessible to downtown Chula Vista and would be redeveloped to provide a significant link from the City to the Bayfront. It is composed of approximately 223 acres of land and approximately 59 acres of water. The Harbor District proposes the highest intensity development of the Proposed Project and encourages an active, vibrant mix of uses: hotels and conference space; bike path; park and other open space areas; a continuous waterfront promenade; residential uses; mixed-use retail, office, and cultural space; piers; and new roadways and infrastructure. Also proposed is a reconfiguration of the existing harbor to create a new commercial harbor, and realignment of the navigation channel.

The Otay District is composed of approximately 144 acres, and proposes medium intensity development that consists of industrial business park use (relocation of the existing switchyard), low cost visitor-serving recreational uses (such as a recreational vehicle park and a new South Park), other open space areas, an ecological buffer, stormwater retention basins, bike path, pedestrian trails, and new roadways and infrastructure.

The plan proposes to extend Chula Vista's traditional grid of streets to ensure pedestrian, vehicle, bicycle, transit, and water links. The Proposed Project also proposes a continuous open space system, fully accessible to the public, which would seamlessly connect the Sweetwater, Harbor, and Otay Districts through components such as a continuous shoreline promenade or baywalk and a continuous bicycle path linking the parks and ultimately creating greenbelt linkages. Significant park and other open space areas in each of the three districts are proposed along with a defined signature park and the creation of an active commercial harbor with public space at the water's edge. The plan would also enhance existing physical and visual corridors while adding new ones. Approximately 258 acres, or 46%, of the project site is proposed to be developed with hotel, retail, office, and other uses, including public street systems. Approximately 238 acres, or 43%, of the Project site is proposed to be open space, either in the form of natural habitat or public passive or active use parks. The remaining 59 acres, or 11%, of the Project site is proposed to be water area for the marina basins and new commercial harbor.

The illustrative map for the Proposed Project is shown in *Figure 3-8b* of the Final EIR. Proposed development is planned to occur in four phases over an approximate 24-year period

(approximately five years for Phases I and II; approximately five years for Phase III; and approximately 14 years for Phase IV). Phases I and II will consist of high-quality development and public improvements concentrated in the Sweetwater and Harbor Districts that will be the catalyst for surrounding public and private development in the Proposed Project. This phasing schedule, however, represents a best-case scenario and will be contingent upon and subject to many factors, such as availability and timing of public financing and construction of public improvements; terms of existing long-term leases; actual market demand for, and private financing of, proposed development; lease negotiations; approvals for, and demolition and/or relocation of, existing uses; approvals for new uses; and other approvals. The Port and City will enter into an agreement for the purpose of financing and development of the Proposed Project.

Phase I components, consisting of development on Parcels H-13, H-14, HP-5, and H-17, are analyzed in this report at a project-specific level and are identified in *Table 3-4* of the Final EIR. All other proposed Phase I components are analyzed at a programmatic level and are identified in *Table 3-5* in the Final EIR. Phases II, III, and IV components are also analyzed at a programmatic level and are identified in *Table 3-6* of the Final EIR. The nature and extent of additional environmental review, which may be required for Phases I, II, III, and IV projects analyzed at a programmatic level, will be determined pursuant to State CEQA Guidelines Section 15168.

Implementation of the Proposed Project will require discretionary approvals by State and local agencies as shown in *Table 3-1* of the Final EIR. Discretionary approvals include but are not limited to amendments to the PMP (adopted in 1981 and last amended in 2004), the Chula Vista LCP (which includes the LUP and Specific Plan), the City of Chula Vista General Plan, and the City of Chula Vista's MSCP, coastal development permits, a land exchange, and tentative maps.

The Final Environmental Impact Report (Final EIR)

The Final Environmental Impact Report (Final EIR) evaluated the Proposed Project's potential to adversely affect a wide range of resources and impact categories, including land/water use compatibility; traffic and circulation; parking; aesthetics/visual quality; hydrology/water quality; air quality; noise; terrestrial biological resources; marine biological resources; cultural resources; paleontological resources; hazards and hazardous materials/public safety; public services; public utilities; seismic/geologic hazards; and energy. The Final EIR recommends feasible mitigation measures to avoid or substantially reduce these significant impacts. Pursuant to Public Resources Code Section 21011.6, the mitigation measures are included in this MMRP.

In response to public and agency comments on the Revised DEIR, the Port and the City engaged in extensive public outreach with many interested persons, organizations and agencies in a good faith attempt to address their concerns. As a result of these efforts, the Port and the City agreed

to implement a number of project design features and mitigation measures above and beyond those which are required to avoid or reduce the Proposed Project's significant impacts below a level of significance. Although these additional project design features and mitigation measures are not required by CEQA or any other applicable law or regulation, the Port and the City agreed to include them in this MMRP to facilitate their implementation and monitoring.

2.0 MITIGATION MONITORING AND REPORTING PROGRAM

Program Procedural Guidelines

Prior to the commencement of a development activity subject to a project design feature or mitigation measure contained in this MMRP, the parties responsible for implementing, monitoring and reporting the project design feature or mitigation measure shall meet to establish their respective responsibility and authority for each of the project design features or mitigation measures applicable to the proposed activity. The Port and/or the City shall provide the participants with a complete list of all project design features and mitigation measures in this MMRP which apply to the proposed activity. The participants shall review and confirm the performance, monitoring and reporting responsibilities for each applicable design feature and mitigation measure.

Actions in Case of Noncompliance

There are generally three separate categories of noncompliance associated with the project design features and mitigation measures contained in this MMRP:

- Noncompliance that requires an immediate halt to a specific task or piece of equipment;
- Noncompliance that warrants an immediate corrective action but does not result in work or task delay; and
- Noncompliance that does not warrant immediate corrective action and results in no work or task delay.

There are a number of options the Port and/or the City may use to enforce this MMRP should noncompliance continue. These options include, but are not limited to, "stop work" orders, fines and penalties (civil), restitution, permit revocations, citations, and injunctions. Decisions regarding actions in case of noncompliance are the responsibility of the Port and/or the City.

3.0 MITIGATION MONITORING PROGRAM TABLE

Number	Mitigation Measure	Responsible Party and Mitigation Timing	Monitoring Agency	Date of Completion	Date of Verification
MM 4.1-1	Prior to the issuance of the first grading permit for activities that could impact CCC jurisdictional areas, the Port or Port tenants, as appropriate, shall consult with the CCC to determine whether the proposed impact is allowed under the California Coastal Act. If the impact is not allowed, then a design shall be developed that avoids impacts to CCC jurisdictional wetlands. In the event that the CCC concurs that the impact to CCC jurisdictional wetlands is allowed, the Port or Port tenants, as appropriate, shall prepare a restoration plan detailing the measures needed to create/restore CCC wetlands to provide 2:1 mitigation for the impact to CCC wetlands on Parcels HP-13B and HP-7. The guidelines for this plan will be developed in consultation with the regulatory agencies. The plan shall summarize the approach taken to avoid and minimize impacts to sensitive habitats, shall detail the target functions and values, and shall address the approach to restoring those functions and values. Typically, the restoration plan shall detail the site selection process and propose site preparation techniques, planting palettes, implementation procedures, and monitoring and maintenance practices and shall establish performance criteria for each mitigation site. Typical success criteria may include percent canopy cover, percent of plant survival, and percent of native/non-native canopy cover. A minimum 5-year maintenance and monitoring period would be implemented following installation, to ensure each area is successful. The restoration plan shall address monitoring requirements and shall specify when annual reports are to be prepared and what they shall entail. Qualitative and quantitative assessments of the site conditions shall be included. If the mitigation standards have not been met in a particular year, contingency measures shall be identified in the annual report, and remediation will occur within 3 months or the start of the growing season. The Port shall be responsible for ensuring that all of the success criteria are met to the satisfaction of the Port in consultation with the regulatory agencies, including the CCC. *Applies to Significant Impact 4.1-1.	Port or Port Tenants – Prior to First Grading Permit	Port		
MM 4.1-2	The Port or Port tenants, as appropriate, will need to mitigate impacts to the areas identified as seasonal pond, mapped as a CCC wetland at a 2:1 ratio. The Port or Port tenants, as appropriate, shall confer with the CCC in order to determine whether drainages mapped as a potential CCC wetland fall under CCC jurisdiction. If this area is not subject to CCC jurisdiction, no additional mitigation would be required. If CCC does assert jurisdiction over these areas, the final development design must mitigate	Port or Port Tenants – Prior to First Clearing or Grubbing Permit	Port in Consultation with the California Coastal Commission		

Number	Mitigation Measure	Responsible Party and Mitigation Timing	Monitoring Agency	Date of Completion	Date of Verification
	impacts at a 2:1 ratio. Prior to the issuance of the first grading permit for projects that could impact CCC jurisdictional areas, the Port or Port tenants, as appropriate, shall consult with the CCC to determine whether the proposed impact is allowed under the California Coastal Act. If the impact is not allowed, then a design shall be developed that avoids impacts to CCC jurisdictional wetlands. In the event that the CCC concurs that the impact to CCC jurisdictional wetlands is allowed, the Port or Port tenants, as appropriate, shall prepare a restoration plan detailing the measures needed to create/restore CCC wetlands. The guidelines for this plan will be developed in consultation with the regulatory agencies. The plan shall summarize the approach taken to avoid and minimize impacts to sensitive habitats, shall detail the target functions and values, and shall address the approach to restoring those functions and values. Typically, the restoration plan shall detail the site selection process and propose site preparation techniques, planting palettes, implementation procedures, and monitoring and maintenance practices and shall establish performance criteria for each mitigation site. Typical success criteria may include percent canopy cover, percent of plant survival, and percent of native/non-native canopy cover. A minimum 5-year maintenance and monitoring period would be implemented following installation, to ensure each area is successful. The restoration plan shall address monitoring requirements and shall specify when annual reports are to be prepared and what they shall entail. Qualitative and quantitative assessments of the site conditions shall be included. If the mitigation standards have not been met in a particular year, contingency measures shall be identified in the annual report and remediation will occur within 3 months or the start of the growing season. The Port shall be responsible for ensuring that all of the success criteria are met to the satisfaction of the Port in consultation with the regulatory agencies, including the CCC. *Applies to Significant Impacts 4.1-2 and 4.1-3.				
MM 4.1-4	Prior to issuance of any permit for clearing, grubbing, or grading, the project applicant shall be required to obtain an HLIT Permit pursuant to Section 17.35 of the Chula Vista Municipal Code for impacts to Covered Species and Vegetation Communities protection under the City's MSCP Subarea Plan. *Applies to Significant Impact 4.1-6.	Project Applicant - Prior to First Clearing or Grubbing Permit	City of Chula Vista, USFWS, and CDFG		

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Number	Mitigation Measure	Responsible Party and Mitigation Timing	Monitoring Agency	Date of Completion	Date of Verification
MM 4.2-1	Prior to the issuance of any certificates of occupancy for any development on H-3 in Phase I, the Port or Port tenant, as appropriate, shall: • Construct H Street west of Marina Parkway as a 2-lane Class III Collector • Construct E Street as a 2-lane Class III Collector along Parcel H-3. This would provide a connection to Lagoon Drive via Marina Parkway. • Construct a traffic signal at H Street and RCC Truck Driveway. Prior to the issuance of building permits for any development on H-13 or H-14 in Phase I, the applicant shall: • Rebuild that portion of Marina Parkway fronting H-13 and H-14 between Sandpiper Way and J Street as a 3-lane Class II Collector with excess ROW used for pedestrian facilities, or secure such construction to the satisfaction to the City engineer. Frontage improvements for the remaining segments of Marina Parkway J Street and Sandpiper Way will be constructed in conjunction with the development of the adjacent parcels to these frontages in subsequent phases. • Construct Street A north of J Street would be constructed as a 2-lane Class III Collector, or secure such construction to the satisfaction of the City Engineer. This mitigation would reduce Significant Impact 4.2-1 to below a level of significance. *Applies to Significant Impact 4.2-1.	Port or Port Tenants - Prior to First Certificate of Occupancy Applicant -Prior to First Building Permit	City Engineer City Engineer		
MM 4.2-2	Prior to the issuance of any certificates of occupancy for any development on H-3 in Phase I, Port or Port tenants, as appropriate, shall construct H Street from I-5 to Marina Parkway as a four-lane Major Street. This mitigation is provided in lieu of widening of F Street due to environmental constraints associated with the widening of F Street in the vicinity of G&G Street Marsh. At the completion of the H Street Extension, the Port or Port tenants, as appropriate, shall also restrict access along the segment of Lagoon Drive/F Street (between Parcel H-3 and the BF Goodrich access on F Street) to emergency vehicle access only. This mitigation would reduce Significant Impact 4.2-2, 4.2-4, 4.2-6, 4.2-7, and 4.2-11 to below a level of significance. *Applies to Significant Impacts 4.2-2, 4.2-4, 4.2-6, 4.2-7, and 4.2-11.	Port or Port Tenants -Prior to First Certificate of Occupancy	City Engineer		

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Number	Mitigation Measure	Responsible Party and Mitigation Timing	Monitoring Agency	Date of Completion	Date of Verification
MM 4.2-3	Prior to the issuance of any certificates of occupancy for any development on H-3 in Phase I, Port or Port tenants, as appropriate, shall widen H Street west of Marina Parkway from a two-lane Class III Collector to a three-lane Class II Collector. This mitigation would reduce Significant Impact 4.2-3 to below a level of significance. *Applies to Significant Impact 4.2-3.	Port or Port Tenants -Prior to First Certificate of Occupancy	City Engineer		
MM 4.2-4	Prior to the issuance of certificates of occupancy for development on H-3 and building permits for any development on H-13 or H-14 in Phase I, the Port, Port tenant, or applicant, as appropriate, shall widen Bay Boulevard between E Street and F Street from a two-lane Class III Collector to a two-lane Class II Collector, or secure such widening to the satisfaction of the City Engineer. The additional roadway capacity would facilitate the flow of project traffic. This mitigation would reduce Significant Impact 4.2-5 to below a level of significance. *Applies to Significant Impact 4.2-5.	Port, Port Tenants, or Applicant -Prior to First Certificate of Occupancy	City Engineer		
MM 4.2-5	Prior to the issuance of building permits for any development on H-13 or H-14 in Phase I, the applicant shall construct a traffic signal at the intersection of J Street and Bay Boulevard, or secure such construction to the satisfaction of the City Engineer. The traffic signal shall be constructed and operate to the satisfaction of the City Engineer. This mitigation would reduce Significant Impact 4.2-8 and 4.2-14 to below a level of significance. *Applies to Significant Impacts 4.2-8 and 4.2-14.	Applicant -Prior to First Building Permit	City Engineer		
MM 4.2-6	Prior to the issuance of certificates of occupancy for development on H-3 or building permits on H-13 or H-14 for any development in Phase I, the Port, Port tenants, or applicants, as appropriate, shall construct a traffic signal at the intersection of L Street and Bay Boulevard, or secure such construction to the satisfaction of the City Engineer. The traffic signal shall be constructed and operate to the satisfaction of the City Engineer. This mitigation would reduce Significant Impact 4.2-9 and 4.2-15 to below a level of significance. *Applies to Significant Impacts 4.2-9 and 4.2-15.	Port, Port Tenants, or Applicant -Prior to First Certificate of Occupancy	City Engineer		

Number	Mitigation Measure	Responsible Party and Mitigation Timing	Monitoring Agency	Date of Completion	Date of Verification
MM 4.2-7	Prior to the issuance of certificates of occupancy for development on H-3 or building permits on H-13 or H-14 for any development in Phase I, the Port, Port tenants, or applicants, as appropriate, shall construct a traffic signal at the intersection of I-5 southbound ramps and Bay Boulevard, or secure such construction to the satisfaction of the City Engineer. The traffic signal shall be constructed and operate to the satisfaction of the City Engineer. This mitigation would reduce Significant Impact 4.2-10 and 4.2-16 to below a level of significance *Applies to Significant Impacts 4.2-10 and 4.2-16.	Port, Port Tenants, or Applicant -Prior to First Certificate of Occupancy	City Engineer		
MM 4.2-9	Prior to the issuance of certificates of occupancy for any development on H-3 in Phase I, the Port or Port tenant, as appropriate, shall construct a westbound lane along H Street/RCC Driveway, which would result in widening H Street west of Marina Parkway to a three-lane Class II Collector. This mitigation would reduce Significant Impact 4.2-13 to below a level of significance. *Applies to Significant Impact 4.2-13.	Port or Port Tenant -Prior to First Certificate of Occupancy	City Engineer		
MM 4.2-11	Prior to the issuance of certificates of occupancy for development on H-23 in Phase I, the Port or Port tenant, as appropriate, shall construct Street A between H Street to Street C as a two-lane Class III Collector, and shall construct Street C between Marina Parkway and Street A as a two-lane Class II Collector. Implementation of this mitigation measure would reduce Significant Impact 4.2-20 to below a level of significance. *Applies to Significant Impact 4.2-20.	Port, Port Tenant, or Applicant -Prior to First Certificate of Occupancy	City Engineer		
MM 4.2-12	Prior to the issuance of certificates of occupancy for any development in Phase II, the Port, Port tenant, or applicant, as appropriate, shall widen H Street between Street A and I-5 Ramps to a five-lane Major Street, or secure such construction to the satisfaction of the City Engineer. The additional roadway capacity would facilitate the flow of project traffic. This mitigation would reduce Significant Impact 4.2-21 to below a level of significance. *Applies to Significant Impact 4.2-21.	Port, Port Tenant, or Applicant -Prior to First Certificate of Occupancy	City Engineer		
MM 4.2-13	Prior to the issuance of certificates of occupancy for any development in Phase II, the Port, Port tenant, or applicant, as appropriate, shall widen J Street between Street A to I-	Port, Port Tenant, or Applicant	City Engineer		

Number	Mitigation Measure	Responsible Party and Mitigation Timing	Monitoring Agency	Date of Completion	Date of Verification
	5 Ramps to a six-lane Major Street, or secure such construction to the satisfaction of the City Engineer The additional roadway capacity would facilitate the flow of project traffic. This mitigation would reduce Significant Impact 4.2-22 to below a level of significance. *Applies to Significant Impact 4.2-22.	-Prior to First Certificate of Occupancy			
MM 4..2-14	Prior to the issuance of certificates of occupancy for any development in Phase II, the Port, Port tenant, or applicant, as appropriate, shall widen Street A between Street C and J Street to a four-lane Class I Collector or secure such construction to the satisfaction of the City Engineer. The additional roadway capacity would facilitate the flow of project traffic. This mitigation would reduce Significant Impact 4.2-23 to below a level of significance. *Applies to Significant Impact 4.2-23.	Port, Port Tenant, or Applicant -Prior to First Certificate of Occupancy	City Engineer		
MM 4.2-15	Prior to the issuance of certificates of occupancy for any development in Phase II, the Port, Port tenant, or applicant, as appropriate, shall construct a traffic signal and add an exclusive left-turn lane at each approach at the intersection of H Street and RCC Driveway, or secure such construction to the satisfaction of the City Engineer. The traffic signal and left-turn lanes shall be built to the satisfaction of the City Engineer. This mitigation would reduce Significant Impact 4.2-24 to below a level of significance. *Applies to Significant Impact 4.2-24.	Port, Port Tenant, or Applicant -Prior to First Certificate of Occupancy	City Engineer		
MM 4.2-16	Prior to the issuance of certificates of occupancy for any development in Phase II, the Port, Port tenant, or applicant, as appropriate, shall construct a westbound and eastbound through lane along J Street at the intersection of J Street and Bay Boulevard, or secure such construction to the satisfaction of the City Engineer. The lanes shall be constructed to the satisfaction of the City Engineer. This mitigation would reduce Significant Impact 4.2-25 to below a level of significance. *Applies to Significant Impact 4.2-25.	Port, Port Tenant, or Applicant -Prior to First Certificate of Occupancy	City Engineer		
MM 4.2-17	Prior to the issuance of certificates of occupancy for any development in Phase II, the Port, Port tenant, or applicant, as appropriate, shall construct a traffic signal at the intersection of H Street and Street A, or secure such construction to the satisfaction of the City Engineer. The traffic signal shall be constructed and operate to the satisfaction of	Port, Port Tenant, or Applicant -Prior to First Certificate of	City Engineer		

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Number	Mitigation Measure	Responsible Party and Mitigation Timing	Monitoring Agency	Date of Completion	Date of Verification
	the City Engineer. This mitigation would reduce Significant Impact 4.2-26 to below a level of significance. *Applies to Significant Impact 4.2-26.	Occupancy			
MM 4.2-18	Prior to the issuance of certificates of occupancy for any development in Phase II of the development, the developer shall construct a traffic signal at the intersection of J Street and Marina Parkway. The traffic signal shall be constructed and operate to the satisfaction of the City Engineer. This mitigation would reduce Significant Impact 4.2-27 to below a level of significance. *Applies to Significant Impact 4.2-27.	Port, Port Tenant, or Applicant -Prior to First Certificate of Occupancy	City Engineer		
MM 4.2-19	Prior to the issuance of certificates of occupancy for any development in Phase II, the Port, Port tenant, or applicant, as appropriate, shall construct a traffic signal at the intersection of J Street and Street A and add an exclusive westbound right-turn lane along J Street and an exclusive southbound right-turn lane along Street A, or secure such construction to the satisfaction of the City Engineer. The traffic signal and turning lanes shall operate and be constructed to the satisfaction of the City Engineer. This mitigation would reduce Significant Impact 4.2-28 to below a level of significance. *Applies to Significant Impact 4.2-28.	Port, Port Tenant, or Applicant -Prior to First Certificate of Occupancy	City Engineer		
MM 4.2-20	Prior to the issuance of certificates of occupancy for any development in Phase III, the Port, Port tenants, or applicant, as appropriate shall construct the segment of Street A that would continue south from J Street, connecting to the proposed Street B in the Otay District, as a two-lane Class III Collector. In addition, prior to the issuance of certificates of occupancy for any development in Phase III, the Port, Port tenants, as appropriate shall construct the segment of Street B that would connect to the proposed Street A, bridge over the Telegraph Canyon Creek Channel, and continue south to Bay Boulevard, as a 2-lane Class III Collector. This mitigation would reduce Significant Impact 4.2-31 to below a level of significance. *Applies to Significant Impact 4.2-31.	Port, Port Tenant, or Applicant -Prior to First Certificate of Occupancy	City Engineer		

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Number	Mitigation Measure	Responsible Party and Mitigation Timing	Monitoring Agency	Date of Completion	Date of Verification
MM 4.2-21	Prior to the issuance of certificates of occupancy for any development in Phase III, the Port, Port tenants, or applicant, as appropriate, shall widen Street A between H Street and Street C to a four-lane Class I Collector, or secure such construction to the satisfaction of the City Engineer. The additional roadway capacity would facilitate the flow of project traffic. This mitigation would reduce Significant Impact 4.2-32 to below a level of significance. *Applies to Significant Impact 4.2-32.	Port, Port Tenant, or Applicant -Prior to First Certificate of Occupancy	City Engineer		
MM 4.2-22	Prior to the issuance of certificates of occupancy for any development in Phase III, the Port, Port tenants, or applicant, as appropriate, shall construct an exclusive eastbound right-turn lane along J Street at the intersection of J Street and Bay Boulevard, or secure such construction to the satisfaction of the City Engineer. The turning lane shall be built to the satisfaction of the City Engineer. This mitigation would reduce Significant Impact 4.2-33 to below a level of significance. *Applies to Significant Impact 4.2-33.	Port, Port Tenant, or Applicant -Prior to First Certificate of Occupancy	City Engineer		
MM 4.2-23	Prior to the issuance of certificates of occupancy for any development in Phase III of the development, the Port, Port tenants, or applicant, as appropriate, shall construct an exclusive westbound right-turn lane along J Street at the intersection of J Street and I-5 NB Ramps, or secure such construction to the satisfaction of the City Engineer. The turning lane shall be built to the satisfaction of the City Engineer. This mitigation would reduce Significant Impact 4.2-34 to below a level of significance *Applies to Significant Impact 4.2-34.	Port, Port Tenant, or Applicant -Prior to First Certificate of Occupancy	City Engineer		
MM 4.2-24	Prior to the issuance of certificates of occupancy for any development in Phase III, the Port, Port tenants, or applicant, as appropriate, shall construct E Street from the RCC Driveway to Bay Boulevard as a two-lane Class III Collector. This mitigation would reduce Significant Impact 4.2-38 to below a level of significance *Applies to Significant Impact 4.2-38.	Port, Port Tenants, or Applicant -Prior to First Certificate of Occupancy	City Engineer		
MM 4.2-25	Prior to the issuance of certificates of occupancy for any development in Phase IV, the Port, Port tenant, or applicant, as appropriate, shall construct a new F Street segment between the proposed terminus of the existing F Street and the proposed E Street	Port, Port Tenant, or Applicant -Prior to First	City Engineer		

Number	Mitigation Measure	Responsible Party and Mitigation Timing	Monitoring Agency	Date of Completion	Date of Verification
	extension, ending at the SP-3 Chula Vista Nature Center parking lot, as a two-lane Class III collector street, which shall also contain a Class II bike lane on both sides of the street. This mitigation would reduce Significant Impact 4.2-39 to below a level of significance. *Applies to Significant Impact 4.2-39.	Certificate of Occupancy			
MM 4.2-26	Prior to the issuance of certificates of occupancy for any development in Phase IV, the Port, Port tenant, or applicant, as appropriate, shall widen E Street between F Street and Bay Boulevard to a four-lane Class I Collector, or secure such construction to the satisfaction of the City Engineer. The additional roadway capacity would facilitate the flow of project traffic. Also, the widening of this segment of E Street would facilitate the flow of project traffic on Bay Boulevard between E Street to F Street. This mitigation would reduce Significant Impacts 4.2-40 and 4.2-41 to below a level of significance. *Applies to Significant Impacts 4.2-40 and 4.2-41.	Port, Port Tenant, or Applicant -Prior to First Certificate of Occupancy	City Engineer		
MM 4.2-27	Prior to the issuance of certificates of occupancy for any development in Phase IV, the Port, Port tenant, or applicant, as appropriate, shall widen H Street between I-5 Ramps and Broadway to a 6-lane Gateway Street. The additional roadway capacity would facilitate the flow of project traffic. This mitigation would reduce Significant Impact 4.2-42 to below a level of significance. The off-site traffic improvements described in this mitigation measure for direct traffic impacts would create secondary traffic impacts. Improvements associated with these secondary impacts would be required as a result of cumulative and growth-related traffic overall, of which the Proposed Project would be a component. The Western Chula Vista TDIF identifies these improvements in a cumulative context and attributes fair share contributions according to the impact. Therefore, the Proposed Project would be responsible for a fair share contribution and would not be solely responsible for implementation of necessary secondary impact improvements. *Applies to Significant Impact 4.2-42.	Port, Port Tenant, or Applicant -Prior to First Certificate of Occupancy	City Engineer		

Number	Mitigation Measure	Responsible Party and Mitigation Timing	Monitoring Agency	Date of Completion	Date of Verification
MM 4.2-28	Prior to the issuance of certificates of occupancy for any development in Phase IV, the Port, Port tenant, or applicant, as appropriate, shall construct an eastbound through lane and an exclusive eastbound right-turn lane along E Street at the intersection of E Street and Bay Boulevard, or secure such construction to the satisfaction of the City Engineer. The lanes shall be constructed to the satisfaction of the City Engineer. This mitigation would reduce Significant Impact 4.2-43 to below a level of significance. *Applies to Significant Impact 4.2-43.	Port, Port Tenant, or Applicant -Prior to First Certificate of Occupancy	City Engineer		
MM 4.2-29	Prior to the issuance of certificates of occupancy for any development in Phase IV, the Port, Port tenant, or applicant, as appropriate, shall construct an exclusive southbound right-turn lane along Bay Boulevard at the intersection of J Street and Bay Boulevard, or secure such construction to the satisfaction of the City Engineer. The lane shall be constructed to the satisfaction of the City Engineer. This mitigation would reduce Significant Impact 4.2-44 to below a level of significance. *Applies to Significant Impact 4.2-44.	Port, Port Tenant, or Applicant -Prior to First Certificate of Occupancy	City Engineer		
MM 4.2-30	Prior to the issuance of certificates of occupancy for any development in Phase IV, the Port, Port tenant, or applicant, as appropriate, shall construct a dual southbound left-turn lane along Street A, or secure such construction to the satisfaction of the City Engineer. The lane shall be constructed to the satisfaction of the City Engineer. This mitigation would reduce Significant Impact 4.2-45 to below a level of significance. *Applies to Significant Impact 4.2-45.	Port, Port Tenant, or Applicant -Prior to First Certificate of Occupancy	City Engineer		
MM 4.4-1	**A. View Protection:** As a condition for issuance of Coastal Development Permits, buildings fronting on H Street shall be designed to step away from the street. More specifically, design plans shall protect open views down the H Street Corridor by ensuring that an approximate 100-foot ROW width (curb–curb, building setbacks, and pedestrian plaza/walkway zone) remains clear of buildings, structures, or major landscaping. Visual elements above 6 feet in height shall be prohibited in this zone if the feature would reduce visibility by more than 10 percent. Placement of trees should take into account potential view blockage. This mitigation should not be interpreted to not allow tree masses; however, trees should be spaced in order to ensure "windows" through the landscaping. Trees should also be considered to help frame the views and they should	Project Developer -Prior to First Coastal Development Permit	Port		

Number	Mitigation Measure	Responsible Party and Mitigation Timing	Monitoring Agency	Date of Completion	Date of Verification
	be pruned to increase the views from pedestrians and vehicles, underneath the tree canopy. In order to reduce the potential for buildings to encroach upon view corridors, and to address the scale and massing impact, buildings shall step back at appropriate intervals or be angled to open up a broader view corridor at the ground plane to the extent feasible. All plans shall be subject to review and approval by the Port. All future development proposals shall conform to Port design guidelines and standards to the satisfaction of the Port.				
	B. Height and Bulk: Prior to issuance of Coastal Development Permits for projects within the Port's jurisdiction, the project developer shall ensure that design plans for any large scale projects (greater than two stories in height) shall incorporate standard design techniques such as articulated facades, distributed building massing, horizontal banding, stepping back of buildings, and varied color schemes to separate the building base from its upper elevation and color changes such that vertical elements are interrupted and smaller scale massing implemented. These plans shall be implemented for large project components to diminish imposing building edges, monotonous facades, and straight-edge building rooflines and profiles. This shall be done to the satisfaction of the Port.	Project Developer -Prior to First Coastal Development Permit	Port		
	C. Height and Bulk: Prior to design review approval for properties within the City's jurisdiction, the project developer shall ensure that design plans for any large scale projects (greater than two stories in height) shall incorporate standard design techniques such as articulated facades, distributed building massing, horizontal banding, and varied color schemes to separate the building base from its upper elevation and color changes such that vertical elements are interrupted and smaller scale massing implemented. These plans shall be implemented for the large project components to diminish imposing building edges, monotonous facades, and straight-edge building rooflines and profiles. This shall be done to the satisfaction of the City of Chula Vista Planning Director.	Project Developer -Prior to Design Review Approval	City		
	D. Landscaping: Prior to final approval of Phase I infrastructure design plans, the Port and City shall collectively develop a master landscaping plan for the project's public components and improvements. The plan shall provide sufficient detail to ensure conformance to streetscape design guidelines and that future developers/tenants, as applicable, provide screening of parking areas.	Port and City -Prior to Final Approval of Phase I Design	Port in Coordination with qualified Biologist or Landscape Architect		

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Number	Mitigation Measure	Responsible Party and Mitigation Timing	Monitoring Agency	Date of Completion	Date of Verification
	Streetscape landscaping shall be designed to enhance the visitor experience for both pedestrians and those in vehicles. Specifically, detailed landscaping plans shall be developed to enhance Marina Parkway, a designated scenic roadway and shall provide, where appropriate, screening of existing industrial uses and parking areas until such time as these facilities are redeveloped. Street landscaping design shall be coordinated with a qualified biologist or landscape architect to ensure that proposed trees and other landscaping are appropriate for the given location. For instance, vegetation planted adjacent to open water/shoreline areas must not provide raptor perches. Landscaping shall be drought tolerant or low-water use, and invasive plant species shall be prohibited. E. ***Landscaping***: Prior to approval of a tentative map or site development plan for future residential development, the project developer shall submit a landscaping design plan for on-site landscaping improvements that is in conformance to design guidelines and standards established by the City of Chula Vista. The plan shall be implemented as a condition of project approval.	Project Developer -Prior to TM/SDP Approval	City		
	F. ***Gateway Plan***: Concurrent with the preparation of Phase I infrastructure design plans for E and H Streets, a Gateway plan shall be prepared for E and H Streets. Prior to issuance of occupancy for any projects within the Port's jurisdiction in Phase I, the E and H Street Gateway plan shall be approved by the Port and City's Directors of Planning and Building. The E and H Street Gateway plan shall be coordinated with the Gateway plan for J Street.	Applicant -Prior to Occupancy	Port and City		
	G. ***Gateway Plan***: Concurrent with development of Parcels H-13 and H-14, the applicant shall submit a Gateway plan for J Street for City Design Review consideration. Prior to issuance of any building permits, the J Street Gateway plan shall be approved by the Director of Planning and Building in coordination with the Port's Director of Planning. The J Street Gateway plan shall be coordinated with the Gateway plan for E and H Streets. *Applies to Significant Impacts 4.4-3, 4.4-4, 4.4-5, 4.4-7, and 4.4-8.	Applicant -Prior to First Building Permit	Port and City		

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Number	Mitigation Measure	Responsible Party and Mitigation Timing	Monitoring Agency	Date of Completion	Date of Verification
MM 4.4-2	Prior to design review approval, lighting design plans with specifications for outdoor lighting locations and other intensely lighted areas shall be submitted to the Port and City for review and approval. The specifications shall identify the lighting intensity needs and design light fixtures to direct light toward intended uses. Outdoor and parking lot lighting shall be shielded and directed away from adjacent properties, wherever feasible and consistent with public safety. Consideration shall be given to the use of low-pressure sodium lighting or the equivalent. The lighting plan shall illustrate the location of the proposed lighting standards and type of shielding measures. The lighting plan shall incorporate specific design features including, but not limited to, the following: • Where lighting must be used for safety reasons (FAA 2000 Advisory Circular), minimum intensity, maximum off-phased (3 second between flashes) white strobes shall be used. • All event lighting shall be directed downward and shielded, unless directed downward or shielded to minimize light spill beyond the area for which illumination is required. • Exterior lighting shall be limited to that which is necessary and appropriate to ensure general public safety and navigation, including signage for building identification and orientation. • Exterior lighting shall be directed downward and shielded to prevent upward lighting and to minimize light spill beyond the area for which illumination is required. • Office space, residential units, and hotel rooms shall be equipped with motion sensors, timers, or other lighting control systems to ensure that lighting is extinguished when the space in unoccupied. • Office space, residential unit and hotel rooms shall be equipped with blinds, drapes or other window coverings that may be closed to minimize the effects of interior night lighting. • Reflective glass or the application of reflective coatings shall not be used on any glass surface.	Applicant -Prior to Design Review Approval	Port and City		

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Number	Mitigation Measure	Responsible Party and Mitigation Timing	Monitoring Agency	Date of Completion	Date of Verification
MM 4.5-1	As a condition of approval of a Tenant Design Plan for projects within the Port's jurisdiction and a condition of the approval of a Final Map for projects within the City's jurisdiction, the project applicant shall include trash control measures that include animal-proof, covered, and self-closing trash containers and trash control enclosures, with frequent servicing, to prevent litter from being wind blown off-site to the satisfaction of the Port/City as appropriate pursuant to their water quality technical reports. *Applies to Significant Impact 4.5-1.	Applicant -Condition of Approval for Tentative Design Plan/Condition of Approval of Final Map	Port/City		
MM 4.5-2	A. Prior to the issuance of a grading permit, the applicant shall notify the RWQCB of dewatering of contaminated groundwater during construction. If contaminated groundwater is encountered, the project developer shall treat and/or dispose of the contaminated groundwater (at the developer's expense) in accordance with NPDES permitting requirements, which includes obtaining a permit from the Industrial Wastewater Control Program to the satisfaction of the RWQCB. B. Prior to the discharge of contaminated groundwater for all construction activities, should flammables, corrosives, hazardous wastes, poisonous substances, greases and oils, and other pollutants exist on site, a pretreatment system shall be installed to pre-treat the water to the satisfaction of the RWQCB before it can be discharged into the sewer system. *Applies to Significant Impact 4.5-2.	Project Applicant/ Developer -Prior to First Grading Permit Project Developer -Prior to Construction groundwater discharge	RWQCB RWQCB		
MM 4.5-3	Prior to the issuance of a grading, excavation, dredge/fill, or building permit for any Parcel, the applicant shall submit a Spill Prevention/Contingency Plan for approval by the Port or City as appropriate. The plan shall: • Ensure that hazardous or potentially hazardous materials (e.g., cement, lubricants, solvents, fuels, other refined petroleum hydrocarbon products, wash water, raw sewage) that are used or generated during the construction and operation of any project as part of the Proposed Project shall be handled, stored, used, and disposed of in accordance with NPDES permitting requirements and applicable federal, state, and local policies • Include material safety data sheets • Require 40 hours of worker training and education as required by the Occupational Safety and Health Administration	Applicant -Prior to First Grading Permit	Port or City		

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Number	Mitigation Measure	Responsible Party and Mitigation Timing	Monitoring Agency	Date of Completion	Date of Verification
	• Minimize the volume of hazardous or potentially hazardous materials stored at the site at any one time • Provide secured storage areas for compatible materials, with adequate spill contaminant • Maintain all required records, manifest and other tracking information in an up-to-date and accessible form or location for review by the Port or City • Demonstrate that all local, state, and federal regulations regarding hazardous materials and emergency response have been or will be complied with. *Applies to Significant Impact 4.5-3.				
MM 4.5-4	**A.** Prior to issuance of a permit by USACE for dredge and/or fill operations in the Bay or Chula Vista Harbor, the applicant shall conduct a focused sediment investigation and submit it to USACE and RWQCB for review and approval. The applicant shall then determine the amount of bay sediment that requires remediation and develop a specific work plan to remediate bay sediments in accordance with permitting requirements of the RWQCB. The work plan shall include but not be limited to dredging the sediment, allowing it to drain, and analyzing the nature and extent of any contamination. Pending the outcome of the analytical results, a decision by RWQCB shall prescribe the requirements for disposition of any contaminated sediment. **B.** Prior to issuance of a grading permit for marina redevelopment on HW-1 and HW-4, the developer shall submit a work plan for approval by the RWQCB and Port/City that requires the implementation of BMPs, including the use of silt curtains during in-water construction to minimize sediment disturbances and confine potentially contaminated sediment if contaminated sediment exists. If a silt curtain should be necessary, the silt curtain shall be anchored along the ocean floor with weights (i.e., a chain) and anchored to the top with a floating chain of buoys. The curtain shall wrap around the area of disturbance to prevent turbidity for traveling outside the immediate project area. Once the impacted region resettles the curtains shall be removed. If the sediment would be suitable for ocean disposal, no silt curtain shall be required. However, if contaminants are actually present, the applicant would be required to provide to the RWQCB and Port/City an evaluation showing that the sediment would be suitable for ocean disposal. *Applies to Significant Impact 4.5-4	Applicant -Prior to First USACE Permit for dredge/fill Developer -Prior to First Grading Permit	USACE and RWQCB RWQCB and Port/City		

Number	Mitigation Measure	Responsible Party and Mitigation Timing	Monitoring Agency	Date of Completion	Date of Verification
MM 4.5-5	Prior to the commencement of in-water construction for all phases of development, the Port or Port tenants shall adhere to regulatory requirements including the use of BMPs, which shall include use of silt curtains during all sediment suspension activities. *Applies to Significant Impact 4.5-5	Port or Port Tenants -Prior to In-Water Construction	RWQCB		
MM 4.6-6	Development of Program-level components of the Chula Vista Bayfront Master Plan (Phases I through IV) shall implement measures to reduce GHG emissions. Specific measures may include, but are not limited to the following: **Energy Efficiency** • Design buildings to be energy efficient. Site buildings to take advantage of shade, prevailing winds, landscaping, and sun screens to reduce energy use. • Install efficient lighting and lighting control systems. Use daylight as an integral part of lighting systems in buildings. • Install light colored "cool" roofs, cool pavements, and strategically placed shade trees. • Provide information on energy management services for large energy users. • Install energy-efficient heating and cooling systems, appliances and equipment, and control systems. • Install light emitting diodes (LEDs) for traffic, street, and other outdoor lighting. • Limit the hours of operation for outdoor lighting. • Use solar heating, automatic covers, and efficient pumps and motors for pools and spas. • Provide education on energy efficiency. <u>Renewable Energy</u> • Install solar and wind power systems, solar and tankless hot water heaters, and energy-efficient heating ventilation and air conditioning. Educate consumers about existing incentives. • Install solar panels on carports and over parking areas. • Use combined heat and power in appropriate applications.	Project Developer -Conditions of Approval for Program Master Plan Developments	Port		

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Number	Mitigation Measure	Responsible Party and Mitigation Timing	Monitoring Agency	Date of Completion	Date of Verification
	Water Conservation and Efficiency • Create water-efficient landscapes. • Install water-efficient irrigation systems and devices, such as soil moisture–based irrigation controls. • Use reclaimed water for landscape irrigation in new developments and on public property where appropriate. Install the infrastructure to deliver and use reclaimed water. • Design buildings to be water efficient. Install water-efficient fixtures and appliances. • Use gray water. (Gray water is untreated household wastewater from bathtubs, showers, bathroom wash basins, and water from clothes washing machines.) For example, install dual plumbing in all new development allowing gray water to be used for landscape irrigation. • Restrict watering methods (e.g., prohibit systems that apply water to non-vegetated surfaces) and control runoff. • Restrict the use of water for cleaning outdoor surfaces and vehicles. • Implement low-impact development practices that maintain the existing hydrologic character of the site to manage stormwater and protect the environment. (Retaining stormwater runoff on site can drastically reduce the need for energy-intensive imported water at the site.) • Devise a comprehensive water conservation strategy appropriate for the project and location. The strategy may include many of the specific items listed above, plus other innovative measures that are appropriate to the specific project. • Provide education about water conservation and available programs and incentives. Solid Waste Measures • Reuse and recycle construction and demolition waste (including but not limited to soil, vegetation, concrete, lumber, metal, and cardboard). • Provide interior and exterior storage areas for recyclables and green waste and adequate recycling containers located in public areas. • Recover byproduct methane to generate electricity. • Provide education and publicity about reducing waste and available recycling services.				

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Number	Mitigation Measure	Responsible Party and Mitigation Timing	Monitoring Agency	Date of Completion	Date of Verification
	Transportation and Motor Vehicles • Limit idling time for commercial, non-refrigerated vehicles, including delivery and construction vehicles. Refrigerated delivery trucks may remain idling while at loading docks. • Use low or zero-emission vehicles, including construction vehicles. • Promote ride sharing programs; e.g., by designating a certain percentage of parking spaces for ride sharing vehicles, designating adequate passenger loading and unloading and waiting areas for ride sharing vehicles, and providing a web site or message board for coordinating rides. • Provide the necessary facilities and infrastructure to encourage the use of low or zero-emission vehicles (e.g., electric vehicle charging facilities and conveniently located alternative fueling stations). • Provide public transit incentives, such as free or low-cost monthly transit passes. • For commercial projects, provide adequate bicycle parking near building entrances to promote cyclist safety, security, and convenience. For large employers, provide facilities that encourage bicycle commuting, including, e.g., locked bicycle storage or covered or indoor bicycle parking. • Institute a telecommuter work program. Provide information, training, and incentives to encourage participation. Provide incentives for equipment purchases to allow high-quality teleconferences. • Provide information on all options for individuals and businesses to reduce transportation-related emissions. Provide education and information about public transportation. The increased efficiency demands associated with completion years beyond 2020 are not specified in terms of business as usual reductions, but would demand substantially greater reductions than 20 percent below business as usual. While the measures listed above would substantially reduce projects GHG emissions, the level to which they would achieve these reductions cannot be ascertained as they may be modified by any applicable standards that are adopted in the future. Furthermore, because of the increased demand for greater reductions for developments beyond the 2020 horizon year and the rapid development of better technology, the mechanism and technological applications that may be available and necessary to avoid conflict with the goals or				

Number	Mitigation Measure	Responsible Party and Mitigation Timing	Monitoring Agency	Date of Completion	Date of Verification
	strategies of AB 32 or related Executive Orders identification of adequate and effective measures is not feasible at this time. *Applies to Significant Impact 4.6-7.				
MM 4.7-1	Construction-related noise shall be limited adjacent to the J Street Marsh during the typical breeding season of January 15 to August 31. Construction activity adjacent to these sensitive areas must not exceed 60 dB(A) Leq. at any active nest within the marsh. Prior to issuance of a building permit, the project developer shall prepare and submit to the City for review and approval an acoustical analysis and nesting bird survey to demonstrate that the 60 dB(A) Leq. noise level is maintained at the location of any active nest within the marsh. If the noise threshold is anticipated to be exceeded at the nest location, the project developer shall construct noise barriers or implement other noise control measures to ensure that construction noise levels do not exceed the threshold. *Applies to Significant Impact 4.7-1.	Project Developer -Prior to First Building Permit	City		
MM 4.7-2	Prior to the approval of Design Review for the Pacifica project, the applicant shall submit a site plan for the project demonstrating to the satisfaction of the Director of Planning and Building of the City that outdoor use areas are not exposed to noise levels in excess of 65 dB(A) CNEL. Applicants shall submit project plans demonstrating that outdoor usable residential areas conform to the standards set by the City of Chula Vista General Plan. Prior to issuance of building permits, the developer shall install noise barriers that would reduce sound levels to 65 dB(A) CNEL or below at outdoor usable areas on the Pacifica site. To preserve a view, glass or Plexiglas with a minimum density of 3.5 pounds per square foot may be substituted for other construction materials. The barrier locations, heights, and lengths for the Pacifica development, as summarized in *Table 4.7-15* and illustrated on *Figure 4.7-10*, would achieve these reductions.	Applicant -Prior to Design Review Approval Developer -Prior to First Building Permit	City City		

TABLE 4.7-15
Barrier Locations, Heights, and Lengths For Rooftop Parapet

Barrier Location	Height (ft)	Length (ft)
Rooftop Parapet		
HD-1B: North Façade	5	224

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Number	Mitigation Measure	Responsible Party and Mitigation Timing	Monitoring Agency	Date of Completion	Date of Verification
	HD-1B: East Façade 6 243 HD-2A: East/South Façades 5 313 HD-2B: North Façade 5 128 HD-2B: East Façade 6 188 HD-3A: East Façade 5 215 HD-3A: South Façade 5 350 HD-4A: East Façade 5 264 HD-4A: South Façade 5 336 *Applies to Significant Impact 4.7-2.				
MM 4.7-3	Prior to the issuance of building permits for residential units adjacent to circulation element roadways in the Harbor District, the applicant shall perform and submit an acoustical analysis to the City, demonstrating that the proposed building plans provide interior noise levels due to exterior sources are 45 dB(A) CNEL or less in any habitable room. The analysis must also identify Sound Transmission Loss (STL) rates of each window. *Applies to Significant Impacts 4.7-3 and 4.7-7.	Applicant -Prior to First Building Permit	City		
MM 4.7-4	Prior to the approval of Design Review for the Pacifica project, the applicant shall submit a design plan for the project demonstrating to the satisfaction of the City's Director of Planning and Building that the noise level from operation of mechanical equipment will not exceed 50 dB(A) Leq. at any property line. Noise control measures may include, but are not limited to, the selection of quiet equipment, equipment setbacks, silencers, and/or acoustical louvers. Such measures must be designed and installed so as to achieve a cumulative sound level from mechanical equipment that does not exceed 40 dB(A) at 50 feet from the building façades adjacent to Marina Parkway, Street C, and J Street or 54 dB(A) at 50 feet from the building façades facing Street A. Prior to the approval of Design Review for the Pacific project, the applicant shall prepare and submit to the City for review and approval an acoustical analysis and nesting bird survey to demonstrate that operation of mechanical equipment will not exceed the 60 dB(A) Leq. noise level at the location of any active nest within the J Street Marsh. If the	Applicant -Prior to Design Review Approval Applicant -Prior to Design Review Approval	City City		

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Number	Mitigation Measure	Responsible Party and Mitigation Timing	Monitoring Agency	Date of Completion	Date of Verification
	noise threshold is anticipated to be exceeded at the nest location, the project developer shall construct noise barriers and/or implement noise control measures to maintain operational noise levels below the threshold. *Applies to Significant Impact 4.7-4.				
MM 4.7-5	To avoid significant impacts to the F&G Street Marsh and reduce the construction noise level to 60 dB(A) or below, the developer of Parcel H-3 shall install and place a 20-foot-high temporary noise barrier or wall along the northeast project property line and returns along the east and west property lines. This mitigation would be necessary for construction activity occurring within 800 feet of the habitat during the extended breeding season. As demonstrated on *Figure 4.7-11*, the barrier must be of solid construction, with no gaps or cracks through or below the wall, and must have a minimum density of 3.5 pounds per square foot. The barrier must block line-of-sight between the source and receiver and be long enough to prevent flanking around the ends. Prior to the start of construction, upon selection of a contractor and once specific equipment models and locations, phasing, and operational duration, etc. are known, a detailed analysis shall be conducted by the project developer and approved by the Port and/or City to determine proper placement of the temporary noise barrier. *Applies to Significant Impact 4.7-5.	Developer -Prior to start of construction Developer -Prior to start of construction	Port and/or City Port and/or City		
MM 4.7-6	Prior to the approval of Design Review, the applicant shall submit a site plan for the project demonstrating to the satisfaction of the Director of Planning and Building of the City and the Port, that outdoor use areas are not exposed to noise levels in excess of 65 dB(A) CNEL. As part of CEQA review for subsequent execution of actions associated with project construction phases, applicants shall submit project plans demonstrating that outdoor usable residential areas conform to the standards set by the City of Chula Vista General Plan. Prior to the issuance of building permits or certificates of occupancy, the developer shall install noise barriers that would reduce sound levels to 65 dB(A) CNEL or below at ground-level noise sensitive receptors on the project site. To preserve a view, glass or Plexiglas with a minimum density of 3.5 pounds per square foot may be substituted for	Applicant -Prior to Design Review Approval Developer -Prior to First Building Permit or Certificate of Occupancy			

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Number	Mitigation Measure	Responsible Party and Mitigation Timing	Monitoring Agency	Date of Completion	Date of Verification
	other construction materials. *Applies to Significant Impact 4.7-6.				
MM 4.7-7	To avoid significant impacts to the F & G Street Marsh and reduce the noise level at habitat to 60 dB(A) or below, the developer shall install a 3-foot-high noise barrier along the east right-of-way of E Street for the extent of the habitat, as shown on *Figure 4.7-12*. The barrier must be of solid construction, with no gaps or cracks through or below the wall, and have a minimum density of 3.5 pounds per square foot. The barrier must block line-of-sight between the source and receiver and be long enough to prevent flanking around the ends. *Applies to Significant Impact 4.7-8.	Developer - Prior to start of construction	City		
MM 4.7-8	To avoid significant construction-related noise impacts, the following measures shall be followed: • Construction activity shall be prohibited Monday through Friday from 10:00 P.M. to 7:00 A.M., and Saturday and Sunday from 10:00 P.M. to 8:00 A.M., pursuant to the Chula Vista Municipal Code Section 17.24.050 (Paragraph J). • All stationary noise generating equipment, such as pumps and generators, shall be located as far as possible from noise sensitive receptors, as practicable. Where practicable, noise-generating equipment shall be shielded from noise sensitive receptors by attenuating barriers or structures. Stationary noise sources located less than 200 feet from sensitive receptors shall be equipped with noise reducing engine housings. Water tanks, equipment storage, staging, and warm-up areas shall be located as far from noise sensitive receptors as possible. • All construction equipment powered by gasoline or diesel engines shall have sound control devices at least as effective as those originally provided by the manufacturer; no equipment shall be permitted to have an unmuffled exhaust. • Any impact tools used during demolition of existing infrastructure shall be shrouded or shielded, and mobile noise generating equipment and machinery shall be shut off when not in use. • Construction vehicles accessing the site shall be required to use the shortest possible route to and from I-5, provided the route does not expose additional receptors to noise.	Developer -During construction	City		

Number	Mitigation Measure	Responsible Party and Mitigation Timing	Monitoring Agency	Date of Completion	Date of Verification
	• Construction equipment shall be selected as those capable of performing the necessary tasks with the lowest sound level and the lowest acoustic height possible to perform the required construction operation. • Construction equipment shall be operated and maintained to minimize noise generation. Equipment shall be kept in good repair and fitted with "manufacturer-recommended" mufflers. *Applies to Significant Impacts 4.7-9 and 4.7-10.				
MM 4.7-9	Construction-related noise shall be limited during the typical breeding season of January 15 to August 31 adjacent to the Sweetwater Marsh NWR and F&G Street Marsh. The current accepted noise threshold is 60 dB(A) Leq.; thus construction activity shall not exceed this level, or ambient noise levels if higher than 60 dB(A) during the breeding season. If construction does occur within the breeding season or adjacent to the marshes, the project developer shall prepare and submit an acoustical analysis to the Port and/or City that shall determine whether noise barriers would be required to reduce the expected noise levels below the threshold. If noise barriers, construction activities, or other methods are unable to result in a level of noise below the threshold, construction in these areas shall be delayed until the end of the breeding season. *Applies to Significant Impact 4.7-11.	Developer -Prior to start of construction	Port and/or City		
MM 4.8-1	Prior to construction in any areas with suitable nesting locations for raptors (such as trees, utility poles, or other suitable structures) and, if grading or construction occurs during the breeding season for nesting raptors (January 15 through July 31), the project developer(s) within the Port's or City's jurisdiction shall retain a qualified, Port- or City-approved biologist, as appropriate, who shall conduct a pre-construction survey for active raptor nests. The pre-construction survey must be conducted no more than 10 calendar days prior to the start of construction, the results of which must be submitted to the Port or City, as appropriate, for review and approval. If an active nest is found, an appropriate setback distance will be determined in consultation with the applicant, Port or City, USFWS, and CDFG. The construction setback shall be implemented until the young are completely independent of the nest or the nest is relocated with the approval of the USFWS and CDFG. A bio-monitor shall be present on site during initial grubbing and clearing of vegetation to ensure that perimeter construction fencing is being maintained. A bio-monitor shall also perform periodic inspections of the construction site during all	Developer(s) -Prior to start of construction	Port or City in Consultation with USFWS and CDFG		

Number	Mitigation Measure	Responsible Party and Mitigation Timing	Monitoring Agency	Date of Completion	Date of Verification
	major grading to ensure that impacts to sensitive plants and wildlife are minimized. Depending on the sensitivity of the resources, the City and/or Port shall define the frequency of field inspections. The bio-monitor shall send a monthly monitoring letter report to the City and/or Port detailing observations made during field inspections. The bio-monitor shall also notify the City and/or Port immediately if clearing is done outside of the permitted project footprint. *Applies to Significant Impact 4.8-1.				
MM 4.8-2	Prior to construction in any areas with suitable nesting habitat for burrowing owl and, if grading or construction occurs during the breeding season for the burrowing owl (January 15 through July 31), the project developer(s) within the Port's or City's jurisdiction, as appropriate, shall retain a qualified biologist, who shall be approved by the Port or City, respectively, to conduct a pre-construction survey within all suitable habitat prior to any grading activities. The pre-construction survey must be conducted no more than 10 calendar days prior to the start of construction, the results of which must be submitted to the Port or City, as appropriate, for review and approval. If an active burrow is detected during the breeding season of January 15 to July 31, construction setbacks of 300 feet from occupied burrows shall be implemented until the young are completely independent of the nest. If an active burrow is found outside of the breeding season, or after an active nest is determined to no longer be active by a qualified biologist, the burrowing owl would be passively relocated according to the guidelines provided by CDFG (1995) and in coordination with CDFG. A bio-monitor shall be present on site during initial grubbing and clearing of vegetation to ensure that perimeter construction fencing is being maintained. A bio-monitor shall also perform periodic inspections of the construction site during all major grading to ensure that impacts to sensitive plants and wildlife are minimized. Depending on the sensitivity of the resources, the City and/or Port shall define the frequency of field inspections. The bio-monitor shall send a monthly monitoring letter report to the City and/or Port detailing observations made during field inspections. The bio-monitor shall also notify the City and/or Port immediately if clearing is done outside of the permitted project footprint. *Applies to Significant Impact 4.8-2.	Developer(s) -Prior to start of construction	Port or City in Consultation with CDFG		
MM 4.8-3	If grading or construction occurs during the breeding season for migratory birds (January 15 through August 31), the project developer(s) shall retain a qualified biologist, approved	Developer -Prior to start of	Port or City in		

Number	Mitigation Measure	Responsible Party and Mitigation Timing	Monitoring Agency	Date of Completion	Date of Verification
	by the Port/City (depending on the jurisdiction), to conduct a pre-construction survey for nesting migratory birds. The pre-construction survey must be conducted no more than 10 calendar days prior to the start of construction, the results of which must be submitted to the Port or City, as appropriate, for review and approval. If active nests are present, the Port will consult with USFWS and CDFG to determine the appropriate construction setback distance. Construction setbacks shall be implemented until the young are completely independent of the nest or relocated with the approval of the USFWS and CDFG. A bio-monitor shall be present on site during initial grubbing and clearing of vegetation to ensure that perimeter construction fencing is being maintained. A bio-monitor shall also perform periodic inspections of the construction site during all major grading to ensure that impacts to sensitive plants and wildlife are minimized. Depending on the sensitivity of the resources, the City and/or Port shall define the frequency of field inspections. The bio-monitor shall send a monthly monitoring letter report to the City and/or Port detailing observations made during field inspections. The bio-monitor shall also notify the City and/or Port immediately if clearing is done outside of the permitted project footprint. *Applies to Significant Impact 4.8-3.	construction	Consultation with USFWS and CDFG		
MM 4.8-4	Prior to construction or grading in any areas of suitable nesting or foraging habitat for light-footed clapper rail, and, regardless of the time of year, the project developer(s) shall retain a qualified biologist who shall be approved by the Port or City, as appropriate, and shall be present during removal of southern coastal salt marsh vegetation within the inlet to the F & G Street Marsh to ensure that there are no direct impacts to foraging light-footed clapper rails. If a light-footed clapper rail is encountered, construction will be temporarily halted until the bird leaves the area of construction. A bio-monitor shall be present on site during initial grubbing and clearing of vegetation to ensure that perimeter construction fencing is being maintained. A bio-monitor shall also perform periodic inspections of the construction site during all major grading to ensure that impacts to sensitive plants and wildlife are minimized. Depending on the sensitivity of the resources, the City and/or Port shall define the frequency of field inspections. The bio-monitor shall send a monthly monitoring letter report to the City and/or Port detailing observations made during field inspections. The bio-monitor shall also notify the City and/or Port immediately if clearing is done outside of the permitted project footprint. The project developer(s) shall consult with the U.S. Fish and Wildlife Service prior to impacting any	Developer -Prior to start of construction	Port or City in coordination with qualified biological monitor		

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	areas of suitable nesting or foraging habitat for light-footed clapper rail so as not to prevent any unauthorized take of the light-footed clapper rail. Any take must be authorized by U.S. Fish and Wildlife Service. *Applies to Significant Impact 4.8-4.				
MM 4.8-5	Prior to issuance of any clearing and grubbing or grading permits within the jurisdiction of the City, the project applicant within the City's jurisdiction shall be required to obtain a HLIT permit pursuant to Section 17.35 of the Chula Vista Municipal Code for impacts to Covered Species and Vegetation Communities protected under the City's MSCP Subarea Plan. In addition, the MSCP requires additional protective measures for the western burrowing owl, as identified in Mitigation Measure 4.8-2 above. *Applies to Significant Impact 4.8-5.	Applicant - Prior to First Clearing, Grubbing, or Grading Permit	City		
MM 4.8-6	**A. Construction-related noise.** Construction-related noise shall be limited adjacent to the Sweetwater Marsh and South San Diego Bay Units of the San Diego Bay National Wildlife Refuge, F & G Street Marsh, the mudflats west of the Sweetwater District, and the J Street Marsh during the general avian breeding season of January 15 to August 31. During the avian breeding season, noise levels from construction activities must not exceed 60 dB(A) Leq., or ambient noise levels if higher than 60 dB(A). The project developer(s) shall prepare and submit to the Port/City for review and approval an acoustical analysis and nesting bird survey to demonstrate that the 60 dB(A) Leq. noise level is maintained at the location of any active nest within the marsh. If noise attenuation measures or modifications to construction activities are unable to reduce the noise level below 60 dB(A), either the developer(s) must immediately consult with the Service to develop a noise attenuation plan or construction in the affected areas must cease until the end of the breeding season. Because potential construction noise levels above 60 dB(A) L_{eq} have been identified at the F & G Street Marsh, specific noise attenuation measures have been identified and are addressed in *Section 4.7* of the EIR. **B. Perching of raptors.** To reduce the potential for raptors to perch within the landscaping and hunt sensitive bird species from those perches, the following design criteria shall be identified in the CVBMP master landscape plan and incorporated into all building and landscape plans with a line of site to the City's MSCP Preserve buffer zones, and on-site open space:	Developer -Prior to start of construction Developer -Prior to Design Review Approval	Port or City Port or City		

Number	Mitigation Measure	Responsible Party and Mitigation Timing	Monitoring Agency	Date of Completion	Date of Verification
	• Light posts shall have anti-perching spike strips along any portions that would be accessible to raptors. • The top edge of buildings shall be rounded with sufficient radius to reduce the amount of suitable perching building edges. • If building tops are hard corners, spike strips shall be used to discourage raptors from perching and building nests. • Decorative eaves, ledges, or other protrusions shall be designed to discourage perching by raptors. • To the extent practicable, buildings on Parcels S-1 and S-4 will be oriented to reduce raptor perches within the line of sight to adjacent sensitive habitats. **C. Raptor management and monitoring.** Prior to the issuance of a Coastal Development Permit, the project developer shall prepare a raptor nest management plan to be implemented once the project is built. A biologist retained by the project developer and approved by the Port and/or City shall be responsible for monitoring the buildings and associated landscaping to determine whether raptor nests have been established on Port or City lands within 500 feet of the Preserves. If a nest is discovered, the nest would be removed in consultation with USFWS, CDFG, and the Port/City, outside of the raptor breeding season of January 15 to July 31. **D. Lighting.** The following mitigation measure is required during all phases of development to ensure that outdoor lighting throughout the project area is minimized upon any of the habitat buffers, Preserve areas, habitats, or open water. Prior to issuance of a building permit, each applicant within the Port's or City's jurisdiction shall prepare a lighting design plan, including a photometric analysis, to be reviewed by the Port or City, as appropriate. Each plan shall include the following features, as appropriate to the specific locations: • All exterior lighting shall be directed away from the habitat buffers, Preserve Areas, habitats, or open water, wherever feasible and consistent with public safety. Where necessary, lighting of all developed areas adjacent to the habitat buffers, Preserve	Developer -Prior to First Coastal Development Permit Developer -Prior to First Building Permit	Port or City in Consultation with biological monitor, USFWS, and CDFG Port or City		

Number	Mitigation Measure	Responsible Party and Mitigation Timing	Monitoring Agency	Date of Completion	Date of Verification
	Areas, habitats, or open water shall provide adequate shielding with non-invasive plant materials (preferably native), berming, and/or other methods to protect the habitat buffers, Preserve Areas, habitats, or open water and sensitive species from night lighting. The light structure themselves shall have shielding (and incorporate anti-raptor perching criteria); but the placement of the light structures shall also provide shielding from wildlife habitats and shall be placed in such a way as to minimize the amount of light reaching adjacent habitat buffers, Preserve Areas, habitats, or open water. This includes street lights, pedestrian and bicycle path lighting, and any recreational lighting. • All exterior lighting immediately adjacent to habitat buffers, Preserve Areas, habitats, or open water shall be low-pressure sodium lighting or other approved equivalent. • No sports field lights shall be planned on the recreation fields near the J Street Marsh or the Sweetwater Marsh. • All roadways will be designed, and where necessary edges bermed, to ensure automobile light penetration in the Wildlife Habitat Areas, as defined in Mitigation Measure 4.8-7, will be minimized, subject to applicable City and Port roadway design standards. • Explicit lighting requirements to minimize impacts to Wildlife Habitat Areas will be devised and implemented for all Bayfront uses including commercial, residential, municipal, streets, recreational, and parking lots. Beacon and exterior flood lights are prohibited where they would impact a Wildlife Habitat Area and use of this lighting should be minimized throughout the project. All street and walkway lighting should be shielded to minimize sky glow. • To the maximum extent feasible, all external lighting will be designed to minimize any impact to Wildlife Habitat Areas, and operations and maintenance conditions and procedures will be devised to ensure appropriate long-term education and control. To the maximum extent feasible, ambient light impacts to the Sweetwater or J Street Marshes will be minimized. • In Sweetwater and Otay District parks, lighting will be limited to that which is necessary for security purposes. Security lighting will be strictly limited to that required by applicable law enforcement requirements. All lighting proposed for the Sweetwater and Otay District parks and the shoreline promenade will be placed only where needed for human safety. Lights will be placed on low-standing bollards, shielded, and flat bottomed, so the illumination is directed downward onto the				

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	walkway and does not scatter. Lighting that emits only a low-range yellow light will be used since yellow monochromatic light is not perceived as natural light by wildlife and minimized eco-disruptions. No night lighting for active sports facilities will be allowed. • Sweetwater and Otay District parks will open and close in accordance with Port park regulations. • Laser light shows will be prohibited. • Construction lighting will be controlled to minimize Wildlife Habitat Area impacts. **E. Noise.** ***Construction Noise.*** Mitigation Measure 4.8-6, and the measures outlined in *Section 4.7, Noise,* shall be implemented in order to reduce potential indirect construction-noise impacts to sensitive species within the F & G Street Marsh and J Street Marsh. In order to further reduce construction noise, equipment staging areas shall be centered away from the edges of the project, and construction equipment shall be maintained regularly and muffled appropriately. In addition, construction noise must be controlled to minimize impacts to Wildlife Habitat Areas. ***Operational Noise.*** Noise levels from loading and unloading areas; rooftop heating, ventilation, and air conditioning facilities; and other noise-generating operational equipment shall not exceed 60 dBA Leq. at the boundaries of the F & G Street Marsh and the J Street Marsh during the typical breeding season of January 15 to August 31. ***Fireworks.*** A maximum of three (3) fireworks events can be held per year, all outside of Least Tern nesting season except 4th of July, which may be allowed if in full regulatory compliance and if the nesting colonies are monitored during the event and any impacts reported to the Wildlife Advisory Committee so they can be addressed. All shows must comply with all applicable water quality and species protection regulations. All shows must be consistent with policies, goals, and objectives in the Natural Resource Management Plan (NRMP), described in Mitigation Measure 4.8-7. **F. Invasives.** All exterior landscaping plans shall be submitted to the Port or City, as appropriate, for review and approval to ensure that no plants listed on the California	Applicant -Prior to Design Review Approval See MM 4.5-2 through 4.5-4	City		

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	Invasive Plan Council (Cal-IPC) List of Exotic Pest Plants of Greatest Ecological Concern in California (*Appendix 4.8-7* of this Final EIR), the California Invasive Plant Inventory Database, Appendix N of the City's MSCP Subarea Plan, or any related updates shall be used in the Proposed Project area. Any such invasive plant species that establishes itself within the Proposed Project area will be removed immediately to the maximum extent feasible and in a manner adequate to prevent further distribution into Wildlife Habitat Areas. The following landscape guidelines will apply to the Proposed Project area: • Only designated native plants will be used in No Touch Buffer Areas, habitat restoration areas, or in the limited and transitional zones of Parcel SP-1 adjacent to Wildlife Habitat Areas. • Non-native plants will be prohibited adjacent to Wildlife Habitat Areas and will be strongly discouraged and minimized elsewhere where they will provide breeding of undesired scavengers. • Landscaping plans for development projects adjacent to ecological buffers and/or the MSCP Preserve shall include native plants that are compatible with native vegetation located within the ecological buffers and/or MSCP Preserve. • No trees will be planted in the No Touch Buffer Areas or directly adjacent to a National Wildlife Refuge, J Street Marsh, or SP-2 areas where there is no Buffer Area.	Port/City			
	G. Toxic Substances and Drainage. Implementation of general water quality measures outlined in Mitigation Measures 4.5-2 through 4.5-4, identified *in Section 4.5, Hydrology/Water Quality,* would reduce impacts associated with the release of toxins, chemicals, petroleum products, and other elements that might degrade or harm the natural environment to below a level that is significant, and would provide benefits to wetland habitats. As a reference, these mitigation measures are repeated below and apply to the Port and City: • If contaminated groundwater is encountered, the project developer shall treat and/or dispose of the contaminated groundwater (at the developer's expense) in accordance		Port/City in Consultation with USFWS and CDFG		

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	with NPDES permitting requirements, which includes obtaining a permit from the Industrial Wastewater Control Program to the satisfaction of the RWQCB. The project developer(s) shall demonstrate satisfaction of all permit requirements prior to issuance of a grading permit. • Prior to the discharge of contaminated groundwater for all construction activities, should flammables, corrosives, hazardous wastes, poisonous substances, greases and oils, and other pollutants exist on site, a pre-treatment system shall be installed to pre-treat the water to the satisfaction of the RWQCB before it can be discharged into the sewer system. • Prior to the issuance of a grading, excavation, dredge/fill, or building permit for any parcel, the applicant shall submit a Spill Prevention/Contingency Plan for approval by the Port or City as appropriate. The plan shall: o Ensure that hazardous or potentially hazardous materials (e.g., cement, lubricants, solvents, fuels, other refined petroleum hydrocarbon products, wash water, raw sewage) that are used or generated during the construction and operation of any project as part of the Proposed Project shall be handled, stored, used, and disposed of in accordance with NPDES permitting requirements and applicable federal, state, and local policies o Include material safety data sheets o Require 40 hours of worker training and education as required by the Occupational Safety and Health Administration o Minimize the volume of hazardous or potentially hazardous materials stored at the site at any one time o Provide secured storage areas for compatible materials, with adequate spill contaminant o Maintain all required records, manifest and other tracking information in an up-to-date and accessible form or location for review by the Port or City o Demonstrate compliance with all local, state, and federal regulations regarding hazardous materials and emergency response. • Prior to issuance of a permit by USACE for dredge and/or fill operations in the Bay or Chula Vista Harbor, the applicant shall conduct a focused sediment investigation and submit it to USACE, EPA, and RWQCB for review and approval. The applicant shall then determine the amount of bay sediment that requires remediation and develop a specific work plan to remediate bay sediments in accordance with permitting				

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	requirements of the RWQCB. The work plan shall include but not be limited to: dredging the sediment, analyzing the nature and extent of any contamination, and allowing it to drain. Pending the outcome of the analytical results, the RWQCB and the Port shall prescribe the appropriate method for disposition of any contaminated sediment. • Prior to issuance of a grading permit for marina redevelopment on Parcels HW-1 and HW-4, the developer shall submit a work plan for approval by the RWQCB and Port/City that requires the implementation of BMPs, including the use of silt curtains during in-water construction to minimize sediment disturbances and confine potentially contaminated sediment if contaminated sediment exists. If a silt curtain should be necessary, the silt curtain shall be anchored along the ocean floor with weights (i.e., a chain) and anchored to the top with a floating chain of buoys. The curtain shall wrap around the area of disturbance to prevent turbidity from traveling outside the immediate project area. Once the impacted region resettles, the curtains shall be removed. If the sediment would be suitable for ocean disposal, no silt curtain shall be required. However, if contaminants are actually present, the applicant would be required to provide to the RWQCB and Port/City an evaluation showing that the sediment would be suitable for ocean disposal. • In addition, the following measures will apply: o Vegetation-based storm water treatment facilities, such as natural berms, swales, and detention areas are appropriate uses for Buffer Areas so long as they are designed using native plant species and serve dual functions as habitat areas. Provisions for access for non-destructive maintenance and removal of litter and excess sediment will be integrated into these facilities. In areas that provide for the natural treatment of runoff, cattails, bulrush, mulefat, willow, and the like are permissible. o Storm water and non-point source urban runoff into Wildlife Habitat Areas must be monitored and managed so as to prevent unwanted ecotype conversion or weed invasion. A plan to address the occurrence of any erosion or type conversion will be developed and implemented, if necessary. Monitoring will include an assessment of stream bed scouring and habitat degradation, sediment accumulation, shoreline erosion and stream bed widening, loss of aquatic species, and decreased base flow. o The use of persistent pesticides or fertilizers in landscaping that drains into				

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	Wildlife Habitat Areas is prohibited. Integrated Pest Management must be used in all outdoor, public, buffer, habitat, and park areas. o Fine trash filters (as approved by the agency having jurisdiction over the storm drain) are required for all storm drain pipes that discharge toward Wildlife Habitat Areas. **H. Public Access.** In addition to site-specific measures designed to prevent or minimize the impact to adjacent open space preserve areas from humans and domestic animals, the following would prevent or minimize the impact to adjacent open space preserve areas from humans and domestic animals. ***Buffers:*** All buffers shall be established and maintained by the Port/City. Appropriate signage will be provided at the boundary and within the buffer area to restrict public access. Within the western 200-foot width of Parcel SP-1, a portion of the buffer areas would be re-contoured and restored to provide habitat consistent with the native vegetation communities in the adjacent open space preserve areas and to provide mitigation opportunities for project impacts. *Appendix 4.8-8* provides more specific detail of the mitigation opportunities available within the buffer area included within the Proposed Project. *Table 4.8-5* provides a breakdown of the available maximum mitigation acreage that is available within the buffer. *Figure 4.8-23* depicts the conceptual mitigation opportunities within the Sweetwater District. *Figures 4.8-24* and *4.8-25* display the cross section of the buffer zones in the Sweetwater District indicated on the conceptual illustration. *Figure 4.8-26* depicts the conceptual mitigation opportunities within the Otay District. The proposed restoration includes creating and restoring coastal salt marsh and creating riparian scrub vegetation communities. In addition, the coastal brackish marsh, disturbed riparian habitat, and wetland would be enhanced. The first 200 feet of buffer areas adjacent to sensitive habitats, or full width in the case of reduced buffer areas, will be maintained as a "no touch" buffer and will not contain any trails or overlooks. Fencing, consisting of a 6-foot-high vinyl-coated chain link fence will be installed within the buffer area to prevent unauthorized access. Fencing in Parcel SP-1 will be installed prior to occupancy of the first buildings constructed in Phase I. District enforcement personnel will patrol these areas and be trained in the importance of preventing human and domestic animal encroachment in these areas. In addition, signs will be installed adjacent to these sensitive areas that provide contact information for the				

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Harbor Police to report trespassing within the sensitive areas.

TABLE 4.8-5

Potential Mitigation Acreage Available for Proposed Impacts to Vegetation Communities and Land Cover Types for Chula Vista Bayfront (acres)

Habitat	District/Area	Created	Restored	Enhanced	Total Credits
Coastal salt marsh	Sweetwater	4.87			5.97
	Otay	4.54			4.54
Coastal brackish marsh	Sweetwater			3.40	1.70
Riparian	Sweetwater			3.03	1.52
	Otay	1.99			1.99
Coastal salt marsh	F & G Street Marsh		5.02		5.02
Wetland	Sweetwater			2.14	1.07
TOTAL WETLAND ACREAGE		**11.40**	**5.02**	**8.57**	**25.00**
TOTAL WETLAND CREDITS[1]		**11.40**	**5.02**	**4.29**	**20.71**
CSS/Native Grassland Restoration	Sweetwater		17.73		17.73
	Otay		1.99		1.99
	F & G Street Marsh		2.49		2.49
TOTAL UPLAND ACREAGE		**0**	**22.21**	**0**	**22.21**
TOTAL UPLAND CREDITS[1]		**0**	**22.21**	**0**	**22.21**

[1]Credits are based on an assumption that habitat creation and restoration will receive a 1:1 mitigation credit and enhancement will receive a 0.5:1 mitigation credit.

Impacts to disturbed coastal sage scrub would be mitigated by the restoration of a coastal sage scrub/native grassland habitat also within this buffer. There is the potential to provide a maximum of 20.71 acres of mitigation credit for impacts to wetland habitats and 22.21 acres for impacts to upland habitats. This would exceed the required mitigation needed for impacts within the Port's and City's jurisdiction.

A detailed coastal sage scrub (CSS) and maritime succulent scrub (MSS) restoration plan that describes the vegetation to be planted shall be prepared by a Port- or City-approved biologist and approved by the Port or City, as appropriate. The City or Port shall develop guidelines for restoration in consultation with USFWS and CDFG.

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	The restoration plan shall detail the site selection process; shall propose site preparation techniques, planting palettes, implementation procedures, and monitoring and maintenance practices; and shall establish success criteria for each mitigation site. Typical success criteria may include percent canopy cover, percent of plant survival, and percent of native/non-native canopy cover. A minimum 5-year maintenance and monitoring period would be implemented following installation to ensure each area is successful. The restoration plan shall address monitoring requirements and specify when annual reports are to be prepared and what they shall entail. Qualitative and quantitative assessments of the site conditions are expected. If the mitigation standards have not been met in a particular year, contingency measures shall be identified in the annual report and remediation will occur within 3 months from the date the report is submitted. The project developer(s) shall be responsible for implementing the proposed mitigation measures and ensuring that the success criteria are met and approved by the City or Port, as appropriate, and other regulatory agencies, as may be required. ***Strategic Fencing.*** *Temporary Fencing.* Prior to issuance of any clearing and grubbing or grading permits, temporary orange fencing shall be installed around sensitive biological resources on the project site that will not be impacted by the Proposed Project. Silt fencing shall also be installed along the edge of the SDBNWR during grading within the western portion of the ecological buffer. In addition, the applicant must retain a qualified biologist to monitor the installation and ongoing maintenance of this temporary fencing adjacent to all sensitive habitat. This fencing shall be shown on both grading and landscape plans, and installation and maintenance of the fencing shall be verified by the Port's or City's Mitigation Monitor, as appropriate. *Permanent Fencing.* Prior to approval of landscape plans, a conceptual site plan or fencing plan shall be submitted to the Port or City, as appropriate, for review and approval to ensure areas designated as sensitive habitat are not impacted. Fencing shall be provided within the buffer area only, and not in sensitive habitat areas.				

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	Domestic Animals. In all areas of the Chula Vista Bayfront, especially on the foot path adjacent to the marsh on the Sweetwater District property, mandatory leash laws shall be enforced. Appropriate signage shall be posted indicating human and domestic animal access is prohibited within the designated Preserve areas. ***Trash.*** Illegal dumping and littering shall be prohibited within the Preserve areas. Throughout the Proposed Project site, easily accessible trash cans and recycling bins shall be placed along all walking and bike paths, and shop walkways. These trash cans shall be "animal-proof" and have self-closing lids, to discourage scavenger animals from foraging in the cans. The trash cans shall be emptied daily or more often if required during high use periods. Buildings and stores shall have large dumpsters in a courtyard or carport that is bermed and enclosed. This ensures that, if stray trash falls to the ground during collection, it does not blow into the Bay or marshes. ***Training.*** Pursuant to permitting requirements of the Resource Agencies, pre-construction meetings will take place with all personnel involved with the project, to include training about the sensitive resources in the area. **I. Boating Impacts.** All boating, human and pet intrusion must be kept away from F & G Street channel mouth and marsh. • Water areas must be managed with enforceable boating restrictions. The Port will exercise diligent and good faith efforts to enter into a cooperative agreement with the Resource Agencies and Coast Guard to ensure monitoring and enforcement of no-boating zones and speed limit restrictions to prevent wildlife disturbances. • No boating will be allowed in vicinity of the J Street Marsh or east of the navigation channel in the Sweetwater District during the fall and spring migration and during the winter season when flocks of bird are present. • All rentals of jet-skis and other motorized personal watercraft (PWCs), as defined in Harbors and Navigations Code Section 651(s) will be prohibited in the Proposed Project area. • Use of PWCs will be prohibited in Wildlife Habitat Areas, subject to applicable law. • A five (5) mile-per-hour speed limit will be enforced in areas other than the				

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	navigation channels. • Nothing in this mitigation measure shall preclude bona fide research, law enforcement, or emergency activities. *Applies to Significant Impacts 4.8-6 and 4.8-7.				
MM 4.8-7	Mitigation Measure 4.8-7 is intended to provide additional measures to reduce further the indirect impacts to biological resources already addressed in and reduced to below a level of significance by Mitigation Measure 4.8-6. This additional measure provides for the creation, implementation, funding, and enforcement of a Natural Resources Management Plan ("NRMP"), good faith efforts to enter into a cooperative management agreement with the USFWS or other appropriate agency or organization, restoration priorities, the creation of a South Bay Wildlife Advisory Group, and education, as follows: A. Natural Resources Management Plan: In recognition of the sensitivity of the natural resources and the importance of protection, restoration, management and enforcement in protecting those resources, the Port, City and RDA will cause to be prepared an NRMP to be prepared in accordance with the mitigation measure. The NRMP will be designed to achieve the Management Objectives (defined below) for the Wildlife Habitat Areas (defined below). The NRMP will be an adaptive management plan, reviewed and amended as necessary by the Port and City in compliance with the process described in Section 4.8-7D of this measure. a. "Wildlife Habitat Areas" are defined as: i. All National Wildlife refuge lands, currently designated and designated in the future, in the South San Diego Bay and Sweetwater Marsh National Wildlife Refuge Units. National Wildlife Refuge lands are included in the definition of Wildlife Habitat Areas for the sole purpose of addressing adjacency impacts and not for the purpose of imposing affirmative resource management obligations with respect to the areas within the National Wildlife Refuge lands. ii. All Port designated lands and open water areas in the Conservation Land Use Designations of Wetlands, Estuary, and Habitat Replacement as depicted in the Draft Precise Plan for Planning District 7. iii. Parcels 1g and 2a from the City's Bayfront Specific Plan.	Port -Prior to start of construction	Port		

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	iv. The Wildlife Habitat Areas are depicted on Exhibit 1 to the MMRP. v. No Touch Buffer areas as depicted on Exhibit 2 to the MMRP. b. NRMP Management Objectives for Wildlife Habitat Areas: Taking into consideration the potential changes in functionality of Wildlife Habitat Areas due to rising sea levels, the NRMP will promote, at a minimum, the following objectives ("Management Objectives") for the Wildlife Habitat Areas: i. Long term protection, conservation, monitoring, and enhancement of: 1. Wetland habitat, with regard to gross acreage as well as ecosystem structure, function and value. 2. Coastal sage and coastal strand vegetation. 3. Upland natural resources for their inherent ecological values, as well as their roles as buffers to more sensitive adjacent wetlands. Upland areas in the Sweetwater and Otay Districts will be adaptively managed to provide additional habitat or protection to create appropriate transitional habitat during periods of high tide, taking into account future sea level rise. ii. Preservation of the biological function of all Bayfront habitats serving as avifauna for breeding, wintering, and migratory rest stop uses. iii. Protection of nesting, foraging, and rafting wildlife from disturbance. iv. Avoidance of actions within the Proposed Project area that would adversely impact or degrade water quality in San Diego Bay or watershed areas or impair efforts of other entities for protection of the watershed. v. Maintenance and improvement of water quality where possible and coordination with other entities charged with watershed protection activities. c. Implementation of NRMP Management Objectives: NRMP will include a plan for achieving Management Objectives as they related to the Buffer Areas and Wildlife Habitat Areas ("WHA's") and the Proposed Project area, which will: i. Ensure the Port, City and RDA are not required to expend funds for NRMP implementation until project-related revenues are identified and impacts initiated. ii. Require coordination with the Resource Agencies of the Port's City's and Resource Agencies' respective obligations with respect to the Buffer Areas and Wildlife Habitat Areas. iii. Designate "No Touch" Buffer Areas as that term is defined and described in this				

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	Final EIR. Such areas will contain contiguous fencing designed specifically to limit the movement of domesticated, feral, and nuisance predators (e.g. dogs, cats, skunks, opossums and other small terrestrial animals [collectively, "Predators"]) and humans between developed park and No Touch Buffer Areas and Wildlife Habitat Areas. The fence will be at a minimum 6-foot high, black vinyl chain link fence or other suitable barrier (built to the specifications described in this Final EIR). Fence design may include appropriate locked access points for maintenance and other necessary functions. Installation of the fence will include land contouring to minimize visual impacts of the fence. The installation of such fencing in the Sweetwater and Harbor Districts must be completed prior to the issuance of Certificates of Occupancy for development projects on either Parcel H-3 or H-23 and in conjunction with the development or road improvements in the Sweetwater District., with the exception of Parcel S-4 which will retain the existing fencing until that parcel is redeveloped and the fencing of the No Touch Buffer installed. iv. Prohibit active recreation, construction of any road (whether paved or not), within No Touch Buffer Areas, Limited Use Buffer Areas, and Transition Buffer Areas as that term is defined and described in this Final EIR, with the exception of existing or necessary access points for required maintenance. v. Result in the fencing of No Touch Buffer Areas including, without limitation, fencing necessary to protect the Sweetwater Marsh and the Sweetwater parcel tidal flats, the J Street Marsh next to the San Diego Bay Refuge and the north side of Parcel H-3. vi. Include additional controls and strategies restricting movement of humans and Predators into sensitive areas beyond the boundaries of the designated Buffer Areas. vii. Require the Recreational Vehicle Park to install fencing or other barriers sufficient to prevent passage of Predators and humans into sensitive adjacent habitat. viii. Require all dogs to be leashed in all areas of the Proposed Project at all times except in any designated and controlled off-leash areas. ix. Impose and enforce restrictions on all residential development to keep cats and dogs indoors or on leashes at all times. Residential developments will be required to provide education to owners and/or renters regarding the rules and restrictions regarding the keeping of pets.				

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	d. Walkway and Path Design: Detail conditions and controls applicable to the walkways, paths, and overlooks near Wildlife Habitat Areas and outside of the No Touch Buffer Areas in accordance with the following: i. Alignment, design, and general construction plans of walkways and overlooks will be developed to minimize potential impacts to Wildlife Habitat Areas. ii. Path routes will be sited with appropriate setbacks from Wildlife Habitat Areas. iii. Paths running parallel to shore or marsh areas that will cause or contribute to bird flushing will be minimized throughout the Proposed Project. iv. Walkways and overlooks will be designed to minimize and eliminate, where possible, perching opportunities for raptors and shelter for skunks, opossums or other Predators. v. Walkways and overlooks that approach sensitive areas must be blinded, raised, or otherwise screened so that birds are not flushed or frightened. In general, walkway and overlook designs will minimize visual impacts on the Wildlife Habitat Areas of people on the walkways. e. Predator Management: The NRMP will include provisions designed to manage Predator impacts on Wildlife Habitat Areas which will include and comply with the following: i. Year-round Predator management will be implemented for the life of the Proposed Project with clearly delineated roles and responsibilities for the Port, City and Resources Agencies. The primary objective of such provisions will be to adequately protect terns, rails, plovers, shorebirds, over-wintering species, and other species of high management priority as determined by the Resource Agencies. ii. Predator management will include regular foot patrols and utilize tracking techniques to find and remove domestic or feral animals. iii. Address Predator attraction and trash management for all areas of the Proposed Project by identifying clear management measures and restrictions. Examples of the foregoing include design of trash containers, including those in park areas and commercial dumpsters, to be covered and self-closing at all times, design of containment systems to prevent access by sea gulls, rats, crows, pigeons, skunks, opossums, raccoons, and similar animals and adequate and frequent servicing of trash receptacles. iv. All buildings, signage, walkways, overlooks, light standards, roofs, balconies,				

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	ledges, and other structures that could provide line of sight views of Wildlife Habitat Areas will be designed in a manner to discourage their use as raptor perches or nests. f. Miscellaneous Additional Requirements of the NRMP: In addition to the standards described above, the NRMP will include: i. All elements which address natural resource protection in the MMRP including but not limited to those which assign responsibility and timing for implementing mitigation measures consistent with the City's MSCP Subarea Plan; ii. Pertinent sections of the MSCP Subarea Plan; iii. References to existing Port policies and practices, such as Predator management programs and daily trash collections with public areas and increase service during special events. iv. Establishment of design guidelines to address adjacency impacts, such as storm water, landscape design, light and noise and objectives ad discussed below; v. Establishment of baseline conditions and management objectives; and vi. Habitat enhancement objectives and priorities. g. Creation, Periodic Review, and Amendment of the NRMP: The NRMP will be a natural resource adaptive management and monitoring plan initially prepared in consultation with the Wildlife Advisory Group, and reviewed and amended in further consultation with the Wildlife Advisory Group one year following adoption of the NRMP and annually thereafter for the first five (5) years after adoption, after which it will be reviewed and amended as necessary every other year for the first 6 years, then once every 5 years thereafter. If the RCC is not pursued in the first five (5) years after certification of the FEIR, this schedule will be amended to ensure that NRMP is evaluated every year for five years after the development of the RCC. The periodic review of the NRMP described in the preceding sentences is hereinafter called "Periodic Review." A material revision of the NRMP is hereinafter called an "NRMP Amendment". However, nothing in this schedule will be interpreted to preclude a speedy response or revision to the NRMP if necessary to abate an emergency condition or to accommodate relevant new information or necessary management practices consistent with the NRMP management objectives. Preparation of the				

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	NRMP will begin within six months of the filing of the Notice of Determination for the Final EIR by the Port and will be completed prior to the earlier of: (a) Development Commencement; (b) issuance of a Certificate of Occupancy for the residential development; or (c) three years. The adaptive management components of the NRMP Periodic Review will address, among other things, monitoring of impacts of development as it occurs and monitoring the efficacy of water quality improvement projects (if applicable)_and management and restoration actions needed for resource protection, resource threats, management (i.e., sea-level rise, trash, window bird strikes, lighting impacts, bird flushing, water quality, fireworks, human-wildlife interface, education and interpretation programs, public access, involvement, and use plan, management of the human-wildlife interface, wildlife issues related to facilities, trails, roads, overlooks planning, and watershed coordination), and other issues affecting achievement of NRMP Management Objectives. i. The Port and City will cause the preparation, consideration negotiation and approval of the NRMP including, staff and administrative oversight and engagement of such consultants as are reasonable and necessary for their completion, approval and amendment in accordance with this mitigation measure. ii. The Port and City will each provide a written notice of adoption to the Wildlife Advisory Group upon their respective approval of the NRMP. h. DISPUTE RESOLUTION FOR PLAN CREATION AND AMENDMENT. The NRMP and any material amendments to the NRMP will require submission, review, and approval by the CCC after final adoption by the Port and City. Nonetheless, the participants would benefit if the NRMP is developed though a meaningful stakeholder process providing for the resolution of as many disagreements as possible prior to NRMP submission to the CCC. This section provides a process by which the Coalition can participate in the creation and amendment of the NRMP. i. PLAN CREATION AND AMENDMENT. Where this mitigation measure contemplates the creation of the NRMP following the Effective Date or an NRMP Amendment, this section will provide a non-exclusive mechanism for resolution of disputes concerning the content of the NRMP and such NRMP Amendments. The standard of review and burden of proof for any disputes arising hereunder shall be the same as those under the California Environmental Quality Act. 1. PLAN CREATION AND AMENDMENT INFORMAL NEGOTIATIONS. Any dispute that arises with respect to the creation or amendment of the NRMP will in				

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	the first instance be the subject of informal negotiations between the parties to the dispute. A dispute will be considered to have arisen when one (1) party (the "Disputing Party") sends the other party a written Notice of Dispute. During the informal negotiations, the Disputing Party will identify in writing and with specificity the issue, standard, or proposed requirement which is the subject of the dispute (the "Notice of Dispute"). The period for informal negotiations will not exceed thirty (30) days from the date the Notice of Dispute is received. 2. PLAN CREATION AND AMENDMENT FORMAL DISPUTE RESOLUTION, PHASE I. In the event the Parties cannot resolve a dispute by informal negotiations, the Disputing Party may invoke formal dispute resolution procedures by providing the other parties a written statement of position on the matter in dispute, including, but not limited to, any facts, data, analysis or opinion supporting that position and any supporting documentation relied upon by the Disputing Party (the "Position Statement"). The Position Statement must be transmitted (via electronic mail or verifiable post) within thirty (30) days of the end of informal negotiations, and will be provided to the other parties and to each member of the Wildlife Advisory Group. If informal negotiations are unsuccessful, and the Disputing Party does not invoke formal dispute resolution within thirty (30) days, the position held by the Port, City or Agency (the respective public agency involved in such dispute is hereinafter called "Managing Agency") will be binding on the Disputing Party, subject to submission, review, and approval by the CCC. a. The other parties will submit their position statements ("Opposition Statements"), including facts, data, analysis or opinion in support thereof, to the Disputing Party and the Wildlife Advisory Group members within thirty (30) days of transmission of the Position Statement. b. Within twenty-one (21) days after transmission of the Opposition Statement(s), the Wildlife Advisory Group will convene, consider and, within a reasonable period of time thereafter, render its proposed resolution of the dispute. The Wildlife Advisory Group's decision will not be binding upon the Disputing Party, but rather, will be considered purely advisory in nature. The proposed resolution of the Wildlife Advisory Group will be that comprehensive recommendation supported by a majority of Wildlife Advisory Group members after vote, with each member entitled to one vote.				

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	The Wildlife Advisory Group's proposal will be transmitted to all parties by an appointed Wildlife Advisory Group member via electronic mail. 3. PLAN CREATION AND AMENDMENT FORMAL DISPUTE RESOLUTION, PHASE II. If any party does not accept the advisory decision of the Wildlife Advisory Group, it must invoke the second phase of formal dispute resolution by presenting the dispute to the governing board ("Governing Board") of the Managing Agency (i.e., Board of Port Commissioners or City Council). This phase of the dispute resolution process is initiated by such party providing written notice to the other parties within thirty (30) days of receipt of the Wildlife Advisory Group proposal ("MA Notice"). The MA Notice will include the Position Statement, Opposition Statement, the Wildlife Advisory Group proposal, and any other information such party desires to include. Any supplement to the Opposition Statement will be filed with the Managing Agency within fourteen (14) days. The Governing Board of the Managing Agency will review the transmitted information and within sixty (60) days from receipt of the MA Notice will schedule a public hearing to consider the dispute and within ten (10) days of such public hearing, render a decision. The decision of the Governing Board of the Managing Agency will be final and binding on the Managing Agency but will not bind the members of the Coalition. If the members of the Coalition accept the decision of the Governing Board of the Managing Agency, the decision will dictate the manner in which the dispute is resolved in the NRMP or amendment to the NRMP. Nothing herein will preclude such party from publicly opposing or supporting the Governing Board's decision before the CCC. i. DISPUTE RESOLUTION REGARDING NRMP IMPLEMENTATION AND ENFORCEMENT. Once the CCC approves the NRMP or any NRMP Amendment, the Governing Board will issue a Notice of Adoption with respect to the NRMP or NRMP amendment. Once a Notice of Adoption is issued with respect to the NRMP or NRMP Amendment, this section will be the exclusive mechanism for the parties to resolve disputes arising under, or with respect to implementation or enforcement of, the NRMP including when the NRMP is reviewed during an Adaptive Management Review or Periodic Review and such review does not require an NRMP Amendment. This provision will not be used to challenge the adequacy of the NRMP or an NRMP Amendment after the issuance of a Notice of Adoption with respect thereto. The standard of review and burden of proof for any disputes arising hereunder shall be the				

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	same as those under CEQA. i. PLAN ENFORCEMENT INFORMAL NEGOTIATIONS. Any dispute that arises with respect to implementation or enforcement of the NRMP will in the first instance be the subject of informal negotiations between the parties to the dispute. A dispute will be considered to have arisen when one Disputing Party sends the other party a written Notice of Dispute. During the informal negotiations, the Disputing Party will send a written Notice of Dispute to the other parties specifying the aspect of the NRMP it believes is not being implemented properly and the way in which the Disputing Party believes the NRMP should be implemented according to its terms (the "Notice of Dispute"). The period for informal negotiations will not exceed forty-five (45) days from the date such Notice of Dispute is received. ii. PLAN ENFORCEMENT FORMAL DISPUTE RESOLUTION, PHASE I. In the event the Parties cannot resolve a dispute by informal negotiations under the preceding section, the Disputing Party may invoke a formal dispute resolution procedure by presenting the dispute to the Governing Board of the Managing Agency by providing the other parties a written statement of position on the matter in dispute, including, but not limited to, any facts, data, analysis or opinion supporting that position and any supporting documentation relied upon by the Disputing Party (the "Position Statement"). The Position Statement must be transmitted (via electronic mail or verifiable post) within thirty (30) days of the end of informal negotiations, and will be provided to the other parties, to each member of the Wildlife Advisory Group. If informal negotiations are unsuccessful, and the Disputing Party does not invoke formal dispute resolution within thirty (30) days, the Managing Agency's position will be binding on the Disputing Party subject to any periodic review and/or approval by the CCC, if required by law. 1. The other parties will submit their position statements ("Opposition Statements"), including facts, data, analysis, or opinion in support thereof, to the Disputing Party, the Wildlife Advisory Group members, and the Governing Board within thirty (30) days of transmission of the Position Statement. 2. Within forty-five (45) days after transmission of the Opposition Statement(s), the Disputing Party will provide a written notice ("MA II Notice") to the other parties, the Wildlife Advisory Group and the Governing Board. The MA II Notice will include the Position Statement, Opposition Statement, the Wildlife Advisory Group proposal, and any other information the Disputing Party desires to				

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	include. Any supplement to the Opposition Statement will be filed with the Managing Agency within fourteen (14) days following receipt of the MA II Notice. The Governing Board will review the transmitted information and within sixty (60) days from receipt of the MA II Notice will schedule a public hearing to consider the dispute and within ten (10) days of such public hearing, render a decision. The decision of the Governing Board will be final and binding on the Managing Agency but will not bind the members of Coalition. If the members of the Coalition accept the decision of the Governing Board of the Managing Agency, the decision will dictate the manner in which the dispute is resolved in the NRMP. If any member of the Coalition disagrees with the decision of the Governing Board, it shall have the right to seek a petition for writ of mandate from the Superior Court of California, San Diego Division. iii. WAIVER OF DEFENSE. To the extent permitted by law, the Port, City and RDA agree that lack of funds shall not be a defense to any claim of failure to adequately fund implementation and enforcement of the adopted NRMP. B. Additional Habitat Management and Protection: a. The Port will exercise diligent and good faith efforts to enter into the following cooperative agreements with the USFWS or other appropriate agency or organization: i. An agreement providing for the long-term protection and management of the sensitive biological habitat running north from the South Bay Boatyard to the Sweetwater River Channel (known as the Sweetwater Tidal Flats) and addressing educational signage, long-term maintenance, and additional protection measures such as increased monitoring and enforcement by Harbor Police, shared jurisdiction and enforcement by District personnel with legal authority to enforce applicable rules and regulations ("District Enforcement Personnel"), shared jurisdiction and enforcement by District Enforcement Personnel and other appropriate Resource Agencies of resource regulations, and placement of enforcement signage. Subject to the cooperation of the applicable Resource Agency, such cooperative agreement will be executed prior to the Development Commencement of any projects subject to Port's jurisdiction within the Sweetwater or Harbor Districts. ii. An agreement for the long-term protection and management of the J Street				

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	Marsh and addressing additional protective measures such as educational signage, long-term maintenance, and monitoring and enforcement by District Enforcement Personnel, shared jurisdiction and enforcement of resource regulations by District Enforcement Personnel and other Resource Agencies, and placement of enforcement signage. Subject to the cooperation of the applicable Resource Agency, such cooperative agreement will be executed prior to the Development Commencement within the Otay District. The Port will include an analysis of the appropriate level and method for wetland and marine life habitat restoration of the intake/discharge channels associated with the South Bay Power Plant in the environmental review document for the demolition of the South Bay Power Plant. iii. If either of the cooperative agreements contemplated above are not achievable within three (3) years after Final EIR certification, the Port will develop and pursue another mechanism that provides long-term additional protection and natural resource management for these areas. b. The Port will include an analysis of the appropriate level and method for wetland and marine life habitat restoration of the intake/discharge channels associated with the South Bay Power Plant in the environmental review document for the demolition of the South Bay Power Plant. c. As a future and separate project, the Port will investigate, in consultation with the USFWS, the feasibility of restoring an ecologically meaningful tidal connection between the F & G Street Marsh and the upland marsh on parcel SP-2 consistent with USFWS restoration concepts for the area. At a minimum, the investigation will assess the biological value of tidal influence, the presence of hazardous materials, necessary physical improvements to achieve desired results, permitting requirements, and funding opportunities for establishing the tidal connection. This investigation will be completed prior to the initiation of any physical alteration of SP-2, F Street, and/or the F & G Street Marsh. In addition, once emergency access to the Proposed Project area has been adequately established such that F Street is no longer needed for public right-of-way for vehicular use, but may reserve it for pedestrian and bicycle use if ecologically appropriate.				

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	C. Restoration Priorities: The following will supplement the description of the conceptual mitigation opportunities in the Final EIR (including Appendix 4.8-8 Mitigation Opportunities). The following restoration priorities will not be included in the NRMP but rather will be applicable (i) if and only to the extent that Port or City are required to restore degraded habitat in accordance with the terms of the MMRP or (ii) to establish priorities for Port's pursuit of grant funding. a. Restoration priorities for the Proposed Project are those mitigation opportunities in the Final EIR as depicted in the conceptual mitigation opportunities (Figures 4.8-23 and 4.8-26) and the projects located in the South Bay in the Port's Adopted Restoration and Enhancement Plan. b. With the exception of the restoration described in Section (d) below, shoreline/marsh interface restorations in the Sweetwater and Otay Districts should be natural and gradually sloped and planted with salt marsh and upland transition plants in a manner that will stabilize the bank without the need for additional riprap areas. Upland slopes should be contoured to provide a very gentle grade so as to maximize tidal elevation of mudflats, salt marsh habitat and upland transition areas. This area should be wide enough to encourage or allow wildlife to move between the Sweetwater Marsh and the F & G Marsh and between the J Street and the South San Diego Bay Unit of the NWR. The shoreline should be improved and restored to facilitate a more effective upland refuge area for species during high tides and to accommodate the impacts from global sea rise. c. The Telegraph Creek should be improved to be a more natural channel as part of the redevelopment of the Otay District. Efforts to naturalize and revegetate the creek will be maximized as is consistent with its function as a storm water conveyance. d. The Port will perform an analysis of the appropriate level and method for environmental restoration of the intake/discharge channels associated with the South Bay Power Plan in the environmental review document for the demolition of the power plant. D. South Bay Wildlife Advisory Group: A South Bay Wildlife Advisory Group ("Wildlife Advisory Group") will be formed to advise the Port and City in the creation of the NRMP, cooperative management agreements, Adaptive Management Review				

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	(defined below) and any related wildlife management and restoration plans or prioritizations. The Wildlife Advisory Group will also address management issues and options for resolution. The Wildlife Advisory Group will initiate and support funding requests to the Port and City, identify priorities for use of these funds and engage in partnering, education, and volunteerism to support the development of the Proposed Project in a manner that effectively protects and enhances the fish, wildlife, and habitats of the area and educates and engages the public. a. Port and City will provide such administrative and staff support to the Wildlife Advisory Group as is necessary to perform the functions and achieve the goals described herein. b. The Wildlife Advisory Group will be comprised of the following: one (1) representative from each the Environmental Health Coalition, San Diego Audubon Society, San Diego Coastkeeper, Coastal Environmental Rights Foundation, Southwest Wetlands Interpretative Association, Surfrider Foundation (San Diego Chapter), and Empower San Diego; two (2) representatives from the Chula Vista Natural Center (one from educational programs and one from programs/operations); up to three (3) representatives from major developers or tenants with projects in the CVBMP (including one from Pacifica Companies, which on completion, may be succeeded by a representative of its homeowner association); one (1) representative from the City's Resource Conservation Commission; one (1) from either Harborside or Mueller elementary school or the School District; Western and Eastern Chula Vista residents selected by the City (one from Northwest one from the Southwest and one from east of I-805); one (1) representative from eco-tourism based business; two (2) individuals appointed by Port; and 6 representatives from Resources Agencies (two from the USFWS, one from Refuges and one from Endangered Species and one (1) each from California Department of Fish and Game, National Marine Fisheries Service, Regional Water Quality Control Board and CCC). c. The Wildlife Advisory Group will meet as needed, but at a minimum of every six months for the first ten (10) years and annually thereafter. The Wildlife Advisory Group will be formed within six months of the filing of the Notice of Determination for the FEIR by the Port. d. The Wildlife Advisory Group will meet at the intervals described above to review				

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	the NRMP to: (i) determine the effectiveness of the NRMP in achieving the Management Objectives; (ii) identify any changes or adjustments to the NRMP required to better achieve the Management Objectives; (iii) identify any changes or adjustments to the NRMP required to respond to changes in the man-made and natural environments that are affecting or, with the passage of time may affect, the effectiveness of the NRMP in achieving the Management Objectives; and (iv) review priorities relative to available funding. At its periodic meetings, the Wildlife Advisory Group may also consider and make recommendations regarding (x) implementation of the NRMP as needed, (y) Adaptive Management Review and (z) NRMP Amendments. e. The Wildlife Advisory Group will advise the joint powers authority (JPA) on the expenditure of the Community Benefits Fund, subject to the applicable law. E. Education: An environmental education program will be developed and implemented and will include the following: a. The program will continue for the duration of the Proposed Project and will target both residential and commercial uses as well as park visitors. b. The program's primary objective will be to educate Bayfront residents, visitors, tenants and workers about the natural condition of the Bay, the ecological importance of the Proposed Project area and the public's role in the restoration and protection of wildlife resources of the Bay. c. The program will include educational signage, regular seminars and interpretive walks on the natural history and resources of the area, regular stewardship events for volunteers (shoreline and beach cleanups, exotic plant removal, etc.). d. Adequate annual funding for personnel or contractor/consultant and overhead to ensure implementation of the following functions and activities in collaboration with the Chula Vista Nature Center or USFWS: i. Coordination of Volunteer programs and events; ii. Coordination of Interpretive and educational programs; iii. Coordination of Tenant, resident and visitor educational programs; iv. Docent educational; and v. Enhancements and restoration.				

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	F. Personnel and Funding: Funding for the implementation of the NRMP will be provided by the Port, City and RDA. To meet these obligations, the Port, City and RDA will commit revenues or otherwise provide funding to a JPA formed pursuant to the California Marks-Roos Act, Articles 1, 2, 3 and 4 of Chapter 5 of Division 7 of Title 1 of the California Government Code. Port, City and RDA will ensure the JPA is specifically charged to treat the financial requirements of this Agreement as priority expenditures that must be assured as project-related revenues are identified and impacts initiated. The Port, City and RDA expressly acknowledge the funding commitments contemplated herein will include, but not be limited to, funding for personnel and overhead or contractor(s)/consultant(s) to implement and ensure the following functions and activities: a. On-site management and enforcement for parks and Wildlife Habitat Areas as necessary to enforce restrictions on human and Predator access regarding Wildlife Habitat Areas; b. Enforcement of mitigation measures including, but not limited to, trash collection, noise restrictions, removal of invasive plants, habitat restoration, and park use restrictions; c. Coordination, development, implementation and evaluation of effectiveness of education and mitigation programs, including implementation of NRMP. d. Evaluation of effectiveness of bird strike mitigation and design measures; e. Water quality protections; and, f. Coordination of injured animal rehabilitation activities. *Applies to Significant Impacts 4.8-6 and 4.8-7.				
MM 4.8-8	Prior to construction of the H Street Pier, the Port shall create 0.96 acre of eelgrass habitat to mitigate for the loss of surface water foraging habitat in accordance with the Southern California Eelgrass Mitigation Policy. The creation of eelgrass habitat shall be conducted in accordance with Mitigation Measures 4.9-1 and 4.9-2 in *Section 4.9, Marine Biological Resources.* *Applies to Significant Impact 4.8-8.	Port -Prior to completion of construction	Port		
MM 4.8-9	**A.** Prior to completion of in-harbor work in Phase IV, the Port shall create 1.93 acres of	Port or Port	Port in		

Number	Mitigation Measure	Responsible Party and Mitigation Timing	Monitoring Agency	Date of Completion	Date of Verification
	eelgrass habitat. The creation of eelgrass habitat shall be conducted in accordance with Mitigation Measure 4.9-2 in *Section 4.9, Marine Biological Resources.* **B.** When project-specific designs are proposed for the remaining project components affecting 1.61 acres of surface water foraging habitat and intertidal mudflats, the mitigation of impacts shall be re-evaluated by the Port during subsequent environmental review pursuant to State CEQA Guidelines Section 15168 to determine accurate net loss and mitigation for the loss of foraging habitat. *Applies to Significant Impact 4.8-9.	Tenants -Prior to start of grading Port -Prior to start of grading	Consultation with wildlife agencies Port in Consultation with wildlife agencies		

Number	Mitigation Measure	Responsible Party and Mitigation Timing	Monitoring Agency	Date of Completion	Date of Verification
MM 4.8-10	**A.** Prior to the commencement of grading for development in each phase that impacts riparian habitat or sensitive vegetation communities, the Port or Port tenants, as appropriate, shall prepare and initiate implementation of a restoration plan for impacts to riparian habitat and sensitive vegetation communities in accordance with the mitigation requirements presented in *Table 4.8-6*. Prior to the commencement of Phase I grading that impacts riparian habitat or sensitive vegetation communities, the Port shall coordinate with the wildlife agencies for the preparation and approval of a detailed restoration plan within the Port's jurisdiction. The restoration plan shall be prepared by a qualified biologist, and the plan shall be approved by the Port. The guidelines for this plan will be developed in consultation with the regulatory agencies. The plan shall summarize the approach taken to avoid and minimize impacts to sensitive habitats, detail the target functions and values, and address the approach to restoring those functions and values. Typically, the restoration plan shall detail the site selection process; shall propose site preparation techniques, planting palettes, implementation procedures, and monitoring and maintenance practices; and shall establish performance criteria for each mitigation site. Typical success criteria may include percent canopy cover, percent of plant survival, and percent of native/non-native canopy cover. A minimum 5-year maintenance and monitoring period would be implemented following installation to ensure each area is successful. The restoration plan shall address monitoring requirements and specify when annual reports are to be prepared and what they shall entail. Qualitative and quantitative assessments of the site conditions shall be included. If the mitigation standards have not been met in a particular year, contingency measures shall be identified in the annual report and remediation will occur within 3 months or start of the growing season. The Port shall be responsible for ensuring that all of the success criteria are met to the satisfaction of the Port in consultation with the regulatory agencies. **B.** Prior to initiating any construction activities in each phase that would affect riparian habitat or sensitive vegetation communities, including clearing and grubbing associated with program-level phases, an updated project-level assessment of potential impacts shall be made based on a specific project design. The Port or project developer(s), as appropriate, shall retain a qualified, Port-approved biologist to update appropriate surveys, identify the existing conditions, quantify impacts, and provide adequate	Developer -Prior to First Clearing, Grubbing, or Grading Permit	City		

Number	Mitigation Measure	Responsible Party and Mitigation Timing	Monitoring Agency	Date of Completion	Date of Verification
	mitigation measures to reduce impacts to below a level of significance. This updated assessment shall be submitted to the Port for review and approval. *Applies to Significant Impacts 4.8-10 and 4.8-12.				
MM 4.8-11	**A.** Prior to issuance of any clearing and grubbing or grading permits within the City's jurisdiction that would affect riparian habitat or sensitive vegetation communities, the project developer(s) shall acquire mitigation credits or prepare and initiate implementation of a restoration plan for impacts to riparian habitats and sensitive vegetation communities in accordance with the acreages identified in *Table 4.8-7.* Mitigation credits shall be secured in a City-approved mitigation bank or land acquisition shall be provided at an approved location. Verification of mitigation credits or a restoration plan shall be provided to the City for review and approval prior to issuance of any clearing and grubbing or grading permits. The project developer(s) shall prepare and implement a detailed restoration plan to the satisfaction of the City and the regulatory agencies. As previously addressed above in *Section 4.8.6, Mitigation Measures,* the guidelines for this plan will be developed in consultation with the regulatory agencies. The plan shall summarize the approach taken to avoid and minimize impacts to sensitive habitats, detail the target functions and values, and address the approach to restoring those functions and values. Typically, the restoration plan shall detail the site selection process; shall propose site preparation techniques, planting palettes, implementation procedures, and monitoring and maintenance practices; and shall establish performance criteria for each mitigation site. Typical success criteria may include percent canopy cover, percent of plant survival, and percent of native/non-native canopy cover. A minimum 5-year maintenance and monitoring period would be implemented following installation to ensure each area is successful. The restoration plan shall address monitoring requirements and specify when annual reports are to be prepared and what they shall entail. Qualitative and quantitative assessments of the site conditions shall be included. If the mitigation standards have not been met in a particular year, contingency measures shall be identified in the annual report and remediation will occur within 3 months or the start of the growing season.	Port or Port Tenants -Upon Approval of Final Design Port or Port Tenants -Prior to start of grading	Port in Consultation with USACE Port in Consultation with USACE		

Number	Mitigation Measure	Responsible Party and Mitigation Timing	Monitoring Agency	Date of Completion	Date of Verification
	B. Prior to issuance of any clearing and grubbing or grading permits within the City's jurisdiction that affect riparian habitat or sensitive vegetation communities associated with the program-level development phases, an updated assessment of potential impacts shall be made based on a specific project design. The project developer(s) shall retain a City-approved biologist to update appropriate surveys, identify the existing conditions, quantify impacts, and provide adequate mitigation consistent with the City's MSCP Subarea Plan. This updated assessment shall be submitted to the City for review and approval. **C.** Prior to issuance of any clearing and grubbing or grading permits within the City's jurisdiction that affect riparian habitat or sensitive vegetation communities, the project applicant shall be required to obtain an HLIT permit pursuant to Section 17.35 of the Chula Vista Municipal Code for impacts to Covered Species and Vegetation Communities protected under the City's MSCP Subarea Plan. *Applies to Significant Impacts 4.8-13 and 4.8-15.	Developer -Prior to First Clearing, Grubbing and Grading Permit Developer -Prior to First Clearing, Grubbing, and Grading Permit	City in Consultation with USACE City in Consultation with USACE		
MM 4.8-12	**A.** The Port or Port tenants, as appropriate, shall mitigate for permanent and temporary impacts to USACE jurisdictional waters at the following ratios: 1:1 for permanent impacts to non-wetland waters of the U.S.; 4:1 for impacts to wetlands; and 1:1 for all temporary impacts. A minimum of 1:1 mitigation must be created in order to achieve the no-net-loss requirement of the CWA. *Table 4.8-8* provides a breakdown of the required mitigation acreages for all USACE impacts within the Port's jurisdiction. Mitigation for impacts from the Bay and Marina components of the Proposed Project will be established through USACE regulations once final designs for this work in Phases II through IV are finalized. Prior to the commencement of grading activities for any projects that impact USACE jurisdictional waters, the Port or Port tenants, as appropriate, shall prepare and initiate implementation of a restoration plan detailing the measures needed to achieve the necessary mitigation. The guidelines for this plan will be developed in consultation with the regulatory agencies. The plan shall summarize the approach taken to avoid and minimize impacts to sensitive habitats, detail the target functions and values, and address the approach to restoring those functions and values. Typically, the restoration plan shall detail the site selection process; shall propose site preparation techniques, planting palettes, implementation procedures, and monitoring and maintenance practices; and shall establish performance criteria for each mitigation site. Typical success criteria	Port or Port Tenants -Prior to First Grading Permit	Port in Consultation with CDFG		

Number	Mitigation Measure	Responsible Party and Mitigation Timing	Monitoring Agency	Date of Completion	Date of Verification
	may include percent canopy cover, percent of plant survival, and percent of native/non-native canopy cover. A minimum 5-year maintenance and monitoring period would be implemented following installation to ensure each area is successful. The restoration plan shall address monitoring requirements and specify when annual reports are to be prepared and what they shall entail. Qualitative and quantitative assessments of the site conditions shall be included. If the mitigation standards have not been met in a particular year, contingency measures shall be identified in the annual report and remediation will occur within 3 months or the start of the growing season. The Port shall be responsible for ensuring that all of the success criteria are met to the satisfaction of the Port in consultation with the regulatory agencies. **B.** Prior to the issuance of the first clearing and grubbing or grading permit for activities that impact USACE jurisdictional waters, the project developer(s) within the City's jurisdiction shall prepare a restoration plan detailing the measures needed to create/restore impacts to USACE jurisdictional waters within the City's jurisdiction in accordance with the acreage identified in *Table 4.8-9*. The guidelines for this plan will be developed in consultation with the regulatory agencies. The plan shall summarize the approach taken to avoid and minimize impacts to sensitive habitats, detail the target functions and values, and address the approach to restoring those functions and values. Typically, the restoration plan shall detail the site selection process; shall propose site preparation techniques, planting palettes, implementation procedures, and monitoring and maintenance practices; and shall establish performance criteria for each mitigation site. Typical success criteria may include percent canopy cover, percent of plant survival, and percent of native/non-native canopy cover. A minimum 5-year maintenance and monitoring period would be implemented following installation to ensure each area is successful. The restoration plan shall address monitoring requirements and specify when annual reports are to be prepared and what they shall entail. Qualitative and quantitative assessments of the site conditions shall be included. If the mitigation standards have not been met in a particular year, contingency measures shall be identified in the annual report and remediation will occur within 3 months or the start of the growing season. The project developer(s) shall be required to implement the restoration plan subject to the oversight and approval of the City.	Port or Port Tenants -Prior to First Grading Permit	CDFG		

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	C. Prior to issuance of the first clearing and grubbing or grading permit, for activities that impact USACE jurisdictional waters, the Port or Port tenants, as appropriate, and project developer(s) within the City's jurisdiction shall obtain a Section 404 permit from USACE. The permit application process would also entail approval of the restoration plan from the USACE as described above, with regard to areas that fall under the jurisdiction of USACE. *Applies to Significant Impacts 4.8-16 through 4.8-19.	Port or Port Tenants -Prior to First Grading Permit	CDFG		
MM 4.8-13	The Port or Port tenants, as appropriate, shall mitigate for permanent and temporary impacts to CDFG jurisdictional areas at a 2:1 ratio. *Table 4.8-8* provides a breakdown of the required mitigation acreages for all CDFG impacts within the Port's jurisdiction. Prior to the issuance of the first grading permit that may impact CDFG jurisdictional areas, the Port or Port tenants, as appropriate, shall prepare and initiate implementation of a restoration plan detailing the measures needed to achieve the necessary mitigation. The plan shall outline the timeline and procedures for restoring/enhancing the potential enhancement/mitigation sites, which include the native buffer areas and the F & G Street Marsh. The guidelines for this plan will be developed in consultation with the regulatory agencies. The plan shall summarize the approach taken to avoid and minimize impacts to sensitive habitats, detail the target functions and values, and address the approach to restoring those functions and values. Typically, the restoration plan shall detail the site selection process; shall propose site preparation techniques, planting palettes, implementation procedures, and monitoring and maintenance practices; and shall establish performance criteria for each mitigation site. Typical success criteria may include percent canopy cover, percent of plant survival, and percent of native/non-native canopy cover. A minimum 5-year maintenance and monitoring period would be implemented following installation to ensure each area is successful. The restoration plan shall address monitoring requirements and specify when annual reports are to be prepared and what they shall entail. Qualitative and quantitative assessments of the site conditions shall be included. If the mitigation standards have not been met in a particular year, contingency measures shall be identified in the annual report and remediation will occur within 3 months or the start of the growing season. The Port shall be responsible for ensuring that all of the success criteria are met to the satisfaction of the Port in consultation with the regulatory agencies, including CDFG.	Port or Port Tenants -Prior to start of grading	Port in Consultation with California Coastal Commission		

Number	Mitigation Measure	Responsible Party and Mitigation Timing	Monitoring Agency	Date of Completion	Date of Verification
	Prior to issuance of the first grading permit that may impact CDFG jurisdictional areas, the Port or Port tenants, as appropriate, shall obtain permits from CDFG. The permit application process would also entail approval of the restoration plan as described above, with regard to areas that fall under the jurisdiction of CDFG. Pursuant to Fish and Game Code 1602, the Port and other applicants are required to obtain a Streambed Alteration Agreement for impacts to streambeds and associated riparian habitat that fall within CDFG's jurisdiction. *Applies to Significant Impact 4.8-21.				
MM 4.8-14	**A.** Mitigation for permanent direct and indirect (from bridge shading) impacts would be at a 2:1 ratio as detailed in *Table 4.8-8*. Prior to the commencement of grading activities for projects that impact CCC jurisdictional areas, the Port or Port tenants, as appropriate, shall prepare a restoration plan detailing the measures needed to create/restore CCC wetlands. The guidelines for this plan will be developed in consultation with the regulatory agencies. The plan shall summarize the approach taken to avoid and minimize impacts to sensitive habitats, detail the target functions and values, and address the approach to restoring those functions and values. Typically, the restoration plan shall detail the site selection process; shall propose site preparation techniques, planting palettes, implementation procedures, and monitoring and maintenance practices; and shall establish performance criteria for each mitigation site. Typical success criteria may include percent canopy cover, percent of plant survival, and percent of native/non-native canopy cover. A minimum 5-year maintenance and monitoring period would be implemented following installation to ensure each area is successful. The restoration plan shall address monitoring requirements and specify when annual reports are to be prepared and what they shall entail. Qualitative and quantitative assessments of the site conditions shall be included. If the mitigation standards have not been met in a particular year, contingency measures shall be identified in the annual report and remediation will occur within 3 months or the start of the growing season. The Port shall be responsible for ensuring that all of the success criteria are met to the satisfaction of the Port in consultation with the regulatory agencies, including the CCC.	Port or Port Tenants -Prior to start of grading	Port in Consultation with California Coastal Commission		

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	B. Mitigation for permanent direct and indirect (from bridge shading) impacts would be at a 2:1 ratio as detailed in *Table 4.8-9.* Prior to the issuance of the first grading permit for projects that impact CCC jurisdictional areas, the project applicants within the City's jurisdiction shall prepare a restoration plan detailing the measures needed to create/restore CCC wetlands. The guidelines for this plan will be developed in consultation with the regulatory agencies. The plan shall summarize the approach taken to avoid and minimize impacts to sensitive habitats, detail the target functions and values, and address the approach to restoring those functions and values. Typically, the restoration plan shall detail the site selection process; shall propose site preparation techniques, planting palettes, implementation procedures, and monitoring and maintenance practices; and shall establish performance criteria for each mitigation site. Typical success criteria may include percent canopy cover, percent of plant survival, and percent of native/non-native canopy cover. A minimum 5-year maintenance and monitoring period would be implemented following installation to ensure each area is successful. The restoration plan shall address monitoring requirements and specify when annual reports are to be prepared and what they shall entail. Qualitative and quantitative assessments of the site conditions shall be included. If the mitigation standards have not been met in a particular year, contingency measures shall be identified in the annual report and remediation will occur within 3 months or the start of the growing season. The City shall be responsible for ensuring that all of the success criteria are met to the satisfaction of the City in consultation with the regulatory agencies, including the CCC. *Applies to Significant Impacts 4.8-22, 4.8-23, 4.8-32.	Port or Port Tenants -Prior to Approval of Grading Permits	California Coastal Commission		
MM 4.8-15	Mitigation for permanent direct and indirect (from bridge shading) impacts from circulation road construction/improvements and the riprap removal and bulkhead replacement totaling 0.51 acre would be at a 2:1 ratio as detailed in *Table 4.8-8.* This would require a total mitigation of 1.02 acres. Mitigation for temporary impacts within Parcel OP-2B from the re-channelization of the Telegraph Canyon Channel would require mitigation at a ratio of 1:1 as detailed on *Table 4.8-8* for a total of 0.16 acre. Prior to the commencement of grading activities, the Port or Port tenants, as appropriate, shall prepare a restoration plan detailing the measures needed to create/restore CCC	Port or Port Tenants -Prior to First Grading Permit	Port in Consultation with California Coastal Commission		

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	wetlands. The guidelines for this plan will be developed in consultation with the regulatory agencies. The plan shall summarize the approach taken to avoid and minimize impacts to sensitive habitats, detail the target functions and values, and address the approach to restoring those functions and values. Typically, the restoration plan shall detail the site selection process; shall propose site preparation techniques, planting palettes, implementation procedures, and monitoring and maintenance practices; and shall establish performance criteria for each mitigation site. Typical success criteria may include percent canopy cover, percent of plant survival, and percent of native/non-native canopy cover. A minimum 5-year maintenance and monitoring period would be implemented following installation to ensure each area is successful. The restoration plan shall address monitoring requirements and specify when annual reports are to be prepared and what they shall entail. Qualitative and quantitative assessments of the site conditions shall be included. If the mitigation standards have not been met in a particular year, contingency measures shall be identified in the annual report and remediation will occur within 3 months or the start of the growing season. The Port shall be responsible for ensuring that all of the success criteria are met to the satisfaction of the Port in consultation with the regulatory agencies, including the CCC. Prior to approval of grading permits for projects impacting CCC wetlands, the Port or Port tenants, as appropriate, shall obtain permits and/or approvals from CCC. *Applies to Significant Impacts 4.8-24 through 4.8-26.				
MM 4.8-16	Mitigation for temporary impacts from the restoration of the ecological buffer would require mitigation at a ratio of 1:1 as detailed on *Table 4.8-8*. The ecological buffer area supports 0.05 acre that has been mapped as a CCC wetland and will require 0.05 acre of mitigation. There is an additional 0.04 acre that is mapped as a potential CCC wetland and 1.50 acres that are former industrial areas in the process of remediation. The Port or Port tenants, as appropriate, will need to confer with CCC in order to determine whether the areas of potential jurisdiction, totaling 1.54 acres, actually fall under CCC jurisdiction. If these areas are not subject to CCC jurisdiction, no additional mitigation would be required. If CCC does assert jurisdiction over these areas, the restoration will need to include the creation/enhancement of an additional 1.54 acres of CCC wetlands.	Port or Port Tenants -Prior to First Grading Permit	Port in Consultation with California Coastal Commission		

Number	Mitigation Measure	Responsible Party and Mitigation Timing	Monitoring Agency	Date of Completion	Date of Verification
	Prior to the issuance of the first grading permit for activities that impact CCC jurisdictional areas, the Port or Port tenants, as appropriate, shall prepare a restoration plan detailing the measures needed to create/restore CCC wetlands. The guidelines for this plan will be developed in consultation with the regulatory agencies. The plan shall summarize the approach taken to avoid and minimize impacts to sensitive habitats, detail the target functions and values, and address the approach to restoring those functions and values. Typically, the restoration plan shall detail the site selection process; shall propose site preparation techniques, planting palettes, implementation procedures, and monitoring and maintenance practices; and shall establish performance criteria for each mitigation site. Typical success criteria may include percent canopy cover, percent of plant survival, and percent of native/non-native canopy cover. A minimum 5-year maintenance and monitoring period would be implemented following installation to ensure each area is successful. The restoration plan shall address monitoring requirements and specify when annual reports are to be prepared and what they shall entail. Qualitative and quantitative assessments of the site conditions shall be included. If the mitigation standards have not been met in a particular year, contingency measures shall be identified in the annual report and remediation will occur within 3 months or the start of the growing season. The Port shall be responsible for ensuring that all of the success criteria are met to the satisfaction of the Port in consultation with the regulatory agencies, including the CCC. *Applies to Significant Impact 4.8-27.				
MM 4.8-17	The Port or Port tenants, as appropriate, shall confer with CCC in order to determine whether the 0.58 acre of areas fall under CCC jurisdiction. If these areas are not subject to CCC jurisdiction, no additional mitigation would be required. If CCC does assert jurisdiction over these areas, the Port will need to mitigate the impacts at a ratio of 2:1 as detailed in *Table 4.8-8* for a total mitigation of 1.16 acres. Prior to the issuance of the first grading permit for projects that impact CCC jurisdictional areas, the Port or Port tenants, as appropriate, shall prepare a restoration plan detailing the measures needed to create/restore CCC wetlands. The guidelines for this plan will be developed in consultation with the regulatory agencies. The plan shall summarize the approach taken to avoid and minimize impacts to sensitive habitats, detail the target functions and values, and address the approach to restoring those functions and values. Typically, the restoration plan shall detail the site selection	Port or Port Tenants -Prior to First Grading Permit	Port in Consultation with California Coastal Commission		

Number	Mitigation Measure	Responsible Party and Mitigation Timing	Monitoring Agency	Date of Completion	Date of Verification
	process; shall propose site preparation techniques, planting palettes, implementation procedures, and monitoring and maintenance practices; and shall establish performance criteria for each mitigation site. Typical success criteria may include percent canopy cover, percent of plant survival, and percent of native/non-native canopy cover. A minimum 5-year maintenance and monitoring period would be implemented following installation to ensure each area is successful. The restoration plan shall address monitoring requirements and specify when annual reports are to be prepared and what they shall entail. Qualitative and quantitative assessments of the site conditions shall be included. If the mitigation standards have not been met in a particular year, contingency measures shall be identified in the annual report and remediation will occur within 3 months or the start of the growing season. The Port shall be responsible for ensuring that all of the success criteria are met to the satisfaction of the Port in consultation with the regulatory agencies, including the CCC. *Applies to Significant Impact 4.8-28.				
MM 4.8-18	Prior to the issuance of the first grading permit for activities that impact CCC jurisdictional areas, the Port or Port tenants, as appropriate, shall prepare a restoration plan detailing the measures needed to create/restore CCC wetlands to provide 0.32 acre of mitigation for the 0.16 acre impact to CCC wetlands on Parcels HP-13B and HP-7. The guidelines for this plan will be developed in consultation with the regulatory agencies. The plan shall summarize the approach taken to avoid and minimize impacts to sensitive habitats, detail the target functions and values, and address the approach to restoring those functions and values. Typically, the restoration plan shall detail the site selection process; shall propose site preparation techniques, planting palettes, implementation procedures, and monitoring and maintenance practices; and shall establish performance criteria for each mitigation site. Typical success criteria may include percent canopy cover, percent of plant survival, and percent of native/non-native canopy cover. A minimum 5-year maintenance and monitoring period would be implemented following installation to ensure each area is successful. The restoration plan shall address monitoring requirements and specify when annual reports are to be prepared and what they shall entail. Qualitative and quantitative assessments of the site conditions shall be included. If the mitigation standards have not been met in a particular year, contingency measures shall be identified in the annual report and remediation will occur within 3 months or the start of the growing season. The Port shall be responsible for ensuring that all of the success	Port or Port Tenants -Prior to First Grading Permit	Port in Consultation with California Coastal Commission		

Number	Mitigation Measure	Responsible Party and Mitigation Timing	Monitoring Agency	Date of Completion	Date of Verification
	criteria are met to the satisfaction of the Port in consultation with the regulatory agencies, including the CCC. *Applies to Significant Impact 4.8-29.				
MM 4.8-19	The Port or Port tenants, as appropriate, shall confer with CCC in order to determine whether the 0.16 acre of areas identified as potentially CCC jurisdictional actually fall under CCC jurisdiction. If these areas are not subject to CCC jurisdiction, no additional mitigation would be required. If CCC does assert jurisdiction over these areas, the Port will need to mitigate the impacts at a ratio of 2:1 as detailed in *Table 4.8-8* for a total mitigation of 0.32 acre. Prior to the issuance of the first grading permit for projects that impact CCC jurisdictional areas, the Port or Port tenants, as appropriate, shall prepare a restoration plan detailing the measures needed to create/restore CCC wetlands. The guidelines for this plan will be developed in consultation with the regulatory agencies. The plan shall summarize the approach taken to avoid and minimize impacts to sensitive habitats, detail the target functions and values, and address the approach to restoring those functions and values. Typically, the restoration plan shall detail the site selection process; shall propose site preparation techniques, planting palettes, implementation procedures, and monitoring and maintenance practices; and shall establish performance criteria for each mitigation site. Typical success criteria may include percent canopy cover, percent of plant survival, and percent of native/non-native canopy cover. A minimum 5-year maintenance and monitoring period would be implemented following installation to ensure each area is successful. The restoration plan shall address monitoring requirements and specify when annual reports are to be prepared and what they shall entail. Qualitative and quantitative assessments of the site conditions shall be included. If the mitigation standards have not been met in a particular year, contingency measures shall be identified in the annual report and remediation will occur within 3 months or the start of the growing season. The Port shall be responsible for ensuring that all of the success criteria are met to the satisfaction of the Port in consultation with the regulatory agencies, including the CCC. *Applies to Significant Impact 4.8-30.	Port or Port Tenants -Prior to First Grading Permit	Port in Consultation with California Coastal Commission		
MM 4.8-20	The Port or Port tenants, as appropriate, will need to mitigate impacts to the 0.10-acre seasonal pond, mapped as a CCC wetland, at a 2:1 ratio.	Port or Port Tenants	Port in Consultation		

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Number	Mitigation Measure	Responsible Party and Mitigation Timing	Monitoring Agency	Date of Completion	Date of Verification
	The Port or Port tenants, as appropriate, shall confer with CCC in order to determine whether the 2.37-acre depressed area that exists where the LNG plant was formerly located, mapped as a potential CCC wetland, falls under CCC jurisdiction. If this area is not subject to CCC jurisdiction, no additional mitigation would be required. If CCC does assert jurisdiction over these areas, the final Phase II design of this parcel must mitigate impacts the 2.37-acre depressed area at a 2:1 ratio. Prior to the issuance of the first grading permit for projects that impact CCC jurisdictional areas, the Port or Port tenants, as appropriate, shall prepare a restoration plan detailing the measures needed to create/restore CCC wetlands. The guidelines for this plan will be developed in consultation with the regulatory agencies. The plan shall summarize the approach taken to avoid and minimize impacts to sensitive habitats, detail the target functions and values, and address the approach to restoring those functions and values. Typically, the restoration plan shall detail the site selection process; shall propose site preparation techniques, planting palettes, implementation procedures, and monitoring and maintenance practices; and shall establish performance criteria for each mitigation site. Typical success criteria may include percent canopy cover, percent of plant survival, and percent of native/non-native canopy cover. A minimum 5-year maintenance and monitoring period would be implemented following installation to ensure each area is successful. The restoration plan shall address monitoring requirements and specify when annual reports are to be prepared and what they shall entail. Qualitative and quantitative assessments of the site conditions shall be included. If the mitigation standards have not been met in a particular year, contingency measures shall be identified in the annual report and remediation will occur within 3 months or the start of the growing season. The Port shall be responsible for ensuring that all of the success criteria are met to the satisfaction of the Port in consultation with the regulatory agencies, including the CCC. *Applies to Significant Impact 4.8-31.	-Prior to First Grading Permit	with Califomia Coastal Commission		
MM 4.8-21	**A.** Prior to the commencement of grading activities for project components impacting RWQCB jurisdictional waters, the Port or Port tenants, as appropriate, shall prepare and implement a restoration plan detailing the measures needed to create/restore RWQCB jurisdictional waters in accordance with the acreage identified in *Table 4.8-8.*	Port or Port Tenants -Prior to start of grading	RWQCB		

Number	Mitigation Measure	Responsible Party and Mitigation Timing	Monitoring Agency	Date of Completion	Date of Verification
	B. Prior to the issuance of the first grading permit for project components impacting RWQCB jurisdictional waters, the project developer(s) within the City's jurisdiction shall prepare and implement a restoration plan detailing the measures needed to create/restore RWQCB jurisdictional waters in accordance with the acreage identified in *Table 4.8-8* to the satisfaction of the City. The guidelines for this plan will be developed in consultation with the regulatory agencies.	Developer -Prior to First Grading Permit	City in Consultation with RWQCB		
	C. Prior to the commencement of grading activities for project components impacting RWQCB jurisdictional waters, the Port or Port tenants, as appropriate, and applicants within the City's jurisdiction shall obtain permits from RWQCB. The permit application process would also entail approval of the restoration plan as described above. Pursuant to the CWA, the Port and other applicants are required to obtain a Section 401 Water Quality Certification permit from RWQCB.	Port or Port Tenants -Prior to start of grading	City in Consultation with RWQCB		
	D. Prior to the commencement of grading activities for project components impacting RWQCB jurisdictional waters, including clearing and grubbing, the Port or Port tenants, as appropriate, and the project developer(s) within the City's jurisdiction shall consult with the RWQCB to determine whether Waste Discharge Requirements from the RWQCB shall be required for impacts to isolated waters of the State of California. *Applies to Significant Impact 4.8-34.	Port or Port Tenants -Prior to start of grading	City in Consultation with RWQCB		
MM 4.8-22	**A.** Prior to issuance of any clearing and grubbing or grading permits for projects that impact City of Chula Vista designated wetlands, the project developer(s) shall acquire mitigation credits or prepare and initiate implementation of a restoration plan for Phase I impacts to mulefat scrub/riparian scrub at a ratio of 2:1 and southern coastal salt marsh at a ratio of 4:1. Mitigation credits shall be secured in a City-approved mitigation bank or other approved location. Verification of mitigation credits or an approved restoration plan shall be provided to the City prior to issuance of any clearing and grubbing or grading permits. Alternatively, completion of Mitigation Measure 4.8-11 will satisfy this mitigation measure as well.	Developer -Prior to First Clearing, Grubbing, or Grading Permit	City in Consultation with CDFG		
	The project developer(s) shall prepare and implement a detailed restoration and enhancement plan to the satisfaction of the City for impacts to wetland resources protected under the City's MSCP Subarea Plan. The guidelines for this plan will be	Developer -Prior to First	City		

Number	Mitigation Measure	Responsible Party and Mitigation Timing	Monitoring Agency	Date of Completion	Date of Verification
	developed in consultation with the regulatory agencies. The plan shall summarize the approach taken to avoid and minimize impacts to sensitive habitats, detail the target functions and values, and address the approach to restoring those functions and values. Typically, the restoration plan shall detail the site selection process; shall propose site preparation techniques, planting palettes, implementation procedures, and monitoring and maintenance practices; and shall establish performance criteria for each mitigation site. Typical success criteria may include percent canopy cover, percent of plant survival, and percent of native/non-native canopy cover. A minimum 5-year maintenance and monitoring period would be implemented following installation to ensure each area is successful. The restoration plan shall address monitoring requirements and specify when annual reports are to be prepared and what they shall entail. Qualitative and quantitative assessments of the site conditions shall be included. If the mitigation standards have not been met in a particular year, contingency measures shall be identified in the annual report and remediation will occur within 3 months or the start of the growing season. The City shall be responsible for ensuring that all of the success criteria are met to the satisfaction of the City in consultation with the regulatory agencies. **B.** Prior to issuance of clearing and grubbing or grading permits for areas that impact jurisdictional waters, the project developer(s) shall provide evidence to the City that all required regulatory permits, such as those required under Section 1602 of the California Fish and Game Code and Section 13260 of the California Water Code, have been obtained. *Applies to Significant Impact 4.8-35.	Clearing, Grubbing, or Grading Permit Developer -Prior to First Clearing, Grubbing, or Grading Permit	City		
MM 4.8-23	Prior to issuance of any building permits, building plans shall be reviewed by a qualified biologist retained by the developer and approved by the Port or the City, to verify that the proposed building has incorporated specific design features to avoid or to reduce the potential for bird strikes, including but not limited to the following: **Lighting** • No solid red or pulsating red lights shall be installed on or near the building unless required by the Federal Aviation Administration (FAA). • Where lighting must be used for safety reasons (FAA 2000 Advisory Circular), minimum intensity, maximum off-phased (3 seconds between flashes) white strobes	Developer -Prior to First Building Permit	Port or City		

Number	Mitigation Measure	Responsible Party and Mitigation Timing	Monitoring Agency	Date of Completion	Date of Verification
	shall be used. • No solid spot lights or intense bright lights shall be used during bird migration periods in the spring (from March to May) and Fall (from August to October). All event lighting shall be directed downward and shielded, unless such directed and shielded minimized light spills beyond the area for which illumination is required. • Exterior lighting shall be limited to that which is necessary and appropriate to ensure general public safety and way finding, including signage for building identification and way finding. • Exterior lighting shall be directed downward and shielded to prevent upward lighting and to minimize light spill beyond the area for which illumination is required. • Office space, residential units, and hotel rooms shall be equipped with motion sensors, timers, or other lighting control systems to ensure that lighting is extinguished when the space is unoccupied. • Office space, residential units, and hotel rooms shall be equipped with blinds, drapes, or other window coverings that may be closed to minimize the effects of interior night lighting. **Glass and Reflection** • Use of reflective coatings on any glass surface is prohibited. • Buildings shall incorporate measures to the satisfaction of the Port or the City to indicate to birds that the glass surface is solid by creating visual markers and muting reflection. • Project design standards will encourage window stenciling and angling. These measures may include but are not limited to the following: • Glass surfaces which are non-reflective • Glass surfaces which are tilted at a downward angle • Glass surfaces which use fritted or patterned glass • Glass surfaces which use vertical or horizontal mullions or other fenestration patterns • Glass surfaces which are fitted with screening, decorative grills, or louvers • Glass surfaces which use awnings, overhangs, bris sole, or other exterior sun-shading devices				

Number	Mitigation Measure	Responsible Party and Mitigation Timing	Monitoring Agency	Date of Completion	Date of Verification
	• Glass surfaces which use external films or coatings perceivable by birds • Artwork, drapery, banners, and wall coverings that counter the reflection of glass surfaces or block "see through" pathways. **Building Articulation** • Structure design features that reduce or avoid the potential for bird strikes, such as secondary and tertiary setbacks, stepped back building design, protruding balconies, recessed windows, and mullioned glazing systems, shall be incorporated to the extent feasible. Balconies and other elements will step back from the water's edge. • Design features that increase the potential for bird strikes, such as walkways constructed of clear glass and "see through" pathways through lobbies, rooms and corridors, shall be avoided to the extent feasible. • Buildings will be sited and designed to minimize glass and windows facing Wildlife Habitat Areas to the maximum extent possible. Design for towers on Parcel H-3 should avoid east-west monolith massing and should include architectural articulation. • The tallest buildings on Parcel H-3 will be located generally on the southern portion of the parcel with building heights decreasing towards the north and west. The foregoing will not be interpreted to preclude incorporating secondary and tertiary setbacks along public streets. • Parcels containing surface parking, such as those depicted for the Sweetwater District, will be designed with parking lots nearer Wildlife Habitat Areas. Site plans on parcels adjacent to Wildlife Habitat Areas will maximum distance between structures and such areas. **Landscaping** • Exterior trees and landscaping shall be located and glass surfaces shall incorporate measures so that exterior trees and landscaping are not reflected on building surfaces. • In small exterior courtyards and recessed areas, the building's edge shall be clearly defined with opaque materials and non-reflective glass. • Interior plants shall be located a minimum of 10 feet away from glass surfaces to avoid or reduce the potential for attracting birds.				

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Number	Mitigation Measure	Responsible Party and Mitigation Timing	Monitoring Agency	Date of Completion	Date of Verification
	Public Education • The owner or operator of each building shall implement an ongoing procedure to the satisfaction of the Port or the City to encourage tenants, residents, and guests to close their blinds, drapes, or other window coverings to reduce or avoid the potential for bird strikes. • The owner or operator of each building shall enroll in the Fatal Light Awareness Program's "Bird-Friendly Building Program" and shall implement ongoing tenant, resident, and guest education strategies, to the satisfaction of the Port or the City, to reduce or avoid the potential for bird strikes, such as elevator and lobby signage and educational displays, e-mail alerts and other bulletins during spring and fall migratory seasons, and other activities designed to enlist cooperation in reducing bird collisions with the building. **Monitoring** • For Phase I projects, the project applicant shall retain a qualified biologist to design a protocol and schedule, in consultation with the U.S. Department of Fish and Wildlife and subject to the approval of the Port or City, as appropriate depending on jurisdiction, to monitor bird strikes which may occur during the first 12 months after the completion of construction. Within 60 days after completion of the monitoring period, the qualified biologist shall submit a written report to the Port or the City, which shall state the biologist's findings and recommendations regarding any bird strikes that occurred. Based on the findings of those reports, the Port or the City, as appropriate depending on jurisdiction, in coordination with the U.S. Department of Fish and Wildlife, will evaluate whether further action is required, which may include further monitoring. • Bird strikes must be monitored in accordance with the NRMP and measures developed to address persistent problem areas. Nighttime lighting in tower buildings must be addressed and evaluated through adaptive management. Minimization of impacts of buildings on birds and the Wildlife Habitat Areas will be a priority in the selection of window coverings, glass color, other exterior materials, and design of exterior lighting and lighting of signs. *Applies to Significant Impacts 4.8-36 and 4.8-37.				

Number	Mitigation Measure	Responsible Party and Mitigation Timing	Monitoring Agency	Date of Completion	Date of Verification
MM 4.9-1	**A.** Prior to construction of the H Street Pier during Phases II and IV or work within Parcel HW-4, a pre-construction eelgrass survey shall be conducted by a qualified marine biologist to confirm the exact amount of eelgrass to be affected at the time of pile driving operations. The pre-construction survey must be conducted during the period of March through October and would be valid for a period of no more than 60 days, with the exception that surveys conducted in August through October would be valid until the following March 1.	Developer -Prior to construction	Port in coordination with qualified biologist		
	B. Prior to construction of the H Street Pier during Phases II and IV or work within Parcel HW-4, the Port shall establish and implement a plan to create new eelgrass habitat. The loss of eelgrass habitat must be mitigated at a 1.2:1 ratio as described in the SCEMP (NMFS 1991, Revision 11). Impacts to approximately 0.4 acre of eelgrass shall require the creation of approximately 0.48 acre of eelgrass to mitigate losses caused by construction of the H Street Pier.	Port - Prior to construction	Port in coordination with qualified biologist		
	C. Prior to or concurrent with the completion of the H Street Pier or work within Parcel HW-4, the Port shall create new eelgrass habitat at a ratio of 1.2:1 for the actual amount of impacts. This shall be done by removing the existing eelgrass currently located at the proposed H Street Pier site and transplanting it at an appropriate location within the filled area of the existing navigation channel, to the satisfaction of a qualified marine biologist.	Developer -Prior to or concurrent with completion of construction	Port in coordination with qualified biologist		
	D. Subsequent to construction of the H Street Pier during Phases II and IV or work within Parcel HW-4, a post-construction eelgrass survey shall be conducted by a qualified biologist. The post-construction survey shall be conducted within 30 days of the cessation of construction activities to confirm the exact amount of eelgrass affected. The difference between the pre-construction and post-construction eelgrass surveys shall determine the amount of required mitigation. In addition, the Port shall: • Conduct transplant reports following construction (Initial Report). • Conduct monitoring reports at 6, 12, 24, 36, 48, and 60 months post-transplant. Specific milestones and criteria for success are directed in the SCEMP along with guidelines for remedial actions if the success criteria are not met (including presence of green sea turtles based on soundings from the existing tagging program), which would require (based on the absence of other mitigating environmental considerations) a Supplementary Transplant Area to be constructed and monitored	Port in coordination with qualified biologist	Port		

Number	Mitigation Measure	Responsible Party and Mitigation Timing	Monitoring Agency	Date of Completion	Date of Verification
	for an additional 5 years. • Initiate mitigation within 135 days of project inception; projects requiring more than 135 days to complete would result in additional mitigation. • Coordinate with Sweetwater Authority to share monitoring reports, as necessary. *Applies to Significant Impacts 4.9-1, 4.9-2, and 4.9-4.				
MM 4.9-2	**A.** An estimated 83 acres of the existing navigation channel shall be filled to −3 to −5.5 feet MLLW. The fill would modify deep and moderately deep open-water habitat to create approximately 83 acres of shallow-water habitat. This area would provide enough transplantable habitat at a depth ideal for eelgrass in this section of the Bay to mitigate for the loss of eelgrass from the channel realignment and completion of the H Street Pier.	Developer	Port		
	B. A mitigation plan with an implementation schedule shall be prepared 30 days prior to any construction or dredge activities. The loss of eelgrass habitat shall be mitigated at a 1.2:1 ratio as described in the SCEMP (NMFS 1991, Revision 11). Based on this formula, impacts to 45.9 acres of eelgrass would require approximately 55.1 acres of eelgrass restoration.	Developer in coordination with a qualified biologist	Port		
	C. Prior to the commencement of in-water work on the channel realignment, a pre-construction eelgrass survey shall be conducted to confirm the exact area of impact at the time of dredging and fill operations. The pre-construction survey shall be conducted during the period of March through October and would be valid for a period of no more than 60 days, with the exception that surveys conducted in August through October would be valid until the following March 1.	Developer in coordination with a qualified biologist	Port		
	D. Subsequent to dredge and fill operations, a post-construction eelgrass survey shall be conduced by a qualified biologist. The post-construction survey shall be conducted within 30 days of the cessation of construction activities to confirm the exact area of eelgrass affected. The difference between the pre-construction and post-construction eelgrass surveys shall determine the amount of required mitigation. In addition, the Port shall: • Conduct transplant reports following construction (Initial Report). • Conduct monitoring reports at 6, 12, 24, 36, 48, and 60 months post-transplant. Specific milestones and criteria for success are directed in the SCEMP along with	Developer in coordination with a qualified biologist	Port		

Number	Mitigation Measure	Responsible Party and Mitigation Timing	Monitoring Agency	Date of Completion	Date of Verification
	guidelines for remedial actions if the success criteria are not met (including presence of green sea turtles based on soundings from the existing tagging program), which would require (based on the absence of other mitigating environmental considerations) a Supplementary Transplant Area to be constructed and monitored for an additional 5 years. • Initiate mitigation within 135 days of project inception; projects requiring more than 135 days to complete would result in additional mitigation. • Coordinate with Sweetwater Authority to share monitoring reports, as necessary. *Applies to Significant Impact 4.9-3.				
MM 4.9-3	**A.** Prior to the commencement of harbor improvements on Parcel HW-3, which includes the placement of bulkheads, the Port or Port tenants, as appropriate, shall prepare and initiate implementation of a plan to create new habitat at a ratio of 2:1 for intertidal mudflat and 4:1 for pickleweed. Impacts to approximately 0.03 acre of intertidal mudflat shall require the in-kind creation of approximately 0.06 acre, and less than 0.001 acre of pickleweed shall require creation of approximately 0.004 acre of comparable habitat. **B.** Restoration shall occur in accordance with *Appendix 4.8-12*. At the time project specific designs are proposed for the Phase IV harbor reconfiguration, the mitigation for impacts to intertidal mudflat and pickleweed shall be re-evaluated by the Port during subsequent environmental review pursuant to State CEQA Guidelines Section 15168 to identify the total impact area and required mitigation for the loss of intertidal mudflat and pickleweed. **C.** Restoration shall occur in accordance with Mitigation Opportunities, *Appendix 4.8-12* to this report, which includes the creation of additional mudflat through the removal of riprap on the Bay shore in the Sweetwater District. As detailed in Mitigation Opportunities, this created habitat would be dominated by pickleweed (*Salicornia virginica*) with subdominants including saltwort (*Batis maritime*), fleshy Jaumea (*Jaumea carnosa*), alkali heath (*Frankenia salina*), and others as listed in Table 4 of *Appendix 4.8-12*. Currently, the mitigation opportunities detailed in *Appendix 4.8-12* are anticipated to be implemented during Phase I. The Port shall verify that the creation of intertidal mudflat satisfies the required mitigation once the final impacts are verified.	Port or Port Tenants -Prior to start of harbor improvements Port or Port Tenants -Prior to start of harbor improvements Port or Port Tenants -Prior to start of harbor improvements	Port Port Port		

Number	Mitigation Measure	Responsible Party and Mitigation Timing	Monitoring Agency	Date of Completion	Date of Verification
	*Applies to Significant Impact 4.9-5.				
MM 4.9-4	**A.** Prior to issuance of a permit by USACE for dredge and/or fill operations in the Bay or Chula Vista Harbor, the applicant shall conduct a focused sediment investigation and submit it to USACE and RWQCB for review and approval. The applicant shall then determine the amount of bay sediment that requires remediation and develop a specific work plan to remediate bay sediments in accordance with permitting requirements of the RWQCB. The work plan shall include but not be limited to: dredging the sediment, allowing it to drain, and analyzing the nature and extent of any contamination. Pending the outcome of the analytical results, a decision by RWQCB shall prescribe the requirements for disposition of any contaminated sediment. **B.** Prior to issuance of a grading permit for marina redevelopment on HW-1 and HW-4, the developer shall submit a work plan for approval by the RWQCB and Port/City that requires the implementation of BMPs, including the use of silt curtains during in-water construction to minimize sediment disturbances, and the confinement of potentially contaminated sediment if contaminated sediment exists. If a silt curtain should be necessary, the silt curtain shall be anchored along the ocean floor with weights (i.e., a chain) and anchored to the top with a floating chain of buoys. The curtain shall wrap around the area of disturbance to prevent turbidity from traveling outside the immediate project area. Once the impacted region resettles, the curtains shall be removed. If the sediment would be suitable for ocean disposal, no silt curtain shall be required. However, if contaminants are actually present, the applicant would be required to provide to the RWQCB and the Port/City an evaluation showing that the sediment would be suitable for ocean disposal. *Applies to Significant Impact 4.9-6.	Applicant -Prior to First USACE Permit Developer -Prior to First Grading Permit	RWQCB in coordination with USACE Port/City and RWQCB		
MM 4.9-5	For the in-water construction components to be completed in Phase IV, the amount of dredging shall be determined during final design of the marinas and harbor reconfiguration. Prior to any dredging, the Port shall develop and implement a plan for the dredging and storage of material to the satisfaction of responsible resource agencies, including USACE. The storage and/or landside disposal of dredge material shall be performed in accordance with the provisions of Mitigation Measure 4.6-6 in *Section 4.6, Air Quality* and all applicable federal, state, and local regulations.	Port -Prior to dredging activities	USACE and other responsible resource agencies		

Number	Mitigation Measure	Responsible Party and Mitigation Timing	Monitoring Agency	Date of Completion	Date of Verification
	*Applies to Significant Impact 4.9-7.				
MM 4.9-6	Prior to issuance of Coastal Development Permits, applicants shall submit a lighting plan and photometric analysis to the Port for review and approval. Lighting of all developed areas adjacent to open water shall be directed away from the water, wherever feasible and consistent with public safety. Lighting fixtures shall provide adequate shielding to protect the aquatic habitat and marine life from night lighting. The lighting plan shall illustrate the location of the proposed lighting standards and type of shielding measures. Low-pressure sodium lighting or the equivalent shall be used if feasible and shall be subject to the approval of the Port. *Applies to Significant Impact 4.9-8.	Applicants -Prior to First Coastal Development Permit	Port		
4.10	The Port shall implement a grading, monitoring, and data recovery program to reduce potential impacts to undiscovered buried archaeological resources on the Proposed Project to the satisfaction of the Director of Land Use Planning. Elements of the program will include that only certified archaeologists and Native American monitors are accepted. The project archaeologist shall monitor all areas identified for excavation, including off-site improvements. The monitors shall be present during the original cutting of previously undisturbed deposits. In the event that a previously unidentified potentially significant cultural resource is discovered, the archaeological monitor shall have the authority to divert or temporarily halt ground disturbance operations in the area of discovery to allow evaluation of potentially significant resource. For significant cultural resources, a Research Design and Data Recovery Program to mitigate impacts shall be prepared and approved by the County, then carried out using professional archaeological methods. In the event that human bones are discovered, the County coroner shall be contacted. In the event that the remains are determined to be of Native American origin, the Most Likely Descendant (MLD) as identified by the Native American Heritage Commission shall be contacted by the project archaeologist to determine proper treatment and disposition of the remains. In the event that previously unidentified cultural resources are discovered, a report documenting the field and analysis results and interpreting the artifact and research data within the context shall be completed and submitted to the satisfaction of the Director of Land Use Planning.				

Number	Mitigation Measure	Responsible Party and Mitigation Timing	Monitoring Agency	Date of Completion	Date of Verification
	* This measure is not associated with a significant impact related to cultural resources; however, it has been incorporated to ensure appropriate implementation and enforcement.				
MM 4.11-1	Prior to the issuance of any grading permit in the Sweetwater District, the applicant shall retain a qualified paleontologist (defined as an individual with an M.S. or Ph.D. in paleontology or geology who is familiar with paleontological procedures and techniques) who shall carry out the following mitigation program. Fieldwork may be conducted by a qualified paleontological monitor (defined as an individual who has experience in the collection and salvage of fossil materials) who at all times shall work under the direction of the qualified paleontologist. • The paleontologist shall attend all pre-grading meetings to inform the grading and excavation contractors of this paleontological resource mitigation program and shall consult with them with respect to its implementation. • The paleontological monitor shall be on site at all times during the original cutting of previously undisturbed sediments of highly sensitive geologic formations to inspect cuts for contained fossils in the low coastal mesa adjacent to Bay Boulevard in the northeastern portion of the Sweetwater District. The paleontological monitor shall be on site during the original cuts in deposits with a moderate resource sensitivity. • If fossils are discovered, the paleontologist or monitor shall recover them. In instances where recovery requires an extended salvage time, the paleontologist or monitor shall be allowed to temporarily direct, divert, or halt grading to allow recovery of fossil remains in a timely manner. Where deemed appropriate by the paleontologist or monitor, a screen-washing operation for small fossil remains shall be set up. • Recovered fossils, along with copies of all pertinent field notes, photographs, and maps, shall be deposited (with the applicant's permission) in a scientific institution with paleontological collections. A final summary report that outlines the results of the mitigation program shall be completed. This report shall include discussion of the methods used, stratigraphy exposed, fossils collected, and significance of recovered fossils. All work shall be completed to the satisfaction of the Port or the City of Chula Vista, as appropriate.	Applicant on coordination with qualified paleontologist -Prior to issuance of any grading permit	Port or City		

Number	Mitigation Measure	Responsible Party and Mitigation Timing	Monitoring Agency	Date of Completion	Date of Verification
	*Applies to Significant Impact 4.11-1				
MM 4.12-1	Prior to the issuance of any permit for excavation, demolition, grading, or construction activities in the area described in the relevant permit based on the planned future use, the following shall occur: **A.** The applicant shall contact the lead regulatory agency (RWQCB/DEH/DTSC) to discuss the appropriate course of action for the area of concern described in the permit based on the planned future site use. Remediation of contaminated soil and/or groundwater in these areas shall meet cleanup requirements established by the local regulatory agency based on the planned future use of the area and shall be protective of human health with regard to future occupants of these areas. The applicant shall submit documentation showing that contaminated soil and/or groundwater in the area covered by the permit shall have been avoided or remediated to meet cleanup requirements established by the local regulatory agencies (RWQCB/DEH/DTSC).	Applicant -Prior to First Permit for Excavation, Demolition. Grading, or Construction	RWQCB /DEH/ DTSC		
	B. The applicant shall obtain written authorization from the regulatory agency (RWQCB/DEH/DTSC) confirming the completion of any remediation required for development of the site, exclusive of any on-going monitoring obligations. A copy of the authorization shall be submitted to the Port and City to confirm meeting all requirements acceptable to the governing agency and that the proposed development parcel has been cleaned up or is in process to the satisfaction of the regulatory agency. In the situation where previous contamination has occurred on a site that has a previously closed case or on a site included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5, the DEH shall be notified of the proposed land use.	Applicant -Prior to First Permit for Excavation, Demolition. Grading, or Construction	RWQCB /DEH/ DTSC		
	C. A Soil and Water Management Plan (SWMP) for Phase I activities shall be developed to provide procedures for addressing unknown contamination and subsurface equipment (i.e., pipes, tanks) or debris encountered during construction and excavation. A SWMP for subsequent phases shall be prepared prior to construction and excavation or such development. The plan shall be developed by a qualified environmental consultant and shall identify notification, monitoring, sampling, testing, handling, storage, and disposal of contaminated media or substances (soil, groundwater) measures to avoid or reduce impacts associated with hazardous materials contamination to a less than significant impact. The SWMP shall be approved by the Port and/or City prior to commencement of	Applicant in coordination with a qualified environmental consultant -Prior to Construction and Excavation	Port and/or City		

Number	Mitigation Measure	Responsible Party and Mitigation Timing	Monitoring Agency	Date of Completion	Date of Verification
	excavation, grading, demolition or construction. A qualified environmental consultant shall monitor excavations, grading, and construction activities in accordance with the plan. Any excess soil generated by construction shall be characterized to determine disposal options.				
	If indications of contamination are encountered during construction, a qualified environmental consultant shall be retained to observe the contamination, consult with the regulatory oversight agency, perform environmental media (soil, soil gas, and groundwater) sampling and analysis as necessary, report the result, and provide recommendations or further action.		RWQCB /DEH/ DTSC		
	In areas that have been identified as being contaminated, appropriate observation by a qualified environmental professional and sampling is required to characterize soil prior to off-site disposal. Contaminated soil shall be properly disposed of at an off-site facility. Fill soils shall be sampled to ensure that imported soil is free of contamination.		RWQCB /DEH/ DTSC		
	Within one month of completion of cleanup activities, a report summarizing the results of monitoring shall be submitted by the applicant to the satisfaction of the Port and City.				
	D. In the event that grading or construction activities result in the discovery of hazardous waste, the Port and/or City shall ensure compliance with State of California CCR Title 23 Health and Safety Regulation. Excavated soils impacted by hazardous materials or waste shall be characterized and disposed of in accordance with CCR Title 14 and 22. The San Diego RWQCB shall be contacted regarding provisions for possible reuse as backfill of soils impacted by hydrocarbons. Excavated soils shall be lined and covered with an impermeable material to prevent spread of contaminated material.	Port and/or City	RWQCB		
	The applicant must have an Industrial Hygienist registered in the State of California on site while working in areas where contamination is encountered. The responsibility of this professional would be to monitor the work site for contamination and to implement mitigation measures as needed to prevent exposure to the workers or public. These measures may include signage and dust control.	Applicant	Port and/or City		
	Dewatering activities during construction shall be limited to the extent practicable and				

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Number	Mitigation Measure	Responsible Party and Mitigation Timing	Monitoring Agency	Date of Completion	Date of Verification
	water generated by dewatering shall be tested to determine treatment and disposal options in accordance with all applicable laws and regulations. *Applies to Significant Impacts 4.12-1, 4.12-3, 4.12-7, 4.12-12, 4.12-13, 4.12-17, and 4.12-18.	Developer	RWQCB		
MM 4.12-2	Prior to construction, all contractor and subcontractor project personnel shall receive training regarding the appropriate work practices necessary to effectively comply with the applicable environmental laws and regulations, including, without limitation, hazardous materials spill prevention and response measures. Hazardous materials shall not be disposed of or released onto the ground, the underlying groundwater, or any surface water. Totally enclosed containment shall be provided for all trash. All construction waste, including trash and litter, garbage, other solid waste, petroleum products, and other potentially hazardous materials shall be removed to a hazardous waste facility permitted or otherwise authorized to treat, store, or dispose of such materials. The Port of San Diego shall require that a Business Emergency Plan (BEPP) is prepared for the construction of the Proposed Project, if not covered under their approved SWPPP. The plan shall identify all hazardous materials (e.g., fuels, solvents) that would be present on any portion of the construction area and project site. Contingency analysis and planning shall be presented to identify potential spill or accident situations, how to minimize their occurrence, and how to respond should they occur. The plan shall also identify spill response materials (e.g., absorbent pads, shovels) to be kept at the construction site and their locations. Hazardous materials spill kits shall be maintained on site for small spills. *Applies to Significant Impact 4.12-2.	Developer -Prior to start of construction Applicant in coordination with a qualified consultant -Prior to Construction and Excavation Developer	Port Port Port		
MM 4.12-3	In-water construction activities shall be conducted in accordance with Mitigation Measure 4.5-4 in *Section 4.5, Hydrology/Water Quality.* *Applies to Significant Impact 4.12-4				

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Number	Mitigation Measure	Responsible Party and Mitigation Timing	Monitoring Agency	Date of Completion	Date of Verification
MM 4.12-4	In event of removal of USTs, the soil and groundwater within the vicinity of the USTs shall be adequately characterized and remediated, if necessary, to a standard that would be protective of water quality and human health, based on future site use. In areas to be redeveloped, a geophysical survey shall be conducted by the applicant to evaluate if there are any previously unidentified USTs or piping still existing in areas to be redeveloped. In the event that USTs are not identified in the HMTS or undocumented areas of contamination are encountered during grading activities (as indicated by odors, discolored soil, etc.), all work shall cease until appropriate health and safety procedures are implemented pursuant to the applicant's contingency plan. The applicant shall prepare a contingency plan to address contractor procedures for such an event, to minimize the potential for construction delays. In addition, the lead regulatory agency (DEH or RWQCB, depending on the nature of the contamination) shall be notified regarding the contamination. Each agency and program within the respective agency has its own mechanism for initiating an investigation. The applicant shall conduct contamination remediation and removal activities in accordance with pertinent local, state, and federal regulatory guidelines, under the oversight of the appropriate regulatory agency. Parcels contaminated with hazardous materials will be remediated to levels adequate to protect human health and the environment. *Applies to Significant Impact 4.12-5.	Applicant -During grading activities Applicant -During grading activities	Lead Regulatory Agency (DEH or RWQCB) Lead Regulatory Agency (DEH or RWQCB)		
MM 4.12-5	Prior to the issuance of a demolition permit for buildings scheduled for demolition that have not been surveyed to date for ACMs and LBPs, the applicant shall conduct a survey to determine the locations and amounts of ACMs and LBPs present, as well as other miscellaneous hazardous materials, such as potential mercury-containing thermostats and switches, light ballasts and switches that might contain PCBs, fluorescent light tubes that might contain mercury vapor, exit signs that might contain a radioactive source, air conditioning systems, lead-acid batteries and batteries associated with emergency lighting systems, and Freon™-containing refrigeration systems. Should ACMs, LBPs, or other miscellaneous hazardous building materials be encountered in the site structures, the applicant shall obtain a licensed abatement contractor to remove the hazardous materials in accordance with all applicable federal, state, and local laws, regulations, and permitting requirements prior to initiation of demolition activities.	Applicant -Prior to First Demolition Permit	Port in coordination with lead regulatory agency		

Number	Mitigation Measure	Responsible Party and Mitigation Timing	Monitoring Agency	Date of Completion	Date of Verification
	Prior to any proposed demolition activities, the applicant shall conduct a thorough inspection of the facilities that have permits to store hazardous materials to confirm whether a release of hazardous materials at these facilities has impacted the underlying soil and/or groundwater. The facilities that currently store hazardous materials are located at 596 Sandpiper Way, 997 G Street, and 979 G Street. If indications of contamination are encountered during demolition, a qualified environmental consultant shall be retained to observe the contamination, consult with the regulatory oversight agency, perform environmental media (soil, soil gas, and groundwater) sampling and analysis as necessary, report the result and provide recommendations for further action. *Applies to Significant Impact 4.12-6.	Applicant in coordination with qualified environmental consultant -Prior to First Demolition Permit	Lead Regulatory Agency (DEH or RWQCB)		
MM 4.12-6	Prior to construction, remediation activities for known contamination shall be performed to be protective of construction workers on the project site, as required by Mitigation Measure 4.12-1. *Applies to Significant Impact 4.12-7.	Port and City - Prior to construction	Port and City		
MM 4.12-7	Management of the parks throughout the project site must be required to comply with the Port and City's Integrated Pest Management Policies (IPM). IPM shall be used on all landscaped areas. In addition, fertilizers must be minimized and only non-toxic products used. Runoff from irrigation sprinklers into surface waters must be minimized and use of mulching and drip irrigation, where needed, maximized. Measures shall be employed to ensure that landscape chemicals and wastes do not get into surface waters or habitat areas. *Applies to Significant Impact 4.12-8.	Port and City -Ongoing management of parks	Port and City		
MM 4.12-8	For development in the Sweetwater District that would result in exposure of any soil containing pesticides/herbicides, excavation and disposal of the contaminated soils at an appropriately licensed facility shall be conducted as required by applicable law, to reduce potential for future site occupants' exposure. Otherwise, soil capping shall be implemented. Capping could be performed by placement of a clean soil fill layer over the impacted soil, which in turn could be overlain by other surface covers (i.e., turf and other vegetative cover and pavement). *Applies to Significant Impact 4.12-9.	Developer -When grading activities result in exposure of any soil containing pesticides/herbicides	DEH and/or RWQCB		

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Number	Mitigation Measure	Responsible Party and Mitigation Timing	Monitoring Agency	Date of Completion	Date of Verification
MM 4.12-9	At the time project specific designs are proposed for any development in Phases II through IV, a site assessment must be conducted by a qualified expert satisfactory to the City and/or Port to determine concentrations of contaminants in soil, soil gas, and groundwater on the parcel proposed for development. Further site assessment may be required as part of subsequent environmental review pursuant to State CEQA Guidelines. A HHRA, or other means of evaluation, must be prepared for any new development in Phases II through IV, analyzing each parcel proposed for development within the Proposed Project area. If the calculated risk from the HHRA (or other means of evaluation) is considered to be significant for a receptor in a parcel, mitigation measures shall be implemented to reduce the risk to below a level of significance. These measures may include one or both of the following: • Remediating the contaminant sources and impacts in the respective media (i.e., soil, soil gas, groundwater) to levels below the health-based remediation criteria. Parcels contaminated with hazardous materials will be remediated to levels adequate to protect human health and the environment. • Implementing institutional and/or engineering controls to eliminate the pathway of concern or attenuate the contaminant exposure to levels below the health-based remediation criteria. *Applies to Significant Impact 4.12-10	Applicant in coordination with qualified expert -When Project specific designs are proposed Applicant in coordination with qualified expert	City and/or Port City and/or Port		
MM 4.12-10	Prior to the approval of Design Review for development on Parcels H-3, H-13, H-14, H-15, and HP-5, the applicant shall submit a design plan for the project demonstrating to the satisfaction of the City and/or Port that proposed buildings shall be designed so as to prevent a risk to human health associated with intrusion of CVOC vapors into future buildings on these parcels. Such design measures may include vapor barriers or passive vent systems. *Applies to Significant Impacts 4.12-11, 4.12-16, 4.12-19, and 4.12-20.	Applicant -Prior to Design Review Approval	Port and/or City		
MM 4.12-11	**A.** Remediation in soil locations identified as exceeding health-based remediation criteria shall be performed prior to redevelopment as targeted "hotspot" removal with confirmation sampling to demonstrate that the COPCs have been removed and concentrations in remaining soil are less than the remediation criteria.	Developer -Prior to redevelopment /construction	Port and/or City		

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Number	Mitigation Measure	Responsible Party and Mitigation Timing	Monitoring Agency	Date of Completion	Date of Verification
	B. Remediation of the areas of HP-5 that contain COPCs at concentrations exceeding remediation criteria shall be completed prior to construction activities depending on the design of proposed development and the potential for workers to be exposed to contamination in these areas. C. Remediation of the areas of HP-5 that contain concentrations of CVOCs may be performed by various methods, including soil vapor extraction and treatment. Any required remediation shall be performed prior to construction activities in order to protect construction workers in these areas. This parcel shall be remediated to levels adequate to protect human health and the environment. *Applies to Significant Impacts 4.12-14 and 4.12-15.	Developer -Prior to redevelopment /construction Developer -Prior to redevelopment /construction	Port and/or City Port and/or City		
MM 4.13.3-1	Prior to reconstruction and/or reconfiguration of existing parks within the Project, the Port shall post a public notice at each affected park site at least 30 days prior to commencement of construction activity and maintain the posting throughout reconstruction of each affected park. Said public notice shall identify the duration of park closure and information related to optional locations for public park and recreational facilities. *Applies to Significant Impact 4.13.3-1.	Port -Prior to reconstruction/reconfiguration of parks	Port		
MM 4.13.3-2	Prior to approval of a building permit for any project within the City's jurisdiction, the applicant shall pay all applicable recreation and park fees, including those set forth in Chapters 3.50 and 17.10 in the City's Municipal Code. *Applies to Significant Impact 4.13.3-2.	Applicant -Prior to Building Permit Approval	City		
MM 4.13.4-1	Prior to the issuance of building permits for any residential project, the applicant shall pay required school mitigation fees. As indicated above, the fees set forth in Government Code Section 65996 constitute the exclusive means of both "considering" and "mitigating" school facilities impacts of projects (Government Code Section 65996(a)). They are "deemed to provide full and complete school facilities mitigation" (Government Code Section 65996(b)). Once the statutory school mitigation fee (sometimes referred to as a "developer fee") is paid, the impact would be deemed mitigated as a matter of law.	Applicant -Prior to First Building Permit	City		

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Number	Mitigation Measure	Responsible Party and Mitigation Timing	Monitoring Agency	Date of Completion	Date of Verification
	*Applies to Significant Impacts 4.13.4-1 and 4.13.4-2				
MM 4.14.1-1	To avoid significant construction-related noise impacts, the following measures shall be followed: • Construction activity shall be prohibited Monday through Friday from 10:00 p.m. to 7:00 a.m., and Saturday and Sunday from 10:00 p.m. to 8:00 a.m., pursuant to the Chula Vista Municipal Code Section 17.24.050 (Paragraph J). It should be noted, however, that construction may require connections to existing water facilities, both on- and off-site, and may need to occur between the hours of 10:00 p.m. and 6:00 a.m. in order to minimize impacts to existing customers who cannot experience flow restrictions during daytime hours. • All stationary noise generating equipment, such as pumps and generators, shall be located as far as possible from noise sensitive receptors. Where practicable, noise-generating equipment shall be shielded from noise sensitive receptors by attenuating barriers or structures. Stationary noise sources located less than 200 feet from sensitive receptors shall be equipped with noise reducing engine housings. Water tanks, equipment storage, staging, and warm-up areas shall be located as far from noise sensitive receptors as possible. • All construction equipment powered by gasoline or diesel engines shall have sound control devices at least as effective as those originally provided by the manufacturer; no equipment shall be permitted to have an unmuffled exhaust. • Any impact tools used during demolition of existing infrastructure shall be shrouded or shielded, and mobile noise generating equipment and machinery shall be shut off when not in use. • Construction vehicles accessing the site shall be required to use the shortest possible route to and from I-5, provided the route does not expose additional receptors to noise. • Construction equipment shall be selected as those capable of performing the necessary tasks with the lowest sound level and the lowest acoustic height possible to perform the required construction operation. *Applies to Significant Impacts 4.14.1-1 and 4.14.1-2.	Developer -During construction	City		
MM 4.14.1-2	Construction-related noise from off-site water improvements shall be limited during the typical breeding season of January 15 to August 31 adjacent to the Sweetwater Marsh	Developer -During	Port and/or City		

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Number	Mitigation Measure	Responsible Party and Mitigation Timing	Monitoring Agency	Date of Completion	Date of Verification
	NWR, F & G Street Marsh, and the J Street Marsh. The current accepted noise threshold is 60 dB(A) Leq; thus construction activity shall not exceed this level, or ambient noise levels if higher than 60 dB(A) during the breeding season. If construction does occur within the breeding season or adjacent to the marshes, the project developer shall prepare and submit an acoustical analysis to the Port and/or City, which shall determine whether noise barriers would be required to reduce the expected noise levels below the threshold. If noise barriers or construction activities are unable to result in a level of noise below the threshold, construction in these areas shall be delayed until the end of the breeding season. *Applies to Significant Impact 4.14.1-3.	construction or if during breeding season prior to construction			
MM 4.14.1-3	**A.** Prior to commencement of grading activities for all Phase I projects, the applicant(s) shall submit a traffic control plan for review and approval by the Port (for development on Port properties) and City Engineer and the Director of Public Works (for development on property and ROWs within the City's jurisdiction). **B.** Prior to commencement of grading activities for all subsequent phases, the applicant(s) shall submit a traffic control plan for review and approval by the Port (for development on Port properties) and City Engineer and the Director of Public Works (for development on property and ROWs within the City's jurisdiction). *Applies to Significant Impact 4.14.1-4.	Applicant(s) -Prior to start of grading	Port or City		
MM 4.14.2-1	Prior to the approval of a building permit for any development in Phases III and IV, the City shall verify that it has adequate sewer capacity to serve the proposed development. In the event the City does not have adequate sewer capacity to serve the proposed development, no building permit shall be approved for the proposed development until the City has acquired adequate sewer capacity to serve the proposed development. *Applies to Significant Impact 4.14.2-1.	City -Prior to Building Permit Approval	City		
MM 4.14.2-2	To avoid significant construction-related noise impacts, the following measures shall be followed: • Construction activity shall be prohibited Monday through Friday from 10:00 p.m. to 7:00 a.m., and Saturday and Sunday from 10:00 p.m. to 8:00 a.m., pursuant to the Chula Vista Municipal Code Section 17.24.050 (Paragraph J).	Developer -During construction	Port or City		

Number	Mitigation Measure	Responsible Party and Mitigation Timing	Monitoring Agency	Date of Completion	Date of Verification
	• All stationary noise-generating equipment, such as pumps and generators, shall be located as far as possible from noise sensitive receptors. Where practicable, noise-generating equipment shall be shielded from noise sensitive receptors by attenuating barriers or structures. Stationary noise sources located less than 200 feet from sensitive receptors shall be equipped with noise reducing engine housings. Water tanks, and equipment storage, staging, and warm-up areas shall be located as far from noise sensitive receptors as possible. • All construction equipment powered by gasoline or diesel engines shall have sound control devices at least as effective as those originally provided by the manufacturer; no equipment shall be permitted to have an unmuffled exhaust. • Any impact tools used during demolition of existing infrastructure shall be shrouded or shielded, and mobile noise generating equipment and machinery shall be shut off when not in use. • Construction vehicles accessing the site shall be required to use the shortest possible route to and from I-5, provided the route does not expose additional receptors to noise. • Construction equipment shall be selected as those capable of performing the necessary tasks with the lowest sound level and the lowest acoustic height possible to perform the required construction operation. *Applies to Significant Impact 4.14.2-2.				
MM 4.14.2-3	Construction-related noise shall be limited during the typical breeding season of January 15 to August 31 adjacent to the Sweetwater Marsh NWR, F & G Street Marsh, and the J Street Marsh. The current accepted noise threshold is 60 dB(A) Leq; thus construction activity shall not exceed this level, or ambient noise levels if higher than 60 dB(A) during the breeding season. If construction does occur within the breeding season or adjacent to the marshes, the project developer shall prepare and submit an acoustical analysis to the Port and the City, which shall determine whether noise barriers would be required to reduce the expected noise levels below the threshold. If noise barriers or construction activities are unable to result in a level of noise below the threshold, construction in these areas shall be delayed until the end of the breeding season. *Applies to Significant Impact 4.14.2-3.	Developer - During construction or if during breeding season prior to construction	Port or City		

Number	Mitigation Measure	Responsible Party and Mitigation Timing	Monitoring Agency	Date of Completion	Date of Verification
MM 4.14.2-4	**A.** Prior to commencement of grading activities for all Phase I projects, the applicant(s) shall submit a traffic control plan for review and approval by the Port (for development on Port properties) and City Engineer and the Director of Public Works (for development on property and ROWs within the City's jurisdiction). **B.** Prior to commencement of grading activities for all Phase II–IV projects, the applicant(s) shall submit a traffic control plan for review and approval by the Port (for development on Port properties) and City Engineer and the Director of Public Works (for development on property and ROWs within the City's jurisdiction). *Applies to Significant Impact 4.14.2-4	Applicant -Prior to start of grading Applicant -Prior to start of grading	Port and City Engineer and Director of Public Works Port and City Engineer and Director of Public Works		
MM 4.14.2-5	**A.** Prior to the issuance of a Coastal Development Permit for Properties within the Port's jurisdiction and prior to the issuance of a grading permit for properties within the City's jurisdiction, the applicant shall notify the RWQCB of dewatering of contaminated groundwater during construction. If contaminated groundwater is encountered, the project developer shall treat and/or dispose of the contaminated groundwater (at the developer's expense) in accordance with NPDES permitting requirements, which includes obtaining a permit from the Industrial Wastewater Control Program to the satisfaction of the RWQCB. **B.** Prior to the discharge of contaminated groundwater for all construction activities, should flammables, corrosives, hazardous wastes, poisonous substances, greases and oils and other pollutants exist on site, a pretreatment system shall be installed to pre-treat the water to the satisfaction of the RWQCB before it can be discharged into the sewer system. *Applies to Significant Impact 4.14.2-5.	Applicant -Prior to First Coastal Development Permit (Port)/First Grading Permit (City) Applicant -During construction	Port, City and RWQCB RWQCB		
MM 4.15-1	Prior to the grading of parcels for specific developments, the applicant shall provide a comprehensive site-specific geotechnical evaluation, including subsurface exploration and laboratory testing showing that individual parcels are suitable for proposed development work and that on-site fill materials and soils can support proposed structures. The applicant shall submit a geotechnical design report to the Port or City, depending on jurisdiction, for approval showing site-specific measures to be employed. As applicable, these measures shall include:	Applicant -Prior to start of grading	Port or City		

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Number	Mitigation Measure	Responsible Party and Mitigation Timing	Monitoring Agency	Date of Completion	Date of Verification
	• Conformance to the California Building Code Seismic Zone 4 Design Parameters, as detailed in Table 1 of the geotechnical study (see Appendix 4.15-1) • Design capable of withstanding strong seismic accelerations • Earthwork procedures, including removal, moisture conditioning, and recompaction of existing fills on the site • Selective grading, densification of the subsurface soils, and/or deep foundations • Removal, moisture conditioning, and compaction of bay deposits/alluvial soils. Deep foundations shall be used for structural support in areas of relatively thick bay deposits/alluvium • Removal or deep burial of expansive soils during grading, moisture conditioning, or specially designed foundations and slabs • Removal, moisture conditioning, and compaction of the topsoil on site. *Applies to Significant Impact 4.15-1 through 4.15-5.				
MM 4.15-2	For all phases, the project applicant shall prepare a site specific geotechnical study. Mitigation of potential hazards due to liquefaction may include the densification or removal of the potentially liquefiable soil and placement of surcharge fills within building areas, or the use of deep foundation systems and mat slabs which still provide acceptable structural support should liquefaction occur. Soil densification can be accomplished by surcharging, compaction grouting, vibrocompaction, soil mixing, and deep dynamic compaction. Deep foundation systems may be used to transmit structural loads to bearing depths below the liquefiable zones and may consist of driven piles or drilled piles. *Applies to Significant Impact 4.15-2.	Applicant -Prior to First Building Permit	Port or City		
MM 4.15-3	Prior to the grading of parcels for the Pacifica development, the applicant shall adhere to the site-specific geotechnical evaluation prepared for the project or any amendment as approved by the Port/City (*Appendix 4.15-5*, Geocon Preliminary Geotechnical Investigation prepared for Pacifica Companies (February 2008), Sections 7 and 8 Conclusions and Preliminary Recommendations) which outlines general requirements and specific recommendations regarding soil and excavation, seismic design criteria, grading, consolidation settlement, ground improvement methods, slope stability, temporary slopes and shoring, groundwater and dewatering, shallow and deep	Applicant -Prior to start of grading	Port or City		

Number	Mitigation Measure	Responsible Party and Mitigation Timing	Monitoring Agency	Date of Completion	Date of Verification
	foundations, subterranean structures, concrete slabs-on-grade, concrete flatwork, retaining walls and lateral loads, pavement, and drainage and maintenance. *Applies to Significant Impacts 4.15-3 and 4.15-4.				
MM 4.15-4	Prior to the grading of parcels for the RCC development, the applicant shall adhere to the site-specific geotechnical evaluation prepared for the project or any amendment as approved by the Port/City (*Appendix 4.15-4*, Geocon Geotechnical Investigation prepared for Gaylord Hotels (January 2008), Section 6. Conclusions and Recommendations), which outlines general requirements and specific recommendations regarding soil and excavation, seismic design criteria, grading, temporary slopes and shoring, groundwater and dewatering, hotel/convention center/parking structure/flex space foundation, ancillary structure foundation, concrete slabs-on-grade, retaining walls and lateral loads, preliminary pavements, and drainage and maintenance. *Applies to Significant Impact 4.15-5.	Applicant -Prior to start of grading	Port or City		
MM 4.16-1	Prior to the issuance of certificates of occupancy or building permits, the project applicant shall demonstrate that the Proposed Project complies with Title 24 of the California Energy Efficient Standards for Residential and Nonresidential Buildings. These requirements, along with the following measures, shall be incorporated into the final project design to the satisfaction of the Port and the Director of Planning and Building for the City: • Use of low NO_x emission water heaters • Installation of energy-efficient and automated air conditioners when air conditioners are provided • Energy-efficient parking area lights • Exterior windows shall be double paned. Implementation of these measures along with the SDG&E efforts for long-term energy supply as outlined in their filing with the CPUC that proposes a mix of conservation, demand response, generation, and transmission (http://www.sdenergy.org/uploads/7-9-04SDG&E_LTRP.pdf) would reduce the potential significant impact to below a level of significance. *Applies to Significant Impact 4.16-1.	Applicant -Prior to First Certificate of Occupancy	Port and City Director of Planning or Building		

Number	Mitigation Measure	Responsible Party and Mitigation Timing	Monitoring Agency	Date of Completion	Date of Verification
MM 4.16-2	The following standards are intended to be interpreted broadly and with the flexibility to adapt to new energy technology and evolving building construction and design practices. They will apply to and govern development of all individual parcels within the Proposed Project area, except Parcels HP-5, H-13, H-14, and H-15. The term "Development" will mean the development of an individual parcel within the Proposed Project area. **A.** To help reduce the need for fossil-fueled power generation, reduce greenhouse gas emissions, and support the California Energy Commission's Loading Order for Electricity Resources, all developments will achieve a minimum of a fifty (50) percent reduction in annual energy use as described below: 1. Each building in each Development will perform at least fifteen (15) percent better than Title 24, Part 6 of the California Building Energy Efficiency Standards ("Title 24") in effect as of the date of this FEIR. The minimum energy efficiency performance standard adopted by the City is hereinafter described as its "Energy Efficiency Requirement" or "EER." Should revised Title 24 standards be adopted by the State of California, the City's EER that is in effect at the time a building permit application is submitted for such Development shall apply. 2. The balance of the reduction in annual energy use required will be achieved through the use of any combination of the energy reduction measures described below. To achieve compliance, sponsors of Developments may select one of two paths. The first path is based on Title 24 ("Title 24 Path") and the second is described in Energy and Atmosphere, Credit 1 "Optimized Energy Performance" (Credit EA-/c1) in the US Green Building Council's Leadership in Energy and Environmental Design (LEED) Version 3 system ("LEED Path"). The definition of the term "Baseline" against which energy reduction will be measured will vary depending on the path selected and is further described in Exhibit 3 of the MMRP to this Agreement. Choosing the LEED Path does not require a Development to achieve LEED Certification, but simply uses the methodology of EA-/c1. a. Renewable Energy generated within the boundaries of the Development will be credited toward the energy reduction requirement of Section A 25.2. The term "Renewable Energy" will mean energy derived from the sources described in California Public Resources Code section 25741 (b)1. b. Renewable Energy generated on one or more sites ("Renewable Energy Sites")	Applicant -Prior to Building Permit Approval	Port and City in Coordination with the District.		

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	within the boundaries of the Proposed Project by the Port, City or other third party and fed to the electrical grid or to the Development will be credited toward the energy reduction requirement described above. Aggregate energy generated on Renewable Energy Sites may be allocated to an individual Development up to the amount necessary to achieve such Development's compliance with the energy reduction requirement described above. Once allocated to a Development, the amount of energy generated by Renewable Energy Sites so allocated may not be further allocated to another development. c. Participation in a City of Chula Vista sponsored energy efficiency program provided that the resulting energy reduction may be calculated and verified. The methodology for calculating the amount of the credit toward the energy reduction requirement described above under the Title 24 Path and the LEED Path as described in Exhibit 3 of the MMRP. d. Each Development will develop, implement, and for the life of each Development, maintain a measurement and verification plan ("M&V Plan"). Such participation has been shown to increase the persistence of energy efficiency ("EE") and also to provide a way of recognizing and encouraging the ongoing conservation efforts of occupants and facility managers and will be awarded a waiver for five (5) percent credit against the Baseline to determine compliance with the energy reduction requirement described above. The Port will include in all leases the requirement to perform an energy audit every three (3) years for the convention centers and hotel Developments over 300 rooms and five (5) years for all other Developments to ensure that all energy systems are performing as planned or corrective action will be taken if failing to meet EE commitments. e. Participation in one of SDG&E's Voluntary Demand Reduction (DR) utility rates will be awarded a waiver for three (3) percent credit against the Baseline to determine compliance with the energy reduction requirement described above. f. Participation in one of SDG&E's Mandatory Demand Reduction (DR) utility rates will be awarded a waiver for five (5) percent credit against the Baseline to determine compliance with the energy reduction requirement described above. g. Incorporation of natural ventilation into design such that at least 75% of the conditioned area is naturally ventilated according to the guidelines set forth in Exhibit 3 of the MMRP, and if this benefit was not included in the energy efficiency calculations, the project will be awarded either: a waiver for five (5) percent credit against the				

Number	Mitigation Measure	Responsible Party and Mitigation Timing	Monitoring Agency	Date of Completion	Date of Verification
	Baseline to determine compliance with the energy reduction requirement described above; or, a waiver for ten (10) percent credit will be awarded if the natural ventilation system is coupled with an energy or cooling system that does not draw from the grid if and when natural ventilation is not used. This may be prorated if less than 75% of the conditioned area is naturally ventilated. 3. The parties understand and acknowledge that the energy reduction measures described above for a Development or component of a Development may be phased in over time to achieve compliance with the energy reduction provided such energy reduction measures are completed no later than thirty-six (36) months following issuance of a certificate of occupancy for such Development or such component thereof. 4. To further incent responsible and sustainable development practices within the boundaries of the Proposed Project, the Port, the City and the Redevelopment Agency will consider voluntary commitments to levels of energy reduction in excess of the energy requirements described above commitment to achievement of a LEED Certification, and/or a "Living Building Challenge" in connection with the selection of respondents in RFP/RFQ processes for developments within the Proposed Project area. 5. Within one year following the CCC's approval of a PMP amendment substantially consistent with the Proposed Project, the Port will in good faith consider adoption of an ordinance, in a public hearing process, that if approved by the Board of Port Commissioners, will require the following: a. Within six (6) months following adoption of the ordinance and every three (3) years thereafter, the Port will conduct an energy efficiency and renewable energy analysis that will: i. Assess the feasibility and cost-effectiveness of programs and options to reduce demand on the electric grid from all lands under Port's jurisdiction; and ii. Include, but not be limited to, an assessment of the potential for reduction in energy use on all land under Port's jurisdiction through increases in energy efficiency, demand response, clean renewable and distributed energy generation and other methods and technologies. b. Upon the completion of each analysis, the Port will consider good faith implementation of cost-effective programs and options as part of its commitment				

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Number	Mitigation Measure	Responsible Party and Mitigation Timing	Monitoring Agency	Date of Completion	Date of Verification
	to greenhouse gas reductions and global climate change prevention activities consistent with Assembly Bill 32. c. The results of each analysis will be published on the Port's website and received by the Port's Board of Port Commissioners in a public forum. *Applies to Significant Impact 4.16-1.				
MM 4.17-1	The Redevelopment Agency will use all Low and Moderate Income Housing funds generated from within the Bayfront Redevelopment Project Area on the production of affordable housing units, inside and/or outside of redevelopment areas, for very low, low and moderate income individuals/families only in areas located west of I-805 in the City of Chula Vista. * This measure is not associated with a significant impact related to population; however, it has been incorporated to ensure appropriate implementation and enforcement.	Redevelopment Agency			
Significant and Unavoidable Impacts					
—	No feasible mitigation beyond redesign of the project as identified as a project alternative would reduce this impact to view quality. See *Chapter 5, Alternatives*, for a discussion of design options that would allow for an overall reduction in height and bulk of the proposed development. *Applies to Significant Impact 4.1-4.	—	—		
MM 4.1-3	Prior to the approval of a building permit for any residential project, the applicant shall pay a PFDIF or equivalent fee in an amount calculated according to the City's PFDIF program in effect at the time of permit issuance. *Applies to Significant Impact 4.1-5.	Applicant -Prior to Building Permit Approval	City		
MM 4.2-8	The Port and the City shall participate in a multi-jurisdictional effort conducted by Caltrans and SANDAG to assist in developing a detailed I-5 corridor level study that will identify transportation improvements along with funding, including federal, state, regional, and local funding sources and phasing that would reduce congestion with Caltrans standards on the I-5 south corridor from the SR-54 interchange to the Otay River (the "I-5 South Corridor") (hereinafter, the "Plan"). Local funding sources identified in the Plan shall include fair share contributions related to private and/or public development based on the	City, other cities along I-5, the Port, SANDAG, and Caltrans	Port Board of Commissioners and City Council		

Number	Mitigation Measure	Responsible Party and Mitigation Timing	Monitoring Agency	Date of Completion	Date of Verification
	nexus established in this Draft EIR as well as other mechanisms. The Plan required by this mitigation shall include the following: a. The responsible entities (the Entities) included in this effort will include, but may not be limited to, the City, other cities along I-5, the Port, SANDAG, and Caltrans. Other entities will be included upon the concurrence of the foregoing Entities. b. The Plan will identify physical and operational improvements to I-5 adjacent to the project area, relevant arterial roads and transit facilities (the Improvements), that are focused on regional impacts and specific transportation impacts from the project, and will also identify the fair share responsibilities of each Entity for the construction and financing for each Improvement. The Plan will include an implementation element that includes each Entity's responsibilities and commitment to mitigate the impacts created by all phases of the Proposed Project. c. The Plan will set forth a timeline and other agreed upon relevant criteria for implementation of each Improvement. d. The Plan will identify the total estimated design and construction cost for each Improvement and the responsibility of each Entity for both implementation and funding of such costs. e. The Plan will include the parameters for any agreed upon fair-share funding to be implemented, that would require private and/or public developers to contribute to the costs, in a manner that will comply with applicable law. f. In developing the Plan, the Entities shall also consider ways in which the Improvements can be coordinated with existing local and regional transportation and facilities financing plans and programs, in order to avoid duplication of effort and expenditure; however, the existence of such other plans and programs shall not relieve the Entities of their collective obligation to develop and implement the Plan as set forth in this mitigation measure. Nothing in the Plan shall be construed as relieving any Entity (or any other entity) from its independent responsibility (if any) for the implementation of any transportation improvement. g. The Port shall seek adoption of the Plan before the Port Board of Commissioners and the City shall seek adoption of the Plan before the City Council upon the completion of the multi-jurisdictional effort to develop the Plan. The Port and the City shall report, to their respective governing bodies regarding the progress made to develop the Plan within 6 months of the first meeting of the entities. Thereafter, the Port and the City shall report at least annually regarding the progress of the				

Number	Mitigation Measure	Responsible Party and Mitigation Timing	Monitoring Agency	Date of Completion	Date of Verification
	Plan, for a period of not less than 5 years, which may be extended at the request of the City Council and/or Board of Commissioners. h. The Plan shall also expressly include each Entity's pledge that it will cooperate with each other in implementing the Plan. i. Prior to issuance of certificates of occupancy or building permits for any development of individual projects within the Chula Vista Bayfront Master Plan, the Port and the City shall require project applicants to make their fair share contribution toward mitigation of cumulative freeway impacts within the City's portion of the I-5 South Corridor by participating in the City's Western Traffic Development Impact Fee or equivalent funding program. The failure or refusal of any Entity other than the Port or the City to cooperate in the implementation of this mitigation measure shall not constitute failure of the Port or the City to implement this mitigation measure; however, the Port and the City shall each use its best efforts to obtain the cooperation of all responsible Entities to fully participate, in order to achieve the goals of the mitigation measure. *Applies to Significant Impacts 4.2-12, 4.2-17, 4.2-18, 4.2-29, 4.2-30, 4.2-35 through 4.2-37, and 4.2-46 through 4.2-50.				
MM 4.2-10	Prior to issuance of certificates of occupancy for parcel H-3 or building permits for any development within the City, the Port and the City shall require project applicants to make their fair share contribution toward mitigation of intersection impacts at H Street and E Street within the City's jurisdiction by participating in the City's Western Traffic Development Impact Fee or equivalent funding program. The failure or refusal of any Entity other than the Port or the City to cooperate in the implementation of this mitigation measure shall not constitute failure of the Port or the City to implement this mitigation measure; however, the Port and the City shall each use its best efforts to obtain the cooperation of all responsible Entities to fully participate, in order to achieve the goals of mitigation measure. However, because implementation of the physical improvements needed to reduce the significant impacts to the affected intersections will require funding from other sources in addition to the WTDIF, such as local, state and federal funds, and such funding is not	Applicant(s) -Prior to First Certificate of Occupancy	Port and/or City		

Number	Mitigation Measure	Responsible Party and Mitigation Timing	Monitoring Agency	Date of Completion	Date of Verification
	certain or under the control of the Port or the City, the Port and the City cannot assure the necessary improvements will be constructed as needed or that they will be constructed within any known time schedule. Accordingly, the Proposed Project's impacts to the E Street and H Street intersections affected by an at-grade trolley crossing are considered significant and unmitigated. *Applies to Significant Impact 4.2-19.				
—	No feasible mitigation beyond redesign of the project as identified as a project alternative would reduce this impact to view quality. See *Chapter 5, Alternatives*, for a discussion of design options that would allow for an overall reduction in height and bulk of the proposed towers. *Applies to Significant Impacts 4.4-1and 4.4-2.	—	—		
MM 4.6-1	Prior to the commencement of any grading activities, the following measures shall be placed as notes on all grading plans and shall be implemented during grading of each phase of the project to minimize construction emissions. These measures shall be completed to the satisfaction of the Port and the Director of Planning and Building for the City of Chula Vista (These measures were derived, in part, from Table 11-4 of Appendix 11 of the SCAQMD CEQA Air Quality Handbook, and from SCAQMD Rule 403). See Mitigation Measure 4.6-1 in *Section 4.6, Air Quality* for a list of Best Available Control Measures for Specific Construction Activities. *Applies to Significant Impacts 4.6-1 and 4.6-6.	Developer -Prior to start of grading	Port and City		
MM 4.6-2	**A.** For development within the City's jurisdiction, applicants shall submit an AQIP with any Tentative Maps submitted to the City in accordance with Municipal Code Section 19.09.050B, and the applicant shall demonstrate that air quality control measures outlined in the AQIP pertaining to the design, construction, and operational phases of the project have been implemented to the satisfaction of the Director of Planning and Building for the City. This plan shall demonstrate "the best available design to reduce vehicle trips, maintain or improve traffic flow, and reduce vehicle miles traveled." There are two options to meet the AQIP requirement. The applicant shall evaluate the project in accordance with the computer modeling procedures outlined in the City's AQIP	Applicants -With submittal of Tentative Map	City		

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Number	Mitigation Measure	Responsible Party and Mitigation Timing	Monitoring Agency	Date of Completion	Date of Verification
	Guidelines, including any necessary site plan modifications. B. Prior to the issuance of building permits, the applicant shall demonstrate that the Proposed Project complies with Title 24 of the California Energy Efficient Standards for Residential and Nonresidential buildings. These requirements, along with the following measures, shall be incorporated into the final project design to the satisfaction of the Port and the Director of Planning and Building for the City: • Use of low NO_x emission water heaters • Installation of energy efficient and automated air conditioners when air conditioners are provided • Energy efficient parking area lights • Exterior windows shall be double paned. Although these measures will reduce air quality impacts of the Proposed Project, they would not bring area and operations emissions to a level below the standard established by the SCAQMD and used in this document by the City and Port. Therefore, air quality impacts remain significant and unmitigated. *Applies to Significant Impact 4.6-2.	Applicant -Prior to First Building Permit	Port and City		
MM 4.6-3	A. For development within the City's jurisdiction, the applicants shall submit an AQIP with any Tentative Maps submitted to the City in accordance with Municipal Code Section 19.09.050B, and the applicant shall demonstrate that air quality control measures outlined in the AQIP pertaining to the design, construction, and operational phases of the project have been implemented to the satisfaction of the Director of Planning and Building for the City of Chula Vista. This plan shall demonstrate "the best available design to reduce vehicle trips, maintain or improve traffic flow, and reduce vehicle miles traveled." There are two options to meet the AQIP requirement. The applicant shall evaluate the project in accordance with the computer modeling procedures outlined in the City's AQIP Guidelines, including any necessary site plan modifications. B. Prior to the issuance of building permits, the applicant shall demonstrate that the Proposed Project complies with Title 24 of the California Energy Efficient Standards for Residential and Nonresidential buildings. These requirements along with the following	Applicants -With submittal of Tentative Map Applicant -Prior to First Building Permit	City Port and City		

Number	Mitigation Measure	Responsible Party and Mitigation Timing	Monitoring Agency	Date of Completion	Date of Verification
	are provided • Energy efficient parking area lights • Exterior windows shall be double paned. Although these measures would reduce air quality impacts of the Proposed Project, they would not bring area and operations emissions to a level below the standard established by the SCAQMD and used in this document by the City and Port. Therefore, air quality impacts remain significant and unmitigated. *Applies to Significant Impact 4.6-4.				
MM 4.6-5	**A.** For residential, as well as mixed-use/commercial development within the City's jurisdiction, the applicants shall submit an AQIP with any Tentative Maps submitted to the City in accordance with Municipal Code Section 19.09.050B, and the applicant shall demonstrate that air quality control measures outlined in the AQIP pertaining to the design, construction, and operational phases of the project have been implemented to the satisfaction of the Director of Planning and Building for the City of Chula Vista. This plan shall demonstrate "the best available design to reduce vehicle trips, maintain or improve traffic flow, and reduce vehicle miles traveled." There are two options to meet the AQIP requirement. The applicant shall evaluate the project in accordance with the computer modeling procedures contained in the City's AQIP Guidelines, including any necessary site plan modifications. **B.** Prior to the issuance of buildings permits, the applicant shall demonstrate that the Proposed Project shall comply with Title 24 of the California Energy Efficient Standards for Residential and Nonresidential buildings. These requirements along with the following measures shall be incorporated into the final project design to the satisfaction of the Port and the Director of Planning and Building for the City: • Use of low-NOx emission water heaters • Installation of energy efficient and automated air conditioners when air conditioners are provided • Energy efficient parking area lights • Exterior windows shall be double paned.	Applicants -With submittal of Tentative Map Applicant -Prior to First Building Permit	City Port and City		

Number	Mitigation Measure	Responsible Party and Mitigation Timing	Monitoring Agency	Date of Completion	Date of Verification
	measures shall be incorporated into the final project design to the satisfaction of the Port and the Director of Planning and Building for the City: • Use of low NO_x emission water heaters • Installation of energy efficient and automated air conditioners when air conditioners are provided • Energy efficient parking area lights • Exterior windows shall be double paned. Although these measures would reduce air quality impacts of the Proposed Project, they would not bring area and operations emissions to a level below the standard established by the SCAQMD and used in this document by the City and Port. Therefore, air quality impacts remain significant and unmitigated. *Applies to Significant Impact 4.6-3.				
MM 4.6-4	**A.** For residential, as well as mixed-use/commercial development within the City's jurisdiction, the applicants shall submit an AQIP with any Tentative Maps submitted to the City in accordance with Municipal Code Section 19.09.050B, and the applicant shall demonstrate that air quality control measures outlined in the AQIP pertaining to the design, construction, and operational phases of the project have been implemented to the satisfaction of the Director of Planning and Building for the City of Chula Vista. This plan shall demonstrate "the best available design to reduce vehicle trips, maintain or improve traffic flow, and reduce vehicle miles traveled." There are two options to meet the AQIP requirement. The applicant shall evaluate the project in accordance with the computer modeling procedures outlined in the City's AQIP Guidelines, including any necessary site plan modifications. **B.** Prior to the issuance of buildings permits, the applicant shall demonstrate that the Proposed Project complies with Title 24 of the California Energy Efficient Standards for Residential and Nonresidential buildings. These requirements along with the following measures shall be incorporated into the final project design to the satisfaction of the Port and the Director of Planning and Building for the City: • Use of low-NOx emission water heaters • Installation of energy efficient and automated air conditioners when air conditioners	Applicants -With submittal of Tentative Map Applicant -Prior to First Building Permit	City Port and City		

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Number	Mitigation Measure	Responsible Party and Mitigation Timing	Monitoring Agency	Date of Completion	Date of Verification
	Although these measures would reduce air quality impacts of the Proposed Project, they would not bring area and operations emissions to a level below the standard established by the SCAQMD and used in this document by the City and Port. Therefore, air quality impacts remain significant and unmitigated. *Applies to Significant Impact 4.6-5.				
MM 4.13.5-1	Prior to the approval of a building permit for any residential project, the applicant shall pay a PFDIF or equivalent fee in an amount calculated according to the City's PFDIF program in effect at the time of permit issuance. *Applies to Significant Impacts 4.13.5-1 and 4.13.5-2.	Applicant -Prior to Building Permit Approval	City and applicable school district		
Cumulative Impacts					
MM 6.5-1	The Port and the City shall participate in a multi-jurisdictional effort conducted by Caltrans and SANDAG to assist in developing a detailed I-5 corridor-level study (hereinafter, the "Plan") that will identify transportation improvements along with funding, including federal, state, regional, and local funding sources, and phasing that would reduce congestion management with Caltrans standards on the I-5 South corridor from the SR-54 interchange to the Otay River (the "I-5 South Corridor"). Local funding sources identified in the Plan shall include fair-share contributions related to private and/or public development based on nexus as well as other mechanisms. The Plan required by this mitigation shall include the following: a. The responsible entities (the Entities) included in this effort will include, but may not be limited to, the City, other cities along I-5, the Port, SANDAG, and Caltrans. Other entities will be included upon the concurrence of the foregoing Entities. b. The Plan will identify physical and operational improvements to I-5 adjacent to the project area, relevant arterial roads, and transit facilities (the Improvements) that are focused on regional impacts and specific transportation impacts from the project and will also identify the fair-share responsibilities of each Entity for the construction and financing for each Improvement. The Plan will include an implementation element that includes each Entity's responsibilities and commitment to mitigate the impacts created by all phases of the Proposed Project. c. The Plan will set forth a timeline and other agreed upon relevant criteria for implementation of each Improvement.	Port, City, CALTRANS, and SANDAG	Port and City in coordination with other cities along I-5, SANDAG, and Caltrans.		

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Number	Mitigation Measure	Responsible Party and Mitigation Timing	Monitoring Agency	Date of Completion	Date of Verification
	d. The Plan will identify the total estimated design and construction cost for each Improvement and the responsibility of each Entity for both implementation and funding of such costs. e. The Plan will include the parameters for any agreed upon fair-share funding to be implemented that would require private and/or public developers to contribute to the costs, in a manner that will comply with applicable law. f. In developing the Plan, the Entities shall also consider ways in which the Improvements can be coordinated with the financing plans and programs of existing local and regional transportation and facilities, in order to avoid duplication of effort and expenditure; however, the existence of such other plans and programs shall not relieve the Entities of their collective obligation to develop and implement the Plan as set forth in this mitigation measure. Nothing in the Plan shall be construed as relieving any Entity (or any other entity) from its independent responsibility (if any) for the implementation of any transportation improvement. g. The Port shall seek adoption of the Plan before the Port Board of Commissioners and the City shall seek adoption of the Plan before the City Council upon the completion of the multi-jurisdictional effort to develop the Plan. The Port and the City shall report to their respective governing bodies regarding the progress made to develop the Plan within 6 months of the first meeting of the entities. Thereafter, the Port and the City shall report at least annually regarding the progress of the Plan, for a period of not less than 5 years, which may be extended at the request of the City Council and/or Board of Commissioners. h. The Plan shall also expressly include each Entity's pledge that it will cooperate with each other in implementing the Plan. i. Prior to issuance of certificates of occupancy or building permits for any development of individual projects within the Chula Vista Bayfront Master Plan, the Port and the City shall require project applicants to make their fair-share contribution toward mitigation of cumulative freeway impacts within the City's portion of the I-5 South Corridor by participating in the City's Western Traffic Development Impact Fee or equivalent funding program. The failure or refusal of any Entity other than the Port or the City to cooperate in the implementation of this mitigation measure shall not constitute failure of the Port or the City to implement this mitigation measure; however, the Port and the City shall each use				

Number	Mitigation Measure	Responsible Party and Mitigation Timing	Monitoring Agency	Date of Completion	Date of Verification
	its best efforts to obtain the cooperation of all responsible Entities to fully participate, in order to achieve the goals of this mitigation measure. *Applies to Significant Impacts 6.5-1, 6.5-2, 6.5-3, 6.5-4, 6.5-5, 6.5-6, 6.5-7, 6.5-8, 6.5-9, 6.5-10, 6.5-14, 6.5-15, 6.5-21, 6.5-22, 6.5-23, 6.5-24 and 6.5-25, which would remain significant after implementation.				
MM 6.5-2	In assessing the impact of the project on the Phase III network, it was determined that H Street between Street A and the I-5 Ramps was already widened in Phase II to accommodate growth in traffic, and it would be difficult to widen more, due to right-of-way constraints. To accommodate traffic from the project and to provide another route to I-5, the Port shall extend E Street from the RCC Driveway to west of Bay Boulevard. The segment shall be built as a two-lane Class III Collector prior to the issuance of either a building permit or final map for a Phase II project. This Mitigation would reduce Significant Impacts 6.5-11 and 6.5-12 to below a level of significance. *Applies to Significant Impacts 6.5-11 and 6.5-12.	Port -Prior to First Building Permit or Final Map for Phase II Project	City Engineer		
MM 6.5-3	Prior to issuance of a certificate of occupancy for any Phase III project, the Port shall construct an exclusive westbound right-turn lane at the intersection of J Street and I-5 NB Ramps. The lane shall be constructed to the satisfaction of the City Engineer. This mitigation would reduce Significant Impact 6.5-13 to below a level of significance. *Applies to Significant Impact 6.5-13.	Port -Prior to First Certificate of Occupancy for any Phase III Project	City Engineer		
MM 6.5-4	Prior to issuance of a certificate of occupancy for any Phase III project, the Port shall widen E street between the RCC Driveway and Bay Boulevard to a two-lane Class II Collector. The additional roadway capacity would facilitate the flow of project traffic. This mitigation would reduce Significant Impact 6.5-16 to below a level of significance. *Applies to Significant Impact 6.5-16.	Port -Prior to First Certificate of Occupancy for any Phase III Project	City Engineer		
MM 6.5-4	Prior to issuance of a certificate of occupancy for any Phase III project, the Port shall widen Street A between H Street and Street C to a four-lane Class I Collector. The additional roadway capacity would facilitate the flow of project traffic. This mitigation would reduce Significant Impact 6.5-17 to below a level of significance.	Port -Prior to First Certificate of Occupancy for any Phase III Project	City Engineer		

Number	Mitigation Measure	Responsible Party and Mitigation Timing	Monitoring Agency	Date of Completion	Date of Verification
	*Applies to Significant Impact 6.5-17.				
MM 6.5-6	Prior to issuance of a certificate of occupancy for any Phase III project, the Port shall construct southbound left- and right-turn lanes at the intersection of E Street and Bay Boulevard. The lanes shall be constructed to the satisfaction of the City Engineer. This mitigation would reduce Significant Impact 6.5-18 to below a level of significance. *Applies to Significant Impact 6.5-18..	Port -Prior to First Certificate of Occupancy for any Phase III Project	City Engineer		
MM 6.5-7	Prior to issuance of a certificate of occupancy for any Phase III project, the Port shall construct an exclusive eastbound right-turn lane at the intersection of J Street and Bay Boulevard. The lane shall be constructed to the satisfaction of the City Engineer. This mitigation would reduce Significant Impact 6.5-19 to below a level of significance. *Applies to Significant Impact 6.5-19..	Port -Prior to First Certificate of Occupancy for any Phase III Project	City Engineer		
MM 6.5-8	Prior to issuance of a certificate of occupancy for any Phase III project, the Port shall construct an exclusive westbound right-turn lane at the intersection of J Street and I-5 NB Ramps. The lane shall be constructed to the satisfaction of the City Engineer. This mitigation would reduce Significant Impact 6.5-20 to below a level of significance. *Applies to Significant Impact 6.5-20.	Port -Prior to First Certificate of Occupancy for any Phase III Project	City Engineer		
MM 6.5-9	Prior to the issuance of certificates of occupancy for any development in Phase IV of the development, the Port shall construct an eastbound and westbound through-lane along H Street (as part of roadway segment mitigation) and a westbound right-turn lane at the intersection of H Street and Woodlawn Avenue. The additional lanes shall be constructed to the satisfaction of the City Engineer. This mitigation would reduce Significant Impact 6.5-26 to below a level of significance. *Applies to Significant Impact 6.5-26.	Port -Prior to First Certificate of Occupancy	City Engineer		
MM 6.5-10	Prior to the issuance of certificates of occupancy for any development in Phase IV of the development, the Port shall construct a westbound through- and right-turn lane along H Street at the intersection of H Street and Broadway. The lane shall be constructed to the satisfaction of the City Engineer. With mitigation, this intersection would still operate at LOS E during the PM peak hour. This is consistent with the result from the Chula Vista Urban Core traffic study, which concluded that no additional mitigation is desired at this	Port -Prior to First Certificate of Occupancy for any development in Phase IV	City Engineer		

Number	Mitigation Measure	Responsible Party and Mitigation Timing	Monitoring Agency	Date of Completion	Date of Verification
	location. This mitigation would reduce Significant Impact 6.5-27 to below a level of significance. *Applies to Significant Impact 6.5-27.				
MM 6.5-11	Prior to the issuance of certificates of occupancy for any development in Phase IV of the development, the Port shall construct a dual eastbound left-turn lane along J Street at the intersection of J Street and I-5 NB Ramps. The additional lanes shall be constructed to the satisfaction of the City Engineer. This mitigation would reduce Significant Impact 6.5-28 to below a level of significance. *Applies to Significant Impact 6.5-28.	Port -Prior to First Certificate of Occupancy for any development in Phase IV	City Engineer		
MM 6.6-1	**A. View Protection:** As a condition for issuance of Coastal Development Permits, buildings fronting on H Street shall be designed to step away from the street. More specifically, design plans shall protect open views down the H Street Corridor by ensuring that an approximate 100-foot ROW width (curb–curb, building setbacks and pedestrian plaza/walkway zone) remains clear of buildings, structures, or major landscaping. Visual elements above six feet in height shall be prohibited in this zone if the feature would reduce visibility by more than 10 percent. Placement of trees should take into account potential view blockage. This mitigation should not be interpreted to not allow tree masses; however, trees should be spaced in order to ensure "windows" through the landscaping. Trees should also be considered to help frame the views and they should be pruned up to increase the views from pedestrians and vehicles, underneath the tree canopy. In order to reduce the potential for buildings to encroach into view corridors, and to address the scale and massing impact, buildings shall step back at appropriate intervals or be angled to open up a broader view corridor at the groundplane to the extent feasible. All plans shall be subject to review and approval by the Port. All future development proposals shall conform to Port design guidelines and standards to the satisfaction of the Port. **B. Height and Bulk:** Prior to issuance of Coastal Development Permits for projects within the Port's jurisdiction, the project developer shall ensure that design plans for any large scale projects (greater than two stories in height) shall incorporate standard design techniques such as articulated facades, distributed building massing, horizontal banding, stepping back of buildings, and varied color schemes to separate the building base from	Project Developer -Prior to First Coastal Development Permit Project Developer -Prior to First Coastal Development	Port Port		

Number	Mitigation Measure	Responsible Party and Mitigation Timing	Monitoring Agency	Date of Completion	Date of Verification
	its upper elevation and color changes such that vertical elements are interrupted and smaller scale massing implemented. These plans shall be implemented for large project components to diminish imposing building edges, monotonous facades and straight-edge building rooflines and profiles. This shall be done to the satisfaction of the Port.	Permit			
	C. Height and Bulk: Prior to design review approval for properties within the City's jurisdiction, the project developer shall ensure that design plans for any large scale projects (greater than two stories in height) shall incorporate standard design techniques such as articulated facades, distributed building massing, horizontal banding, and varied color schemes to separate the building base from its upper elevation and color changes such that vertical elements are interrupted and smaller scale massing implemented. These plans shall be implemented for the large project components to diminish imposing building edges, monotonous facades and straight-edge building rooflines and profiles. This shall be done to the satisfaction of the City of Chula Vista Planning Director.	Project Developer -Prior to Design Review Approval	City		
	D. Landscaping: Prior to final approval of Phase I infrastructure design plans, the Port and City shall collectively develop a master landscaping plan for the project's public components and improvements. The plan shall provide sufficient detail to ensure conformance to streetscape design guidelines and that future developers/tenants, as applicable, provide screening of parking areas. Streetscape landscaping shall be designed to enhance the visitor experience for both pedestrians and those in vehicles. Specifically, detailed landscaping plans shall be developed to enhance Marina Parkway, a designated scenic roadway and shall provide, where appropriate, screening of existing industrial uses and parking areas until such time as these facilities are redeveloped. Street landscaping design shall be coordinated with a qualified biologist or landscape architect to ensure that proposed trees and other landscaping are appropriate for the given location. For instance, vegetation planted adjacent to open water/shoreline areas must not provide raptor perches. Landscaping shall be drought tolerant or low water use, and invasive plant species shall be prohibited.	Port and City -Prior to Final Approval of Phase I Design	Port in Coordination with qualified Biologist or Landscape Architect		
	E. Landscaping: Prior to approval of a tentative map or site development plan for future	Project Developer	City		

Number	Mitigation Measure	Responsible Party and Mitigation Timing	Monitoring Agency	Date of Completion	Date of Verification
	residential development, the project developer shall submit a landscaping design plan for on-site landscaping improvements that is in conformance to design guidelines and standards established by the City of Chula Vista. The plan shall be implemented as a condition of project approval. **F. Gateway Plan:** Concurrent with the preparation of Phase I infrastructure design plans for E and H Street, a Gateway plan shall be prepared for E and H Streets. Prior to issuance of occupancy for any projects within the Port's jurisdiction in Phase I, the E and H Street Gateway plan shall be approved by the Port and City's Directors of Planning and Building. The E and H Street Gateway plan shall be coordinated with the Gateway plan for J Street. **G. Gateway Plan:** Concurrent with development of H-13 and H-14, the applicant shall submit a Gateway plan for J Street for City Design Review consideration. Prior to issuance of any building permits, the J Street Gateway plan shall be approved by the Director of Planning and Building in coordination with the Port's Director of Planning. The J Street Gateway plan shall be coordinated with the Gateway plan for E and H Streets. *Applies to Significant Impact 6.6-1, which would remain significant after mitigation	-Prior to TM/SDP Approval Applicant -Prior to Occupancy Applicant -Prior to First Building Permit	Port and City's Director of Planning and Building City's Director of Planning and Building in coordination with the Port's Director of Planning		
MM 6.8-1	Prior to the issuance of any grading permit, the following measures shall be placed as notes on all grading plans, and shall be implemented during grading of each phase of the project to minimize construction emissions. These measures shall be completed to the satisfaction of the Port and the Director of Planning and Building for the City of Chula Vista (these measures were derived, in part, from Table 11-4 of Appendix 11 of the SCAQMD CEQA Air Quality Handbook (SCAQMD 1999)). See Mitigation Measure 6.8-1 in *Chapter 6, Cumulative Impacts,* for a list of Best Available Control Measures for Specific Construction Activities. *Applies to Significant Impact 6.8-1, which would remain significant and unmitigated after mitigation	Developer -Prior to start of grading	Port and City		

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Number	Mitigation Measure	Responsible Party and Mitigation Timing	Monitoring Agency	Date of Completion	Date of Verification
MM 6.8-2	**A.** For residential as well as mixed-use/commercial development within the City's jurisdiction, the applicants shall submit an Air Quality Improvement Plan (AQIP) with any Tentative Maps submitted to the City in accordance with Municipal Code Section 19.09.050B, and the applicant shall demonstrate that air quality control measures outlined in the AQIP pertaining to the design, construction, and operational phases of the project have been implemented to the satisfaction of the Director of Planning and Building for the City of Chula Vista. This plan shall demonstrate "the best available design to reduce vehicle trips, maintain or improve traffic flow, and reduce vehicle miles traveled. There are two options to meet the AQIP requirement. The applicant shall evaluate the project in accordance with the computer modeling procedures outlined in the City's AQIP guidelines, including any necessary site plan modifications. **B.** Prior to the issuance of building permits, the applicant shall demonstrate that the Proposed Project shall comply with Title 24 of the California Energy Efficient Standards for Residential and Nonresidential buildings. These requirements, along with the following measures, shall be incorporated into the final project design to the satisfaction of the Port and the Director of Planning and Building for the City: • Use of low-NO_x emission water heaters • Installation of energy efficient and automated air conditioners when air conditioners are provided • Energy efficient parking area lights • Exterior windows shall be doublepaned. Although these measures would reduce the air quality impacts of the Proposed Project, they would not bring area and operations emissions to a level below the standard established by the SCAQMD and used in this document by the City and Port. Therefore, cumulative air quality impacts remain **significant and unmitigated.** *Applies to Significant Impact 6.8-2, which would remain significant and unmitigated.	Applicants -With submittal of Tentative Map Applicant -Prior to First Building Permit	City Port and City Director of Planning and Building		
MM 6.8-3	Development of program-level components of the Chula Vista Bayfront Master Plan (Phases I through IV) shall implement measures to reduce GHG emissions. Specific measures may include but are not limited to the following:	Applicants -During development of Program level			

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Number	Mitigation Measure	Responsible Party and Mitigation Timing	Monitoring Agency	Date of Completion	Date of Verification
	Energy Efficiency • Design buildings to be energy efficient. Site buildings to take advantage of shade, prevailing winds, landscaping, and sun screens to reduce energy use. • Install efficient lighting and lighting control systems. Use daylight as an integral part of lighting systems in buildings. • Install light colored "cool" roofs, cool pavements, and strategically placed shade trees. • Provide information on energy management services for large energy users. • Install energy efficient heating and cooling systems, appliances and equipment, and control systems. • Install light emitting diodes (LEDs) for traffic, street, and other outdoor lighting. • Limit the hours of operation of outdoor lighting. • Use solar heating, automatic covers, and efficient pumps and motors for pools and spas. • Provide education on energy efficiency. • Renewable Energy • Install solar and wind power systems, solar and tankless hot water heaters, and energy-efficient heating ventilation and air conditioning. Educate consumers about existing incentives. • Install solar panels on carports and over parking areas. • Use combined heat and power in appropriate applications. • Water Conservation and Efficiency • Create water-efficient landscapes. • Install water-efficient irrigation systems and devices, such as soil moisture-based irrigation controls. • Use reclaimed water for landscape irrigation in new developments and on public property where appropriate. Install the infrastructure to deliver and use reclaimed water. • Design buildings to be water-efficient. Install water-efficient fixtures and appliances. • Use gray water. (Gray water is untreated household wastewater from bathtubs, showers, bathroom wash basins, and water from clothes washing machines.) For example, install dual plumbing in all new development, allowing gray water to be	components of the CVBMP			

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Number	Mitigation Measure	Responsible Party and Mitigation Timing	Monitoring Agency	Date of Completion	Date of Verification
	used for landscape irrigation. • Restrict watering methods (e.g., prohibit systems that apply water to non-vegetated surfaces) and control runoff. • Restrict the use of water for cleaning outdoor surfaces and vehicles. • Implement low-impact development practices that maintain the existing hydrologic character of the site to manage stormwater and protect the environment. (Retaining stormwater runoff on site can drastically reduce the need for energy-intensive imported water at the site.) • Devise a comprehensive water conservation strategy appropriate for the project and location. The strategy may include many of the specific items listed above, plus other innovative measures that are appropriate to the specific project. • Provide education about water conservation and available programs and incentives. • Solid Waste Measures • Reuse and recycle construction and demolition waste (including but not limited to soil, vegetation, concrete, lumber, metal, and cardboard). • Provide interior and exterior storage areas for recyclables and green waste and adequate recycling containers located in public areas. • Recover by-product methane to generate electricity. • Provide education and publicity about reducing waste and available recycling services. • Transportation and Motor Vehicles • Limit idling time for commercial vehicles, including delivery and construction vehicles. • Use low- or zero-emission vehicles, including construction vehicles. • Promote ride sharing programs, for example, by designating a certain percentage of parking spaces for ride sharing vehicles, designating adequate passenger loading and unloading and waiting areas for ride sharing vehicles, and providing a web site or message board for coordinating rides. • Provide the necessary facilities and infrastructure to encourage the use of low- or zero-emission vehicles (e.g., electric vehicle charging facilities and conveniently located alternative fueling). • Provide public transit incentives, such as free or low-cost monthly transit passes. • For commercial projects, provide adequate bicycle parking near building entrances to				

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Number	Mitigation Measure	Responsible Party and Mitigation Timing	Monitoring Agency	Date of Completion	Date of Verification
	promote cyclist safety, security, and convenience. For large employers, provide facilities that encourage bicycle commuting, including (for example) locked bicycle storage or covered or indoor bicycle parking. • Institute a telecommute work program. Provide information, training, and incentives to encourage participation. Provide incentives for equipment purchases to allow high-quality teleconferences. • Provide information on all options for individuals and businesses to reduce transportation-related emissions. Provide education and information about public transportation. • The measures identified above and in Mitigation Measures 4.16-2, will substantially reduce GHG emissions, achieving reductions of at least 20 percent below "business as usual." Furthermore, better technology is rapidly developing and may provide further measures in the near future that will avoid conflict with the goals or strategies of AB 32 or related Executive Orders. Once projects are defined within the program phases, further environmental review will be required, at which time the most current measures will be identified and required to be consistent with this mitigation measure and any additional regulations in effect at the time. Implementation of Mitigation Measure 6.8-3, therefore, will avoid a contribution to a cumulatively significant impact and will result in a less than significant impact to global climate change. *Applies to Significant Impact 6.8-3				
MM 6.11-1	**A.** Prior to construction of any program-level components of the project that impact eelgrass, a pre-construction eelgrass survey shall be conducted by a qualified biologist to confirm the exact extent of the impact at the time of pile driving operations. The pre-construction survey must be conducted during the period of March through October and would be valid for a period of no more than 60 days, with the exception that surveys conducted in August through October would be valid until the following March 1. **B.** Prior to the construction of any program-level components of the project that impact eelgrass, the Port shall establish and implement a plan to create new eelgrass habitat at a ratio of 1.2:1. The Port shall create new eelgrass habitat by removing the existing eelgrass currently located in the impacted areas and transplanting it at the new location. Identification and planting of the restoration site shall be completed to the satisfaction of the Port prior to commencement of construction.	Port -Prior to construction of any program-level components that would impact eelgrass Port -Prior to construction of any program-level	Port in coordination with a qualified biologist Port in coordination with a		

Number	Mitigation Measure	Responsible Party and Mitigation Timing	Monitoring Agency	Date of Completion	Date of Verification
	C. Subsequent to construction of any program-level components of the project that impact eelgrass, a post-construction eelgrass survey shall be conducted by a qualified biologist. The post-construction survey shall be conducted within 30 days of the cessation of construction activities to confirm the exact amount of eelgrass affected. The difference between the pre-construction and post-construction eelgrass surveys shall determine the amount of required additional mitigation. In addition, the Port shall: • Conduct transplant reports following construction (Initial Report). It would take 1 to 2 years for all of the fine sediment to dissipate in the water column for the movement of such a large amount of sediment. Based on this, eelgrass transplant success would not be possible for 1 to 2 years. Mitigation would be required for additional time delays. • Conduct monitoring reports at 6, 12, 24, 36, 48, and 60 months post-transplant. Specific milestones and criteria for success are directed in the SCEMP along with guidelines for remedial actions if the success criteria are not met, which would require (based on the absence of other mitigating environmental considerations) a Supplementary Transplant Area to be constructed and monitored for an additional 5 years. • Initiate any potential additional mitigation within 135 days of project inception; projects requiring more than 135 days to be completed may result in further additional mitigation. D. If an appropriate mitigation site is not available at the time of construction of the program components which would impact eelgrass, mitigation habitat shall be created through fill or appropriate habitat in the Bay. Any delays to eelgrass planting after the impact occurs would require additional mitigation of 7 percent per month of additional eelgrass. Implementation of Mitigation Measure 6.11-1 would reduce significant cumulative impacts to eelgrass to below significance. *Applies to Significant Impact 6.11-1.	components that would impact eelgrass Port in coordination with a qualified biologist eelgrass	qualified biologist Port		

Number	Mitigation Measure	Responsible Party and Mitigation Timing	Monitoring Agency	Date of Completion	Date of Verification
MM 6.15.2-1	Prior to the approval of a building permit for any development in all phases of the Proposed Project, the City shall verify that it has adequate sewer capacity to serve the proposed development. In the event the City does not have adequate sewer capacity to serve the proposed development, no building permit shall be approved for the proposed development until the City has acquired adequate sewer capacity to serve the proposed development. In accordance with Section 15130(a)(3) of the State CEQA Guidelines, a significant cumulative impact would be rendered less than cumulatively considerable, and thus is not significant when the project is required to implement or fund its fair share of a mitigation measure or measures designed to alleviate the cumulative impact. The requirement for the contribution to provide a fair-share contribution to the provision of the needed sewer service mitigates the cumulative impact to below significance. *Applies to Significant Impact 6.15.2-1	City -Verify adequate sewer capacity exists prior to Approval of Building Permit (if City acquires additional sewer capacity for project, applicant to pay fair share of acquisition fee)	City		
MM 6.15.6-1	Prior to the issuance of a building permit, the applicant shall pay all required school mitigation fees. Payment of statutory school fees would ensure that project impacts to school services remain below a level of significance. As indicated above, the fees set forth in Government Code Section 65996 constitute the exclusive means of both "considering" and "mitigating" school facilities impacts of projects (Government Code Section 65996(a)). Once the statutory school mitigation fee (sometimes referred to as a "developer fee") is paid, the impact would be deemed mitigated as a matter of law. Therefore, this mitigation measure would reduce the cumulative impact to schools to a level less than significant. *Applies to Significant Impact 6.15.6-1.	Applicant -Prior to Building Permit Approval	City		
MM 6.15.7-1	For Phase I residential project, prior to the approval of a building permit, the applicant(s) shall pay a Public Facilities Development Impact Fee (PFDIF) or other equivalent fee in an amount calculated according to the City's PFDIF program in effect at the time of permit issuance. Implementation of Mitigation Measure 6.15.7-1 would provide funds that can be used to construct new facilities, as required, to meet the need resulting from project development. Due to existing library deficiency and inability to demonstrate that fees would fully	Applicant(s) -Prior to Building Permit Approval	City		

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Number	Mitigation Measure	Responsible Party and Mitigation Timing	Monitoring Agency	Date of Completion	Date of Verification
	mitigate, implementation of the measure would not reduce the significant impact to library services to a level below significance. *Applies to Significant Impact 6.15.7-1				
MM 6.17-1	Encourage compact development featuring a mix of uses that locate residential areas within reasonable walking distance to jobs, services, and transit. • Promote and facilitate transit system improvements in order to increase transit use and reduce dependency on the automobile. • Encourage innovative energy conservation practices and air quality improvements in new development and redevelopment projects consistent with the City's AQIP Guidelines or their equivalent, pursuant to the City's Growth Management Program. Despite the fact that the Project would result in adoption of these conservation measures, the cumulative impact relative to energy supply would remain significant and unmitigated because of the of the uncertainty of the future supply of energy, which is within the responsibility and control of SDG&E and other entities responsible for arranging electric energy supplies, not the Port or the City. *Applies to Significant Impact 6.17-1.	Applicant	Port or City		

Exhibit 1

Wildlife Habitat Areas

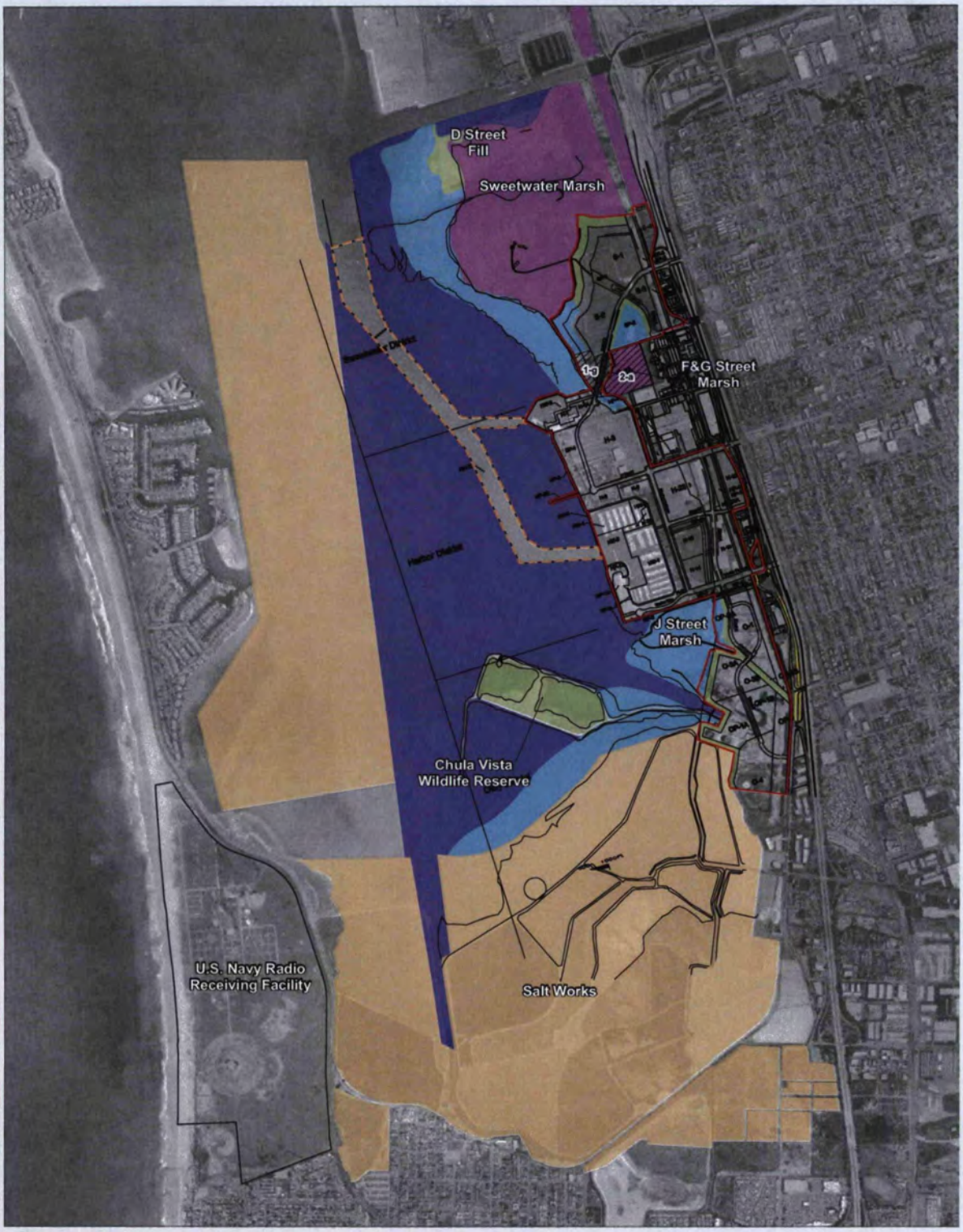

Exhibit 1 to the Mitigation Monitoring and Reporting Program for the Chula Vista Bayfront Master Plan Wildlife Habitat Areas

*National Wildlife Refuge lands are included in the definition of Wildlife Habitat Areas for the sole purpose of addressing adjacency impacts and not for the purpose of imposing affirmative resource management obligations with respect to the areas within the National Wildlife Refuge lands.

Exhibit 2

Buffer Areas

Exhibit 2 to the Mitigation Monitoring and Reporting Program for the Chula Vista Bayfront Master Plan
Buffer Areas (Defined by Chapter 3, Project Description, of the Final EIR)

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Exhibit 3

Energy Demand Reduction

EXHIBIT 3 to the Mitigation Monitoring and Reporting Program for the Chula Vista Bayfront Master Plan

Exhibit 3 outlines the metholodogies for determing that the goals of the Energy Section are met. The Sample Worksheets are for illustration purposes, to provide a format which may be used both by Developments and by the City of Chula Vista's Building Department. Note that the Energy Section outlines requirements and approaches for projects which will be subject to future codes, regulations, tariffs, and technologies, all of which are subject to change. When clarifications are needed, they will be provided by the City of Chula Vista.

Baseline. The term "Baseline" refers to the amount of energy against which the energy reduction will be measured.

SAMPLE Worksheets. Sample worksheets are provided as suggested approaches. Actual worksheets for calculating the energy requirements should be coordinated with the City of Chula Vista Building Department.

Title 24 Path. Title 24 language refers to the "Standard Budget" and "Proposed Budget." The Whole Building Performance Method, which generates the Standard and Proposed Energy Budgets, is specifically for energy uses within a conditioned building, and does not include lighting which is in Interior Unconditioned Spaces or lighting which is outside. However, for the purposes of the Energy Section, this lighting energy will be added to the energy budgets for the conditioned building, and the combined energy uses will become the Baseline for the "Title 24 Path." Each of the various energy uses will be converted into Site kBtu, except for the final 5% energy reduction waiver allowed for Ongoing Measurement and Verification.

LEED Path. LEED language refers to the "Baseline Design" and "Proposed Design." The LEED Path Baseline is likely to be different and higher than the Title 24 Path Baseline because LEED counts all of the energy uses within the site boundary, some of which are not counted by Title 24. However, LEED is also likely to be better and more comprehensive in calculating overall energy performance features, such as district thermal plants, combined heat and power, natural ventilation, efficiencies in process loads, aggregating multiple buildings, and the benefits of renewable energy. Each of the various energy uses will be converted into dollars ($), except for the final 5% energy reduction waiver allowed for Ongoing Measurement and Verification.

If the LEED Path is chosen, the Development may be subject to an additional fee to the City of Chula Vista for a 3rd party plan check by an experienced LEED reviewer acceptable to the City. Recognizing that LEED Templates may not be complete at the time of the initial Building Department submittals, draft Templates may be used, at the discretion of the reviewer.

Natural Ventilation. When using Natural Ventilation (NV) to qualify as an energy reduction feature, the Development may qualify for a waiver of up to 10% if at least 75% of the area that would normally be cooled relies solely on natural ventilation strategies to help maintain comfortable temperatures. Pro-rations are possible.

City of Chula Vista Sponsored Energy Efficiency Program. Refer to the appropriate City ordinances for details on this program.

Measurement and Verification. Each Development shall develop and implement an ongoing Measurement and Verification (M&V) Plan consistent with the International Performance Measurement and Verification Protocol (IPMVP) Volume III, Concepts and Options for Determining Energy Savings in New Construction, April 2003. The Development may choose either Option B or Option D. If the LEED Path is chosen, the M&V Plan should be consistent with Credit EAc5, except that LEED only requires one year of implementation, and the Energy Section of this Agreement requires M&V to be ongoing.

Demand Response Tariffs. Developments which enroll in SDG&E Demand Response rate tariff(s) which are designed to reduce the load on the electric grid during critical times may be awarded up to a 5% waiver.

EXHIBIT 3

SAMPLE Worksheet A: Title 24 Path

Name: Example Development

Description[1]	Source of Info (Attachments)	Input Standard	Input Proposed	Typical Units of Measure	Convert to Site kbtu	Standard = Baseline	Proposed	Units	Minimum % Reduction	Actual % Reduction	
15.2.1 MINIMUM EFFICIENCY											
Title 24 Whole Building Performance	T24 UTIL-1, Part 1			Source TDV kbtu/sf-yr					15%		
15.2.2 CALCULATE BASELINE AND REDUCTIONS											
A. Energy Uses											
T24 Electricity	T24 UTIL-1, Part 2			Site KWH/year	3.413	-	-	kBtu			
T24 Gas	T24 UTIL-1, Part 2			Site Therms/year	100.000	-	-	kBtu			
T24 Lighting Outside and Uncond	Worksheet A-LTG	-	-	Site KWH/year	3.413	-	-	kBtu			
A. Summary of Efficiency of End Uses						-	-	kBtu			
B. Renewable Energy Contributions											
PV: within Development	CSI calculation or PV-Watts[2]	n/a		Site KWH output/year	3.413	n/a	-	kBtu			
PV: Credited from Project		n/a		Site KWH output/year	3.413	n/a	-	kBtu			
Solar Thermal: within Development	F-Chart or equal	n/a		Site kbtu offset/year	1.000	n/a	-	kBtu			
Other	as appropriate	n/a		as appropriate		n/a					
B. Combined Renewable Reductions											
C. Natural Ventilation	Worksheet C						0% to 10%				
D. Chula Vista Program Savings	Confirm with Program Administrator										
Verified Electricity Savings		n/a		Site KWH	3.413		-	kBtu			
Verified Gas Savings		n/a		Site Therms	100.000		-	kBtu			
D. CV Program Combined Reduction											
E. Ongoing Measure & Verify	Worksheet E						Required				
F. Demand Response Tariff	Worksheet F						0% to 5%				
TOTAL REDUCTION FROM BASELINE (Must be at least 50% Reduction)											**0.0%**

NOTES TO WORKSHEET A

Note 1: If the Development includes more than one building, then use multiple Worksheets, or, add backup calculations or line items to this spreadsheet, as most appropriate.

Note 2: Final photovoltaic design and output informatio shall use industry standard software, including at least site location, array orientation, array tilt, and system efficiency. California Solar Initiative (CSI) rebate calculations and PV-Watts are examples of acceptable software.

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EXHIBIT 3

Worksheet A-LTG: Lighting Outside and in Interior Unconditioned Spaces

Name: Example Development

Category[1]	Source of Info (Attachments)	T24 Allowed Watts	Proposed Watts	Occupancy	Average hours	Days /year	Hours /year	Standard KWH/yr	Proposed KWH/yr
Unconditioned spaces	T24 LTG Forms						-	-	-
Unconditioned spaces	T24 LTG Forms						-	-	-
Unconditioned spaces	T24 LTG Forms						-	-	-
Unconditioned spaces	T24 LTG Forms						-	-	-
Unconditioned spaces	T24 LTG Forms						-	-	-
General Site Illumination (Tradable)	T24 OLTG Forms						-	-	-
General Site Illumination (Tradable)	T24 OLTG Forms						-	-	-
General Site Illumination (Tradable)	T24 OLTG Forms						-	-	-
General Site Illumination (Tradable)	T24 OLTG Forms						-	-	-
General Site Illumination (Tradable)	T24 OLTG Forms						-	-	-
Specific Applications (Non-Tradable)	T24 OLTG Forms						-	-	-
Specific Applications (Non-Tradable)	T24 OLTG Forms						-	-	-
Specific Applications (Non-Tradable)	T24 OLTG Forms						-	-	-
Signs (Non-Tradable)	T24 OLTG Forms						-	-	-
Signs (Non-Tradable)	T24 OLTG Forms						-	-	-
Totals (Subtotals are inputs to Worksheet A)								-	-

NOTES TO WORKSHEET A-LTG

Note 1: If more lines are needed, create a spreadsheet in similar format, and enter above, as appropriate.

Note 2: For average runtimes, use the hours in this chart, unless proposer demonstrates to the Bldg Department's satisfaction that a different value should be used.

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EXHIBIT 3

SAMPLE Worksheet B: LEED Path

Name: Example Development

Description	Source of Info (Attachments)	Standard or Baseline	Proposed	Typical Units of Measure	Virtual Rate	Baseline	Proposed	Units	Minimum % Reduction	Actual % Reduciton	
15.2.1 MINIMUM EFFICIENCY											
Title 24 Whole Building Performance	T24 UTIL-1, Part 1			Source TDV kbtu/sf-yr					15%		
15.2.2 CALCULATE BASELINE AND REDUCTIONS											
A. Energy Costs: LEED Performance Rating Method (PRM) EAp2/c1 Letter Template											
Conditioned Building(s)	LEED EAp2/c1 Letter Template	*Included*	*Included*								
Other energy uses on site		*Included*	*Included*								
Lighting: Outside and Uncond		*Included*	*Included*								
Onsite Renew Energy: Development		*Included*	*Included*								
Campus Renew Energy: Project		*Included*	*Included*								
Other		*Included*	*Included*								
Natural Ventilation		May be included in LEED EAp2/c1, OR, use Worksheet C									
Electricity (Summary)	LEED EAp2/c1 Section 1.8 Summary[1]			kWh	#DIV/0!			Site $			
Natural Gas (Summary)				therms	#DIV/0!			Site $			
A. Summary of Efficiency of Energy Costs						$ -	$ -	Site $			
B. Combined Renewable Reductions	Included in EAp2/c1 above										
C. Natural Ventilation	May be included in LEED EAp2/c1 above, OR, use Worksheet C										
Alternate:	Worksheet C						0% to 10%				
D. Chula Vista Program Savings	Confirm with Program Administrator										
Verified Electricity Savings				Site KWH	#DIV/0!		#DIV/0!	Site $			
Verified Gas Savings				Site Therms	#DIV/0!		#DIV/0!	Site $			
D. CV Program Combined Reduction											
E. Ongoing Measure & Verify	LEED EAc5. See Worksheet E.						Required				
F. Demand Response Tariff	Worksheet F						0% to 5%				
TOTAL REDUCTION FROM BASELINE (Must be at least 50% Reduction)											**0.0%**

NOTES TO WORKSHEET B

Note 1: LEED EAp2/c1 Letter Template: Section 1.8, "Energy Cost and Consumption by Energy Type - Performance Rating Method Compliance Table"

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EXHIBIT 3

SAMPLE Worksheet C: Natural Ventilation

Name: Example Development

When using Natural Ventilation (NV) to qualify as an energy reduction feature for this Agreement, the Development may qualify for a waiver if at least 75% of the area that would normally cooled includes effective natural ventilation strategies to help maintain comfortable temperatures. A 5% waiver is granted if the area is also served by an energy or cooling system drawing energy from the grid. A 10% waiver is granted if the area is not served by an energy or cooling system drawing from the grid. The waiver may be prorated if the area is less than 75%. Final determination of normally cooled areas are at the discretion of the Building Department. For example, in CA Climate Zone 7, spaces such as warehouses and kitchens do not normally have electric cooling.

Two approaches are possible:
1. A Development may use a performance approach, such as macro-flow or Computational Fluid Dynamics (CFD) modeling, to design and confirm the maintenance of comfort using natural ventilation techniques.

2 . As an alternate, the prescriptive calculations outlined in the Collaborative for High Performance Schools (CHPS) may be used. CHPS identifies an approach to achieving ventilation strategies which are likely to be effective in helping to maintain interior comfort when outside conditions are moderate. Even though the CHPS program targets school campuses, the approach is useful for
The designer should follow the CHPS guidelines. To satisfy the prescriptive approach, the following table may be used. Inlets and Outlets should each be at least 4% of the floor area of the spa

Space Name	Source of Cooling	Conditioned Floor Area (CFA)	Qualifying CFA	Performance or Prescriptive Calculation	Prescriptive: Inlet (Windward)			Prescriptive: Outlet (Leeward)				
					Area	Orientation	% CFA	Area	Orientation	% CFA	higher than inlet	opposite or corner wall
Space A	NV with grid cooling											
Space B	NV with grid cooling											
Space C	NV with grid cooling											
Subtotal:			**0**									
Space D	NV only											
Space E	NV only											
Space F	NV only											
Subtotal:			**0**									
Other spaces	no NV											
Total Normally Conditioned Floor Area		-										

CFA which is Naturally Ventilated, with Grid Cooling	0	
Energy Reduction Allowed		
CFA Which is Naturally Ventilated Only	0	
Energy Reduction Allowed		
Combined Energy Reduction Allowed		

CFA: NV + grid	Reduction
0%	0%
15%	1%
30%	2%
45%	3%
60%	4%
75%	5%

CFA: NV Only	Reduction
0%	0%
15%	2%
30%	4%
45%	6%
60%	8%
75%	10%

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EXHIBIT 3

SAMPLE Worksheet D: Chula Vista Energy Efficiency Program

Name: Example Development

Refer to the appropriate City ordinances for details on this program, including, but not limited to:

City of Chula Vista Municipal Code Section 15.12 "Green Building Standards Ordinance"
City of Chula Vista Municipal Code Section 15.26.030 "Increase Energy Efficiency Ordinance"

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EXHIBIT 3

SAMPLE Worksheet E: Ongoing Measurement & Verification (M&V)

Name: Example Development

Develop and implement a Measurement and Verification (M&V) Plan consistent with the International Performance Measurement and Verification Protocol (IPMVP) Volume III, Concepts and Options for Determining Energy Savings in New Construction, April 2003. The Development may choose either Option B or Option D.
M&V shall be on-going for the length of the lease.
Tenants shall have sub-meters for electricity. Sub-meters for gas and water should also be considered, but are not required.
The plan shall include a process for corrective action if energy performance goals are not achieved as planned. Refer to ASHRAE Guideline 14 for suggested ranges of discrepancy, appropriate to the meter, magnitude of energy uses, and overall plan.
If the LEED Path is chosen, the M&V Plan should be consistent with EAc5, except that LEED only requires one year of implementation, and the Energy Section of this Agreement requires M&V to be ongoing.

EXHIBIT 3

SAMPLE Worksheet F: Demand Response Tariffs

Name: Example Development

If the development chooses an SDG&E Demand Response tariff in which the customer has the option to manually or semi-automatically reduce electricity use when requested by the utility, then it will be awarded a 3 % waiver towards the overall energy reduction.

If the development chooses an SDG&E Demand Response tariff in which the utility can automatically reduce the customer's electricity use, then it will be awarded a 5 % waiver towards the overall energy reduction.

Meter(s)	Tariff	Manual or Semi-Automatic: Customer Controlled: 3%	Automatic, or Utility Controlled: 5%	% Reduction Awarded

EXHIBIT 3

Links for References used in EXHIBIT 3

Title 24 Building Energy Efficiency Standards	www.energy.ca.gov/title24/
Collaborative for High Performance Schools (CHPS) CHPS 2006 Volume II Best Practices Manual - Design	www.chps.net/dev/Drupal/node/31
IPMVP, Volume III, Concepts and Options for Determining Energy Savings in New Construction, April 2003.	www.evo-world.org Products & Services / IPMVP / Applications Volume III
Leadership in Energy and Environmental Design (LEED™)	www.usgbc.org
City of Chula Vista sponsored energy efficiency program	
Living Building Challenge	www.ilbi.org

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EXHIBIT D

CHULA VISTA BAYFRONT MASTER PLAN

SETTLEMENT AGREEMENT

This Chula Vista Bayfront Master Plan Settlement Agreement ("this Agreement") is entered into as of this fourth day of May, 2010, by and among the BAYFRONT COALITION member organizations named below (collectively "Coalition"), the SAN DIEGO UNIFIED PORT DISTRICT, a public body corporate and politic ("District"), the CITY OF CHULA VISTA, a municipal corporation ("City"), and the REDEVELOPMENT AGENCY OF THE CITY OF CHULA VISTA, a redevelopment agency pursuant to the Community Redevelopment Law, Health and Safety Code section 33000, et seq. ("RDA"), in light of the following facts and circumstances:

RECITALS

A. District has proposed an amendment to the Port Master Plan to provide a master plan for redevelopment of the Chula Vista Bayfront, which consists of approximately 556 acres of land and water located on the southeastern edge of San Diego Bay in the City of Chula Vista. In conjunction with the District's amendment to the Port Master Plan, the City is amending its General Plan, Mid-Bayfront Specific Plan and Local Coastal Plan, which will include implementation of future coastal development permits, tentative maps and final maps (collectively, the "City's Amendments"). The description contained in Chapter 3, including the Alternate L-Ditch Remediation Alternative contained in Section 5.7, of the DEIR (defined below), the proposed amendment to the Port Master Plan, the City's Amendments, and the infrastructure and development projects proposed therein, will be referred to in this Agreement as the "Proposed Project"; and

B. District, as the lead agency, has prepared a draft environmental impact report for the Proposed Project in compliance with the California Environmental Quality Act ("CEQA"), Public Resources Code section 21000, et seq., and its implementing guidelines, California Code of Regulations, title 14, section 15000, et seq. ("CEQA Guidelines"), which is known as the *Draft Revised Environmental Impact Report (EIR) for the Chula Vista Bayfront Master Plan (UPD # 83356-EIR-658; SCH # 2005081077*) and which will be referred to in this Agreement as the "DEIR"; and

C. The District duly circulated the DEIR for public review and comment, received comments on the DEIR from public agencies, individuals and organizations, and is preparing responses to the public comments received which will be included in the final environmental impact report ("FEIR") prepared for the Proposed Project; and

D. District, as the lead agency under CEQA, in its sole and absolute discretion, may certify or not certify the FEIR and may approve or not approve the Proposed Project or may select any alternative, including the alternative of not going forward with the Proposed Project, or adopt any mitigation measure or condition which it determines is necessary and appropriate to reduce or avoid any potential environmental impact of the Proposed Project or to comply with any applicable law or regulation; and

E. All or parts of the Proposed Project and the FEIR require the approval of other public agencies, including without limitation the California Coastal Commission ("CCC"), the State Lands

Commission, the City, the RDA, and other federal and state regulatory agencies with jurisdiction over natural resources which may be affected by the Proposed Project ("Resource Agencies"); and

F. Coalition is composed of the Environmental Health Coalition, San Diego Audubon Society, San Diego Coastkeeper, Coastal Environmental Rights Foundation, Southwest Wetlands Interpretative Association, Surfrider Foundation, San Diego Chapter and Empower San Diego, which are committed to ensuring that the Proposed Project and its component parts are implemented in a manner that provides community benefits including, but not limited to preservation and protection of natural resources and the environment, job quality and housing; and

G. In order to resolve any potential legal action, litigation or other action challenging the Project, the District, the City and the RDA wish to obtain the Coalition's support for approval of the Proposed Project and the Coalition wishes to obtain additional measures for protection of the environment above and beyond those required by CEQA and any other federal, state and local laws and regulations applicable to the Proposed Project.

NOW, THEREFORE, IN CONSIDERATION OF THE MUTUAL COVENANTS SET FORTH BELOW, THE PARTIES AGREE AS FOLLOWS:

1. **INCORPORATION OF RECITALS.** The recitals set forth above are incorporated herein as though set forth in full.

2. **DEFINITIONS.** Unless the context otherwise indicates, whenever used in this Agreement, the following terms will have the meanings ascribed to them below:

2.1 "Adaptive Management Review" will mean review of the adopted NRMP and its achievement of Management Objectives with the goal of adjusting implementation measures to enhance achievement of the Management Objectives.

2.2 "BCDC" will have the meaning set forth in Section 13.1.

2.3 "Baseline" will have the meaning set forth in Section 15.2.2.

2.4 "CCC" will have the meaning set forth in Recital E.

2.5 "CEQA" will have the meaning set forth in Recital B.

2.6 "Coalition" will have the meaning set forth in the Introduction.

2.7 "DEIR" will have the meaning set forth in Recital B.

2.8 "Development" will have the meaning set forth in Section 15.1.

2.9 "Development Commencement" will mean the commencement of mass grading for any infrastructure or site development contemplated by the Proposed Project but specifically excluding construction of H Street or the grading of Parcels HP-5, H-13, H-14 and H-15.

2.10 "Disputing Party" will have the meaning set forth in Section 11.1.1

2.11 "District" will have the meaning set forth in the Introduction.

2.12 "District Enforcement Personnel" will have the meaning set forth in Section 4.4.1.1.

2.13 "Energy Efficiency Requirement" will have the meaning set forth in Section 15.2.1.

2.14 "FEIR" will have the meaning set forth in Recital C.

2.15 "Findings" will mean the written findings as defined in Section 15091 of the CEQA Guidelines, adopted by District as the lead agency for the FEIR and by City or RDA as responsible agencies for the FEIR.

2.16 "JPA" will have the meaning set forth in Section 3.4.

2.17 "LEED Path" will have the meaning set forth in Section 15.2.2.

2.18 "MA II Notice" will have the meaning set forth in Section 12.2.2.

2.19 "MA Notice" will have the meaning set forth in Section 11.1.3.

2.20 "M&V Plan" will have the meaning set forth in Section 15.2.2.4.

2.21 "Management Objections" will have the meaning set forth in Section 4.1.

2.22 "Managing Agency" will have the meaning set forth in Section 11.1.2.

2.23 "MMRP" will have the meaning set forth in Section 4.4.6.1.

2.24 "No-Touch Buffer Areas" will have the meaning set forth in Section 4.1.3.

2.25 "Notice of Dispute" will have the meaning set forth in Section 11.1.1.

2.26 "NRMP" will have the meaning set forth in Section 3.

2.27 "NRMP Amendment" will have the meaning set forth in Section 3.3.

2.28 "Opposition Statements" will have the meaning set forth in Section 11.1.2.1.

2.29 "Passive" will have the meaning set forth in Section 6.1.

2.30 "Periodic Review" will have the meaning set forth in Section 3.3.

2.31 "PMP" will have the meaning set forth in Section 9.2.

2.32 "PMPA Cap" will have the meaning set forth in Section 9.2.

2.33 "Position Statement" will have the meaning set forth in Section 12.2.

2.34 "Predators" will have the meaning set forth in Section 4.1.3.

2.35 "Proposed Project" will have the meaning set forth in Recital A.

2.36 "PWC" will mean a motorboat less than sixteen feet in length which uses an inboard motor powering a jet pump as its primary motive power and which is designed to be operated by a person sitting, standing, or kneeling on, rather than in the conventional manner of sitting or standing inside the vessel.

2.37 "RDA" will have the meaning set forth in the Introduction.

2.38 "Renewable Energy" will have the meaning set forth in Section 15.2.2.1.

2.39 "Renewable Energy Site" will have the meaning set forth in Section 15.2.2.2.

2.40 "Resource Agencies" will have the meaning set forth in Recital E.

2.41 "RFP" will have the meaning set forth in Section 13.3.

2.42 "RFQ" will have the meaning set forth in Section 13.3.

2.43 "Title 24" will have the meaning set forth in Section 15.2.1.

2.44 "Title 24 Path" will have the meaning set forth in Section 15.2.2.

2.45 "Transition Buffer Areas" will have the meaning set forth in Section 4.1.4.

2.46 "Wildlife Advisory Group" will have the meaning set forth in Section 10.1.

2.47 "Wildlife Habitat Areas" will have the meaning set forth in Section 3.1.

3. **NATURAL RESOURCES MANAGEMENT PLAN.** In recognition of the sensitivity of the natural resources and the importance of protection, restoration, management and enforcement in protecting those resources, the District, City and RDA will cause to be prepared a Natural Resources Management Plan ("NRMP") in accordance with this section. The NRMP will be designed to achieve the Management Objectives (defined below) for the Wildlife Habitat Areas (defined below). The NRMP will be an adaptive management plan, reviewed and amended as necessary by the District and City in compliance with the process described in Section 3.3 of this Agreement.

3.1 **WILDLIFE HABITAT AREAS DEFINED.** "Wildlife Habitat Areas" are defined as:

3.1.1 All National Wildlife refuge lands, currently designated and designated in the future, in the South San Diego Bay and Sweetwater Marsh National Wildlife Refuge Units. Anything in this Agreement to the contrary notwithstanding, National Wildlife Refuge lands are included in the definition of Wildlife Habitat Areas for the sole purpose of addressing adjacency impacts and not for the purpose of imposing affirmative resource management obligations with respect to the areas within the National Wildlife Refuge lands.

3.1.2 All District designated lands and open water areas in the Conservation Land Use Designations of Wetlands, Estuary, and Habitat Replacement as depicted in the Draft Precise Plan for Planning District 7.

3.1.3 Parcels 1g and 2a from the City's Bayfront Specific Plan.

3.1.4 No-Touch Buffer Areas as depicted on attached Exhibit 2.

3.1.5 The Wildlife Habitat Areas are depicted on attached Exhibit 1.

3.2 **NRMP MANAGEMENT OBJECTIVES FOR WILDLIFE HABITAT AREAS**. Taking into consideration the potential changes in functionality of Wildlife Habitat Areas due to rising sea levels, the NRMP will promote, at a minimum, the following objectives ("Management Objectives") for the Wildlife Habitat Areas:

3.2.1 Long term protection, conservation, monitoring, and enhancement of:

3.2.1.1 Wetland habitat, with regard to gross acreage as well as ecosystem structure, function, and value.

3.2.1.2 Coastal sage and coastal strand vegetation.

3.2.1.3 Upland natural resources for their inherent ecological values, as well as their roles as buffers to more sensitive adjacent wetlands. Upland areas in the Sweetwater and Otay Districts will be adaptively managed to provide additional habitat or protection to create appropriate transitional habitat during periods of high tide and taking into account future sea level rise.

3.2.2 Preservation of the biological function of all Bayfront habitats serving as avifauna for breeding, wintering, and migratory rest stop uses.

3.2.3 Protection of nesting, foraging, and rafting wildlife from disturbance.

3.2.4 Avoidance of actions within the Proposed Project area that would adversely impact or degrade of water quality in San Diego Bay or watershed areas or impair efforts of other entities for protection of the watershed.

3.2.5 Maintenance and improvement of water quality where possible and coordination with other entities charged with watershed protection activities.

3.3 **CREATION, PERIODIC REVIEW AND AMENDMENT OF THE NRMP**. The NRMP will be a natural resource adaptive management and monitoring plan initially prepared in consultation with the Wildlife Advisory Group, defined in Section 10.1, and reviewed and amended in further consultation with the Wildlife Advisory Group one year following adoption of the NRMP and annually thereafter for the first five years after adoption, after which it will be reviewed and amended as necessary every other year for the next six (6) years, then once every five (5) years thereafter, each in accordance with Section 10.5. If the RCC is not pursued in the first five (5) years after certification of the FEIR, this schedule will be amended to ensure that the NRMP is

evaluated every year for five years after the development of the RCC. The periodic review of the NRMP described in the preceding sentences is hereinafter called "Periodic Review." A material revision of the NRMP is hereinafter called an "NRMP Amendment." Nothing in the foregoing schedule requirements will be interpreted to preclude a speedy response or revision to the NRMP if necessary to abate an emergency condition or to accommodate relevant new information consistent with the Management Objectives. Any permanent changes to the NRMP will be subject to Section 10.5. Preparation of the NRMP will begin within six months of the filing of the Notice of Determination for the FEIR by District and will be completed prior to the earlier of: (a) Development Commencement; (b) issuance of a Certificate of Occupancy for the Pacifica project; or (c) three years. Periodic Review will address, among other things, monitoring of impacts of development as it occurs and monitoring the efficacy of water quality improvement projects (if applicable) and management and restoration actions needed for resource protection, resource threats, management (i.e., sea-level rise, trash, window bird strikes, lighting impacts, bird flushing, water quality, fireworks, human-wildlife interface, education and interpretation programs, public access, involvement, and use plan, management of the human-wildlife interface, wildlife issues related to facilities, trails, roads, overlooks planning, and watershed coordination) and other issues affecting achievement of Management Objectives and related to Adaptive Management Review.

3.3.1 District and City will cause the preparation, consideration negotiation and approval of the NRMP including, staff and administrative oversight and engagement of such consultants as are reasonable and necessary for their completion, approval and amendment in accordance with this Agreement.

3.3.2 District and City will each provide a written notice of adoption ("Notice of Adoption") to other parties to this Agreement upon their respective approval of the NRMP.

3.4 **SPECIFIC PROVISIONS REGARDING PERSONNEL AND FUNDING**. Funding for the implementation of the NRMP will be provided by the District, City and RDA. To meet these obligations, the District, City and RDA will commit revenues or otherwise provide funding to a joint powers authority ("JPA") formed pursuant to the California Marks-Roos Act, Articles 1, 2, 3 and 4 of Chapter 5 of Division 7 of Title 1 of the California Government Code. District, City and RDA will ensure the JPA is specifically charged to treat the financial requirements of this Agreement as priority expenditures that must be assured as project-related revenues are identified and impacts initiated. The District, City and RDA expressly acknowledge the funding commitments contemplated herein will include, but not be limited to, funding for personnel and overhead or contractor(s)/consultant(s) to implement and ensure the following functions and activities:

3.4.1 On-site management and enforcement for parks and Wildlife Habitat Areas as necessary to enforce restrictions on human and Predator access regarding Wildlife Habitat Areas;

3.4.2 Enforcement of mitigation measures including, but not limited to, trash collection, noise restrictions, removal of invasive plants, habitat restoration, and park use restrictions;

3.4.3 Coordination, development, implementation and evaluation of effectiveness of education and mitigation programs, including implementation of NRMP;

3.4.4 Evaluation of effectiveness of bird strike mitigation and design measures;

3.4.5 Water quality protections; and

3.4.6 Coordination of injured animal rehabilitation activities.

3.5 **PACIFICA INITIAL SALE UNIT CONTRIBUTION.** Pacifica Initial Sale Unit Contribution Funds shall be directed to the JPA and placed into a Community Benefits Fund that will be non-wasting, with interest revenues committed to the specific broad categories of: Natural Resources; Affordable Housing; Sustainability/Livability; and Community Impacts and Culture. The Community Benefits Fund revenues shall be spent within the Project Area and Western Chula Vista as further described in Section 10.6, subject to applicable law.

4. **IMPLEMENTATION OF NRMP**. The following Management Objectives and minimum performance standards shall guide the preparation of the NRMP.

4.1 **MANAGEMENT OBJECTIVES**. In addition to Section 3.2, the NRMP will achieve the following Management Objectives:

4.1.1 Ensure the Port, City and RDA are not required to expend funds for NRMP implementation until project-related revenues are identified in accordance with Section 3.4 and impacts initiated.

4.1.2 Require coordination with the Resource Agencies of the District's, City's and Resource Agencies' respective obligations with respect to the Buffer Areas and Wildlife Habitat Areas.

4.1.3 Designate "No-Touch Buffer Areas" as that term is defined in the Project description of the FEIR and as depicted in Exhibit 2. Such areas will contain fencing designed specifically to limit the movement of domesticated, feral, and nuisance predators (e.g. dogs, cats, skunks, opossums and other small terrestrial animals [collectively, "Predators"]) and humans between developed park and No-Touch Buffer Areas and Wildlife Habitat Areas. The fence will be a minimum 6-foot high, black vinyl chain link fence or other suitable barrier (built to the specifications described in the FEIR). Fence design may include appropriate locked access points for maintenance and other necessary functions. Installation of the fence will include land contouring to minimize visual impacts of the fence. The installation of such fencing in the Sweetwater and Harbor Districts must be completed prior to the issuance of Certificates of Occupancy for development projects on either Parcel H-3 or H-23 and in conjunction with development or road improvements in the Sweetwater District with the exception of Parcel S-4 which will retain the existing fencing until that parcel is redeveloped and the fencing of the No-Touch Buffer installed.

4.1.4 Prohibit active recreation, construction of any road (whether paved or not), within No-Touch Buffer Areas, "Transition Buffer Areas" and "Limited Use Buffer Areas" as

those terms are defined in the Project description of the FEIR and as depicted in Exhibit 2, with the exception of existing or necessary access points for required maintenance.

4.1.5 Protect the No-Touch Buffer Areas from the impacts of the Proposed Project including, without limitation, fencing necessary to protect the Sweetwater Marsh and the Sweetwater parcel tidal flats, the J Street Marsh next to the SDB Refuge and the north side of Parcel H-3.

4.1.6 Include additional controls and strategies restricting movement of humans and Predators into sensitive areas beyond the boundaries of the designated Buffer Areas.

4.1.7 Require the Recreational Vehicle Park to install fencing or other barriers sufficient to prevent passage of Predators and humans into sensitive adjacent habitat.

4.1.8 Require all dogs to be leashed in all areas of the Proposed Project at all times except in any designated and controlled off-leash areas.

4.1.9 Impose and enforce restrictions on all residential development to keep cats and dogs indoors or on leashes at all times. Residential developments will be required to provide education to owners and/or renters regarding the rules and restrictions regarding the keeping of pets.

4.2 **WALKWAY AND PATH DESIGN.** Detail conditions and controls applicable to the walkways, paths, and overlooks near Wildlife Habitat Areas and outside of the No-Touch Buffer Areas in accordance with the following:

4.2.1 Alignment, design, and general construction plans of walkways and overlooks will be developed to minimize potential impacts to Wildlife Habitat Areas.

4.2.2 Path routes will be sited with appropriate setbacks from Wildlife Habitat Areas.

4.2.3 Paths running parallel to shore or marsh areas that will cause or contribute to bird flushing will be minimized throughout the Proposed Project.

4.2.4 Walkways and overlooks will be designed to minimize and eliminate, where possible, perching opportunities for raptors and shelter for skunks, opossums or other Predators.

4.2.5 Walkways and overlooks that approach sensitive areas must be blinded, raised, or otherwise screened so that birds are not flushed or frightened. In general, walkway and overlook designs will minimize visual impacts on the Wildlife Habitat Areas of people on the walkways.

4.3 **PREDATOR MANAGEMENT.** The NRMP will include provisions designed to manage Predator impacts on Wildlife Habitat Areas which will include and comply with the following:

4.3.1 Year-round Predator management will be implemented for the life of the Proposed Project with clearly delineated roles and responsibilities for the District, City and Resource Agencies. The primary objective of such provisions will be to adequately protect terns, rails, plovers, shorebirds, over-wintering species, and other species of high management priority as determined by the Resource Agencies.

4.3.2 Predator management will include regular foot patrols and utilize tracking techniques to find and remove domestic or feral animals.

4.3.3 Address Predator attraction and trash management for all areas of the Proposed Project by identifying clear management measures and restrictions. Examples of the foregoing include design of trash containers, including those in park areas and commercial dumpsters, to be covered and self-closing at all times, design of containment systems to prevent access by sea gulls, rats, crows, pigeons, skunks, opossums, raccoons, and similar animals and adequate and frequent servicing of trash receptacles.

4.3.4 All buildings, signage, walkways, overlooks, light standards, roofs, balconies, ledges, and other structures that could provide line of sight views of Wildlife Habitat Areas will be designed in a manner to discourage their use as raptor perches or nests.

4.4 **ADDITIONAL HABITAT MANAGEMENT AND PROTECTION.**

4.4.1 The District will exercise diligent and good faith efforts to enter into the following cooperative agreements with the USFWS or other appropriate agency or organization:

4.4.1.1 An agreement providing for the long-term protection and management of the sensitive biological habitat running north from the South Bay Boatyard to the Sweetwater River Channel (known as the Sweetwater Tidal Flats) and addressing educational signage, long-term maintenance, and additional protection measures such as increased monitoring and enforcement, shared jurisdiction and enforcement by District personnel with legal authority to enforce applicable rules and regulations ("District Enforcement Personnel"), shared jurisdiction and enforcement by District Enforcement Personnel and other appropriate Resource Agencies of resource regulations, and placement of enforcement signage. Subject to the cooperation of the applicable Resource Agency, such cooperative agreement will be executed prior to the Development Commencement of any projects subject to District's jurisdiction within the Sweetwater or Harbor Districts.

4.4.1.2 An agreement for the long-term protection and management of the J Street Marsh and addressing additional protective measures such as educational signage, long-term maintenance, and monitoring and enforcement by District Enforcement Personnel and enforcement of resource regulations by District Enforcement Personnel and other Resource Agencies and placement of enforcement signage. Subject to the cooperation of the applicable Resource Agency, such cooperative agreement will be executed prior to the Development Commencement within the Otay District.

4.4.1.3 If either of the cooperative agreements contemplated in Sections 4.4.1.1 and 4.4.1.2 is not achievable within three (3) years after FEIR certification, the

District will develop and pursue another mechanism that provides long-term, additional protection and natural resource management for these areas.

4.4.2 The District will include an analysis of the appropriate level and method for wetland and marine life habitat restoration of the intake/discharge channels associated with the South Bay Power Plant in the environmental review document for the demolition of the South Bay Power Plant.

4.4.3 The FEIR Project Description will be revised to include, within Parcel SP-2, a permanent 100-foot-wide buffer for the seasonal wetland from proposed development. The PMP Amendment will also be revised to reflect the permanent buffer width within Parcel SP-2.

4.4.4 The FEIR Project Description for Parcel S-4 will be revised to add the requirement for the fencing of the 100-foot buffer on the north side of the parcel prior to any physical alterations of the site. In addition, the FEIR Project Description for parcels S-4 and S-1 will be amended to clarify that at the time project specific development is proposed on these parcels, shading impacts, appropriate setbacks, step backs, and/or height reductions, will be analyzed as part of the necessary subsequent environmental review for those projects.

4.4.5 As a future and separate project, the District will investigate, in consultation with the USFWS, the feasibility of restoring an ecologically meaningful tidal connection between the F & G Street Marsh and the upland marsh on parcel SP-2 consistent with USFWS restoration concepts for the area. At a minimum, the investigation will assess the biological value of tidal influence, the presence of hazardous materials, necessary physical improvements to achieve desired results, permitting requirements, and funding opportunities for establishing the tidal connection. This investigation will be completed prior to the initiation of any physical alteration of SP-2, F Street, and/or the F & G Street Marsh. In addition, once emergency access to the Proposed Project area has been adequately established such that F Street is no longer needed for public right-of-way, the District and City will abandon/vacate the F Street right-of-way for vehicular use, but may reserve it for pedestrian and bicycle use if ecologically appropriate.

4.4.6 In addition to the standards described above, the NRMP will include:

4.4.6.1 All elements which address natural resource protection in the FEIR Mitigation Monitoring and Reporting Program ("MMRP") including but not limited to those which assign responsibility and timing for implementing mitigation measures consistent with the City's MSCP Subarea Plan;

4.4.6.2 Pertinent sections of the MSCP Subarea Plan;

4.4.6.3 References to existing District policies and practices, such as Predator management programs and daily trash collections with public areas and increase service during special events;

4.4.6.4 Establishment of design guidelines to address adjacency impacts, such as storm water, landscape design, light and noise and objectives as discussed in Sections 4.6, 4.7, 4.8 and 4.9, below;

4.4.6.5 Establishment of baseline conditions and management objectives; and

4.4.6.6 Habitat enhancement objectives and priorities.

4.5 **BIRD STRIKES AND BIRD DISORIENTATION.** Use of reflective coatings on any glass surface will be prohibited. Buildings will employ the measures described in Mitigation Measure 4.8-23 of the FEIR to the maximum extent practicable. Structural design will include secondary and tertiary setbacks and, to the maximum extent practicable, balconies and other elements will step back from the water's edge.

4.5.1 Buildings will be sited and designed to minimize glass and windows facing Wildlife Habitat Areas to the maximum extent possible. Design for towers on Parcel H-3 should avoid east-west monolith massing and should include architectural articulation.

4.5.2 Parcels containing surface parking, such as those depicted for the Sweetwater District, will be designed with parking lots nearer Wildlife Habitat Areas. Site plans on parcels adjacent to Wildlife Habitat Areas will maximize distance between structures and such areas.

4.5.3 Project design standards will encourage window stenciling and angling.

4.5.4 Bird strikes must be monitored in accordance with the NRMP and measures developed to address persistent problem areas. Nighttime lighting in tower buildings must be addressed and evaluated through adaptive management. Minimization of impacts of buildings on birds and the Wildlife Habitat Areas will be a priority in the selection of window coverings, glass color, other exterior materials, and design of exterior lighting and lighting of signs.

4.5.5 The tallest buildings on Parcel H-3 will be located generally on the southern portion of the parcel with building heights decreasing towards the north and west. The foregoing will not be interpreted to preclude incorporating secondary and tertiary setbacks along public streets.

4.6 **STORM WATER AND URBAN RUNOFF QUALITY.**

4.6.1 Vegetation-based storm water treatment facilities, such as natural berms, swales, and detention areas are appropriate uses for Buffer Areas so long as they are designed using native plant species and serve dual functions as habitat areas. Provisions for access for non-destructive maintenance and removal of litter and excess sediment will be integrated into these facilities. In areas that provide for the natural treatment of runoff, cattails, bulrush, mulefat, willow, and the like are permissible.

4.6.2 Storm water and non-point source urban runoff into Wildlife Habitat Areas must be monitored and managed so as to prevent unwanted ecotype conversion or weed invasion. A plan to address the occurrence of any erosion or type conversion will be developed and implemented, if necessary. Monitoring will include an assessment of stream bed scouring and habitat degradation, sediment accumulation, shoreline erosion and stream bed widening, loss of aquatic species, and decreased base flow.

4.6.3 The use of persistent pesticides or fertilizers in landscaping that drains into Wildlife Habitat Areas is prohibited. Integrated Pest Management must be used in all outdoor, public, buffer, habitat, and park areas.

4.6.4 Fine trash filters (as approved by the agency having jurisdiction over the storm drain) are required for all storm drain pipes that discharge toward Wildlife Habitat Areas.

4.7 **LANDSCAPING AND VEGETATION.** The following landscape guidelines will apply to the Proposed Project area:

4.7.1 Invasive plant species (as defined in Appendix 4.8-7 of the FEIR or listed in the California Invasive Plant Inventory list or California Invasive Plant Inventory Database or updates) will not be used in the Proposed Project area. Any such invasive plant species that establishes itself within the project area will be immediately removed to the maximum extent feasible and in a manner adequate to prevent further distribution into Wildlife Habitat Areas.

4.7.2 Only designated native plants will be used in No-Touch Buffer Areas, habitat restoration areas, or in the limited and transitional zones of Parcel SP-1 adjacent to Wildlife Habitat Areas.

4.7.3 Non-native plants will be prohibited adjacent to Wildlife Habitat Areas and will be strongly discouraged and minimized elsewhere where they will provide breeding of undesired scavengers.

4.7.4 No trees will be planted in the No-Touch Buffer Areas or directly adjacent to a National Wildlife Refuge, J Street Marsh, or SP-2 areas where there is no Buffer Area.

4.8 **LIGHTING AND ILLUMINATION.**

4.8.1 All roadways will be designed, and where necessary edges bermed, to ensure penetration of automobile lights in the Wildlife Habitat Areas will be minimized, subject to applicable City and District roadway design standards.

4.8.2 Explicit lighting requirements to minimize impacts to Wildlife Habitat Areas will be devised and implemented for all Bayfront uses including commercial, residential, municipal, streets, recreational, and parking lots. Beacon and exterior flood lights are prohibited where they would impact a Wildlife Habitat Area and use of this lighting should be minimized throughout the project. All street and walkway lighting should be shielded to minimize sky glow.

4.8.3 To the maximum extent feasible, all external lighting will be designed to minimize any impact to Wildlife Habitat Areas, and operations and maintenance conditions and procedures will be devised to ensure appropriate long-term education and control. To the maximum extent feasible, ambient light impacts to the Sweetwater or J Street Marshes will be minimized.

4.8.4 In Sweetwater and Otay District parks, lighting will be limited to that which is necessary for security purposes. Security lighting will be strictly limited to that required by applicable law enforcement requirements. All lighting proposed for the Sweetwater and Otay District parks and the shoreline promenade will be placed only where needed for human safety.

Lights will be placed on low-standing bollards, shielded, and flat bottomed, so the illumination is directed downward onto the walkway and does not scatter. Lighting that emits only a low-range yellow light will be used since yellow monochromatic light is not perceived as natural light by wildlife and minimizes eco-disruptions. No night lighting for active sports facilities will be allowed.

4.8.5 Sweetwater and Otay District parks will open and close in accordance with District Park Regulations.

4.8.6 Laser light shows will be prohibited.

4.8.7 Construction lighting will be controlled to minimize Wildlife Habitat Areas impacts.

4.9 **NOISE.**

4.9.1 Construction noise must be controlled to minimize impact to Wildlife Habitat Areas.

4.9.2 A maximum of three (3) fireworks events can be held, all outside of Least Tern nesting season except 4th of July, which may be allowed if in full regulatory compliance and if the nesting colonies are monitored during the event and any impacts reported to the Wildlife Advisory Committee so they can be addressed. All shows must comply with all applicable water quality and species protection regulations. All shows must be consistent with policies, goals, and objectives in NRMP.

4.10 **EDUCATION.** An environmental education program will be developed and implemented and will include the following:

4.10.1 The program must continue for the duration of the Proposed Project and must target both residential and commercial uses as well as park visitors.

4.10.2 The program's primary objective will be to educate Bayfront residents, visitors, tenants and workers about the natural condition of the Bay, the ecological importance of the Proposed Project area and the public's role in the restoration and protection of wildlife resources of the Bay.

4.10.3 The program will include educational signage, regular seminars and interpretive walks on the natural history and resources of the area, regular stewardship events for volunteers (shoreline and beach cleanups, exotic plant removal, etc.).

4.10.4 Adequate annual funding for personnel or contractor/consultant and overhead to ensure implementation of the following functions and activities in collaboration with the Chula Vista Nature Center or US Fish and Wildlife Service:

4.10.5 Coordination of Volunteer programs and events;

4.10.6 Coordination of Interpretive and educational programs;

4.10.7 Coordination of Tenant, resident and visitor educational programs;

4.10.8 Docent educational; and

4.10.9 Enhancements and restoration events.

4.11 **BOATING IMPACTS.**

4.11.1 All boating, human and pet intrusion must be kept away from the F&G Street channel mouth and marsh.

4.11.2 Water areas must be managed with enforceable boating restrictions. The District will exercise diligent and good faith efforts to enter into a cooperative agreement with the Resource Agencies and Coast Guard to ensure monitoring and enforcement of no-boating zones and speed limit restrictions to prevent wildlife disturbances.

4.11.3 No boating will be allowed in vicinity of the J Street Marsh or east of the navigation channel in the Sweetwater District during the fall and spring migration and during the winter season when flocks of birds are present.

4.11.4 All rentals of PWCs will be prohibited in the Proposed Project area.

4.11.5 Use PWCs will be prohibited in Wildlife Habitat Areas, subject to applicable law.

4.11.6 A five (5) mile per hour speed limit will be enforced in areas other than the navigation channels.

4.11.7 Nothing in this section shall preclude bona fide research, law enforcement, or emergency activities.

5. **RESTORATION PRIORITIES.** The following will supplement the description of the conceptual mitigation opportunities in the FEIR (including Appendix 4.8-8 (Mitigation Opportunities). The parties understand and acknowledge that the following restoration priorities will not be included in the NRMP but rather will be applicable (i) if and only to the extent that District or City are required to restore degraded habitat in accordance with the terms of the MMRP or (ii) to establish priorities for District's pursuit of grant funding.

5.1 Restoration priorities for the Proposed Project are those mitigation opportunities in the FEIR as depicted in the conceptual mitigation opportunities (figures 4.8-23 and 4.8-26) and the projects located in the South Bay in the District's Adopted Restoration and Enhancement Plan.

5.2 With the exception of the restoration described in Section 6.4, shoreline/marsh interface restorations in the Sweetwater and Otay Districts should be natural and gradually sloped and planted with salt marsh and upland transition plants in a manner that will stabilize the bank without the need for additional riprap areas. Upland slopes should be contoured to provide a very gentle grade so as to maximize tidal elevation of mudflats, salt marsh habitat and upland transition

areas. This area should be wide enough to encourage or allow wildlife to move between the Sweetwater marsh and the F&G Street marsh and between the J Street Marsh and the South San Diego Bay Unit of the NWR. The shoreline should be improved and restored to facilitate a more effective upland refuge area for species during high tides and to accommodate the impacts from global sea rise.

5.3 The Telegraph Creek should be improved to be a more natural channel as part of the redevelopment of the Otay District. Efforts to naturalize and revegetate the creek will be maximized as is consistent with its function as a storm water conveyance.

5.4 The District will perform an analysis of the appropriate level and method for environmental restoration of the intake/discharge channels associated with the South Bay Power Plant in the environmental review document for the demolition of the power plant.

5.5 Clarifying language will be added to the FEIR to state that the removal of Lagoon Drive/E Street will be done as part of the E Street extension improvement project.

6. **SWEETWATER AND OTAY DISTRICT PUBLIC PARK REQUIREMENTS.** Sweetwater and Otay District Public Parks will meet the following minimum standards in addition to those described above:

6.1 The parks will be Passive in nature and encourage Passive recreation, be low-impact and contain minimal permanent structures. Structures will be limited to single-story heights and will be limited in function to restrooms, picnic tables, tot lots, shade structures and overlooks. For the purposes of this Agreement, the term "Passive" will mean that which emphasizes the open-space aspect of a park and which involves a low level of development, including picnic areas and trails. In contrast, active recreation is that which requires intensive development and includes programmable elements that involve cooperative or team activity, including, ball fields and skate parks.

6.2 The parks will be constructed using low water-use ground cover alternatives where possible.

6.3 Pedestrian and bike trails will be segregated where feasible. A meandering public trail will be provided along the entire length of the Bayfront. The meandering trail within the Sweetwater Park and adjacent to Buffer Areas will not be paved.

6.4 The parks will not include athletic field amenities.

6.5 No unattended food vending will be allowed.

6.6 The parks will include enforcement signage that prohibits tenants, employees, residents, or visitors from feeding or encouraging feral cat colonies and prevents feral cat drop-off or abandonment of pets; and prohibits leash free areas near buffers.

6.7 Due to their immediate adjacency to Wildlife Habitat Areas, the following restrictions will apply to parks located within the Sweetwater and Otay Districts:

6.7.1 Such parks will be designated as Passive use parks and use of amplified sound equipment will be prohibited.

6.7.2 Reservations for group events and activities will be prohibited.

7. **PHASE I SIGNATURE PARK IMPROVEMENTS.** Phase I Signature Park improvements (including development of Parcel S-2, within the Transition Buffer Areas and Limited Use zones of parcel SP1, and the fencing of the No-Touch Buffer Area of Parcel SP1) will be completed prior to the issuance of Certificates of Occupancy for projects developed on either Parcel H-3 or H-23 and after any additional necessary environmental review. The public participation process for the design of the parks (see BCDC process described in Section 13 below) will be completed prior to District staff seeking concept approval from the Board of Port Commissioners. The concept approval for the Signature Park will include a refined plan to address the linkage between the parks over the F and G Street Channel. The design will ensure that the linkage between the two parks is easily accessed, obvious, and allows visitors to flow naturally and safely between the two parts of the park. A separate pedestrian bridge will be evaluated and, if necessary, a supplemental environmental review will be performed to address any necessary issues prior to the concept approval being forwarded to the Board of Port Commissioners.

8. **HAZARDOUS WASTE REMOVAL STANDARDS.** Parcels contaminated with hazardous materials will be remediated to levels adequate to protect human health and the environment.

9. **H-3 DENSITIES.** The following provisions relate to the density of Parcel H-3.

9.1 The Project Description in the FEIR and the PMPA will be revised to include a reduced RCC maximum building height of 240 feet above ground level.

9.2 The Port Master Plan ("PMP") will establish a maximum number of hotel rooms allowed to be constructed within the boundary of the Chula Vista Bayfront Master Plan which will be 3,100 rooms with a maximum number of 2,850 hotel rooms within that portion of the CVBMP covered by the PMP amendment ("PMPA Cap").

9.3 The Findings adopted in connection with the approval of the FEIR and PMP amendment for the CVBMP will indicate that the full suite of mitigation measures described and required within the certified FEIR is sufficient to mitigate the construction of 1,600 rooms and 415,000 net square feet of conference facilities on Parcel H-3 at the program level.

9.4 Any proposal to construct more than 1,600 rooms on Parcel H-3 will require a supplement to the FEIR ("SEIR"). The SEIR will evaluate any areas needing additional analysis but, at a minimum, must include biological impacts, massing, visual, noise, shading, water supply, water quality, hazardous materials and environmental remediation, and will include discussion of the need for additional mitigation measures to reduce impacts associated with any increase in rooms proposed for Parcel H-3.

10. CREATION OF THE SOUTH BAY WILDLIFE ADVISORY GROUP.

10.1 A South Bay Wildlife Advisory Group ("Wildlife Advisory Group") will be formed to advise the District and City in the creation of the NRMP, cooperative management agreements, Adaptive Management Review (defined below) and any related wildlife management and restoration plans or prioritizations. The Wildlife Advisory Group will also address management issues and options for resolution. The Wildlife Advisory Group will initiate and support funding requests to the District and City, identify priorities for use of these funds and engage in partnering, education, and volunteerism to support the development of the Proposed Project in a manner that effectively protects and enhances the fish, wildlife, and habitats of the area and educates and engages the public.

10.2 District and City will provide such administrative and staff support to the Wildlife Advisory Group as is necessary to perform the functions and achieve the goals described herein.

10.3 The Wildlife Advisory Group will be comprised of the following: one (1) representative from each Environmental Health Coalition, San Diego Audubon Society, San Diego Coastkeeper, Coastal Environmental Rights Foundation, Southwest Wetlands Interpretative Association, Surfrider Foundation, San Diego Chapter and Empower San Diego; two (2) representatives from the Chula Vista Nature Center (one from educational programs and one from programs/operations); up to three (3) representatives of major developers or tenants with projects in the CVBMP (including one from Pacifica Companies, which on completion, may be succeeded by a representative of its homeowner association); one (1) representative from the City's Resource Conservation Commission; one (1) from either Harborside or Mueller elementary school or the School District; Western and Eastern Chula Vista residents selected by the City (one from Northwest, one from Southwest and one from east of I-805); one (1) representative from eco-tourism based business; two (2) individuals appointed by District; and representatives from Resource Agencies (two from the US Fish and Wildlife Service one from Refuges and one from Endangered Species, and one (1) each from California Department of Fish and Game, National Marine Fisheries Service, Regional Water Board, and CCC).

10.4 The Wildlife Advisory Group will meet as needed, but at a minimum of every six (6) months for the first ten (10) years and annually thereafter. The Wildlife Advisory Group will be formed within six months of the filing of the Notice of Determination for the FEIR by the District.

10.5 The Wildlife Advisory Group will meet at the intervals described in Section 10.4 to review the NRMP to: (i) determine the effectiveness of the NRMP in achieving the Management Objectives; (ii) identify any changes or adjustments to the NRMP required to better achieve the Management Objectives; (iii) identify any changes or adjustments to the NRMP required to respond to changes in the man-made and natural environments that are affecting or, with the passage of time may affect, the effectiveness of the NRMP in achieving the Management Objectives; and (iv) review priorities relative to available funding. At its periodic meetings, the Wildlife Advisory Group may also consider and make recommendations regarding (x) implementation of the NRMP as needed, (y) Adaptive Management Review and (z) NRMP Amendments.

10.6 The Wildlife Advisory Group will advise the JPA on expenditure of the Community Benefits Fund consistent with Section 3.5, subject to applicable law.

10.7 Written recommendations from the Wildlife Advisory Group will be forwarded to the District and City for consideration on key decisions as the build-out of the Proposed Project occurs.

11. **DISPUTE RESOLUTION FOR PLAN CREATION AND AMENDMENT.** The parties agree and acknowledge that the NRMP and any material amendments to the NRMP will require submission, review, and approval by the CCC after final adoption by the District and City. Nonetheless, the parties agree that each of them would benefit if the NRMP is developed though a meaningful stakeholder process providing for the resolution of as many disagreements as possible prior to NRMP submission to the CCC. This section provides a process by which the Coalition can participate in the creation and amendment of the NRMP.

11.1 **PLAN CREATION AND AMENDMENT.** Where this Agreement contemplates the creation of the NRMP following the Effective Date or an NRMP Amendment, this section will provide a non-exclusive mechanism for the parties to resolve disputes concerning the content of the NRMP and such NRMP Amendments. The standard of review and burden of proof for any disputes arising hereunder shall be the same as those under the California Environmental Quality Act.

11.1.1 **PLAN CREATION AND AMENDMENT INFORMAL NEGOTIATIONS.** Any dispute that arises with respect to the creation or amendment of the NRMP will in the first instance be the subject of informal negotiations between the parties to the dispute. A dispute will be considered to have arisen when one (1) party (the "Disputing Party") sends the other party a written Notice of Dispute. During the informal negotiations, the Disputing Party will identify in writing and with specificity the issue, standard, or proposed requirement which is the subject of the dispute (the "Notice of Dispute"). The period for informal negotiations will not exceed thirty (30) days from the date the Notice of Dispute is received.

11.1.2 **PLAN CREATION AND AMENDMENT FORMAL DISPUTE RESOLUTION, PHASE I.** In the event the Parties cannot resolve a dispute by informal negotiations under Section 11.1.1, the Disputing Party may invoke formal dispute resolution procedures by providing the other parties a written statement of position on the matter in dispute, including, but not limited to, any facts, data, analysis or opinion supporting that position and any supporting documentation relied upon by the Disputing Party (the "Position Statement"). The Position Statement must be transmitted (via electronic mail or verifiable post) within thirty (30) days of the end of informal negotiations, and will be provided to the other parties and to each member of the Wildlife Advisory Group. If informal negotiations are unsuccessful, and the Disputing Party does not invoke formal dispute resolution within thirty (30) days, the position held by the District, City or Agency (the respective public agency involved in such dispute is hereinafter called "Managing Agency") will be binding on the Disputing Party, subject to submission, review, and approval by the CCC.

11.1.2.1 The other parties will submit their position statements ("Opposition Statements"), including facts, data, analysis or opinion in support thereof, to the

Disputing Party and the Wildlife Advisory Group members within thirty (30) days of transmission of the Position Statement.

11.1.2.2 Within twenty-one (21) days after transmission of the Opposition Statement(s), the Wildlife Advisory Group will convene, consider and, within a reasonable period of time thereafter, render its proposed resolution of the dispute. The Wildlife Advisory Group's decision will not be binding upon the Disputing Party, but rather, will be considered purely advisory in nature. The proposed resolution of the Wildlife Advisory Group will be that comprehensive recommendation supported by a majority of Wildlife Advisory Group members after vote, with each member entitled to one vote. The Wildlife Advisory Group's proposal will be transmitted to all parties by an appointed Wildlife Advisory Group member via electronic mail.

11.1.3 **PLAN CREATION AND AMENDMENT FORMAL DISPUTE RESOLUTION, PHASE II.** If any party to this agreement does not accept the advisory decision of the Wildlife Advisory Group, it must invoke the second phase of formal dispute resolution by presenting the dispute to the governing board ("Governing Board") of the Managing Agency (i.e., Board of Port Commissioners or City Council). This phase of the dispute resolution process is initiated by such party providing written notice to the other parties within thirty (30) days of receipt of the Wildlife Advisory Group proposal ("MA Notice"). The MA Notice will include the Position Statement, Opposition Statement, the Wildlife Advisory Group proposal, and any other information such party desires to include. Any supplement to the Opposition Statement will be filed with the Managing Agency within fourteen (14) days. The Governing Board of the Managing Agency will review the transmitted information and within sixty (60) days from receipt of the MA Notice will schedule a public hearing to consider the dispute and within ten (10) days of such public hearing, render a decision. The decision of the Governing Board of the Managing Agency will be final and binding on the Managing Agency but will not bind the members of the Coalition. If the members of the Coalition accept the decision of the Governing Board of the Managing Agency, the decision will dictate the manner in which the dispute is resolved in the NRMP or amendment to the NRMP. Nothing herein will preclude such party from publicly opposing or supporting the Governing Board's decision before the CCC.

12. **DISPUTE RESOLUTION REGARDING NRMP IMPLEMENTATION AND ENFORCEMENT.** Once the CCC approves the NRMP or any NRMP Amendment, the Governing Board will issue a Notice of Adoption with respect to the NRMP or NRMP amendment. Once a Notice of Adoption is issued with respect to the NRMP or NRMP Amendment, this section will be the exclusive mechanism for the parties to resolve disputes arising under, or with respect to implementation or enforcement of, the NRMP including when the NRMP is reviewed during an Adaptive Management Review or Periodic Review and such review does not require an NRMP Amendment. This provision will not be used to challenge the adequacy of the NRMP or an NRMP Amendment after the issuance of a Notice of Adoption with respect thereto. The standard of review and burden of proof for any disputes arising hereunder shall be the same as those under the California Environmental Quality Act.

12.1 **PLAN ENFORCEMENT INFORMAL NEGOTIATIONS.** Any dispute that arises with respect to implementation or enforcement of the NRMP will in the first instance be the subject of informal negotiations between the parties to the dispute. A dispute will be considered

to have arisen when one Disputing Party sends the other party a written Notice of Dispute. During the informal negotiations, the Disputing Party will send a written Notice of Dispute to the other parties specifying the aspect of the NRMP it believes is not being implemented properly and the way in which the Disputing Party believes the NRMP should be implemented according to its terms (the "Notice of Dispute"). The period for informal negotiations will not exceed forty-five (45) days from the date such Notice of Dispute is received.

12.2 **PLAN ENFORCEMENT FORMAL DISPUTE RESOLUTION, PHASE I.** In the event the Parties cannot resolve a dispute by informal negotiations under the preceding section, the Disputing Party may invoke a formal dispute resolution procedure by presenting the dispute to the Governing Board of the Managing Agency by providing the other parties a written statement of position on the matter in dispute, including, but not limited to, any facts, data, analysis or opinion supporting that position and any supporting documentation relied upon by the Disputing Party (the "Position Statement"). The Position Statement must be transmitted (via electronic mail or verifiable post) within thirty (30) days of the end of informal negotiations, and will be provided to the other parties, to each member of the Wildlife Advisory Group. If informal negotiations are unsuccessful, and the Disputing Party does not invoke formal dispute resolution within thirty (30) days, the Managing Agency's position will be binding on the Disputing Party subject to any periodic review and/or approval by the CCC, if required by law.

12.2.1 The other parties will submit their position statements ("Opposition Statements"), including facts, data, analysis or opinion in support thereof, to the Disputing Party, the Wildlife Advisory Group members, and the Governing Board within thirty (30) days of transmission of the Position Statement.

12.2.2 Within forty-five (45) days after transmission of the Opposition Statement(s), the Disputing Party will provide a written notice ("MA II Notice") to the other parties, the Wildlife Advisory Group and the Governing Board. The MA II Notice will include the Position Statement, Opposition Statement, the Wildlife Advisory Group proposal, and any other information the Disputing Party desires to include. Any supplement to the Opposition Statement will be filed with the Managing Agency within fourteen (14) days following receipt of the MA II Notice. The Governing Board will review the transmitted information and within sixty (60) days from receipt of the MA II Notice will schedule a public hearing to consider the dispute and within ten (10) days of such public hearing, render a decision. The decision of the Governing Board will be final and binding on the Managing Agency but will not bind the members of Coalition. If the members of the Coalition accept the decision of the Governing Board of the Managing Agency, the decision will dictate the manner in which the dispute is resolved in the NRMP. If any member of the Coalition disagrees with the decision of the Governing Board, it shall have the right to seek a petition for writ of mandate from the Superior Court of California, San Diego Division.

12.3 **WAIVER OF DEFENSE.** To the extent permitted by law, the District, City and RDA agree that lack of funds shall not be a defense to any claim of failure to adequately fund implementation and enforcement of the adopted NRMP.

13. **BAYFRONT CULTURAL AND DESIGN COMMITTEE FOR PROJECTS LOCATED IN PORT DISTRICT LANDS.**

13.1 District will form a Bayfront Cultural and Design Committee ("BCDC") to advise the District in addressing the design of parks, cultural facilities, and development projects. The public participation process for the BCDC will include broad community representation and will be modeled after the Community Advisory Committee (CAC) process. Membership will include at least one member each from the District, Chula Vista Planning Commission, Design Review Committee, and Resource Conservation Committee.

13.2 The BCDC will advise the District in the establishment of CVBMP design guidelines to address cohesive development and streetscape design standards, walkways and bikeways design to promote safe walking and biking, standards for design of park areas, and cultural facilities but will not address NRMP and Wildlife Habitat Areas design guidelines described above. A minimum of three public meeting/workshops will be held to establish the design guidelines.

13.3 The BCDC will have an opportunity to provide input on the development of any District-sponsored Request for Proposals ("RFP(s)") or Request for Qualifications ("RFQ(s)") for major development projects. District will conduct a stakeholder review of major development projects following completion of the RFP/RFQ selection process and the BCDC will be invited to participate in such review. In addition, BCDC will be invited to participate in stakeholder design review of park and/or cultural facilities within the CVBMP prior to District Staff seeking concept approval from the Board of Port Commissioners.

13.4 The BCDC will have an opportunity to advise and provide input on District-sponsored public art projects proposed for sites within the Proposed Project area through representation on artist/artwork selection panels convened by the District. These project-specific, ad hoc panels will; make recommendations to the District's public art committee and staff regarding acquisitions and exhibitions. The BCDC will be notified of the formation of such selection panels and will be afforded an opportunity to nominate one or more of its members, preferably with art related experience or background, to serve thereon.

14. **PORT MASTER PLAN AMENDMENT**. The District will revise the Port Master Plan Amendment as follows prior to submission to the CCC.

14.1 Consistent with Section 9, above, the Port Master Plan will incorporate the PMPA Cap and an H-3 tower maximum height of 240 feet.

14.2 Add the following clause to the definition for the Industrial Business Park land use designation after the words "active sports facilities" wherever they appear: "...where associated with a business park campus and intended for employees."

14.3 Delete the following sentence from the proposed definition for the Wetlands land use designation: "Development within wetland buffers is limited to Passive uses, such as outlooks, picnic areas, and/or spur-trails. Such improvements should include interpretive and educational opportunities while allowing coastal access in a manner that will ensure the protection and preservation of these sensitive habitat areas."

14.4 Revise the beginning of the third sentence in the last paragraph of the Otay District Planning Subarea description, describing roadways in the Otay District as follows: "A

shoreline pedestrian trail is proposed in the Otay District, and its design will ensure protection of the adjacent sensitive habitat areas..."

14.5 Revise the beginning of the penultimate sentence under the Wildlife Reserve Subarea description as follows: "Other than potential habitat restoration activities, no alterations to the existing intake/discharge channel area are proposed..."

14.6 As part of a separate project and PMP amendment, the District will revise the Marine Sales & Service land use designation on the D Street Fill area to Estuary or Habitat Replacement.

15. **ENERGY**. The parties agree that the development of the Proposed Project offers the District and City a unique opportunity to demonstrate the viability of responsible and sustainable development practices. Accordingly, the parties desire to establish guidelines to govern the future build-out of the programmatic elements of Proposed Project and to ensure that the Proposed Project is comprised of high performance and highly energy-efficient buildings and clean, efficient generation. The parties further agree that the standards in this section are intended to be interpreted broadly and with the flexibility to adapt to new energy technology and evolving building construction and design practices.

15.1 This section will apply to and govern development of all parcels within the Proposed Project area except Parcels HP-5, H-13, H-14 and H-15. The term "Development" will mean the development of an individual parcel within the Proposed Project area.

15.2 To help reduce the need for fossil-fueled power generation, reduce greenhouse gas emissions, and support the California Energy Commission's Loading Order for Electricity Resources, all Developments will achieve a minimum of a fifty (50) percent reduction in annual energy use in accordance with this section.

15.2.1 Each building in each Development will perform at least fifteen (15) percent better than Title 24, Part 6 of the California Building Energy Efficiency Standards ("Title 24") in effect on the date of this agreement. The minimum energy efficiency performance standard adopted by the City is hereinafter described as its "Energy Efficiency Requirement" or "EER". Should revised Title 24 standards be adopted by the State of California, the City's EER at the time a building permit application is submitted for such Development shall apply.

15.2.2 The balance of the reduction in annual energy use required by Section 15.2 will be achieved through the use of any combination of the energy reduction measures described in this Section 15.2.2. To achieve compliance with this section, sponsors of Developments may select one of two paths. The first path is based on Title 24 ("Title 24 Path") and the second is described in Energy and Atmosphere, Credit 1 "Optimize Energy Performance" (Credit EA-/c1) in the US Green Building Council's Leadership in Energy and Environmental Design (LEED) v3 system ("LEED Path"). The definition of the term "Baseline" against which energy reduction will be measured will vary depending on the path selected and is further described in Exhibit 3 to this Agreement.

15.2.2.1 Renewable Energy generated within the boundaries of the Development will be credited toward the energy reduction requirement of Section 15.2. The term

"Renewable Energy" will mean energy derived from the sources described in California Public Resources Code section 25741 (b)1.

15.2.2.2 Renewable Energy generated on one or more sites ("Renewable Energy Sites") within the boundaries of the Proposed Project by the District, City or other third party and fed to the electrical grid or to the Development will be credited toward the energy reduction requirement of Section 15.2. Aggregate energy generated on Renewable Energy Sites may be allocated to an individual Development up to the amount necessary to achieve such Development's compliance with the energy reduction requirement of Section 15.2. Once allocated to a Development, the amount of energy generated by Renewable Energy Sites so allocated may not be further allocated to another Development.

15.2.2.3 Participation in a City of Chula Vista sponsored energy efficiency program provided that the resulting energy reduction may be calculated and verified. The methodology for calculating the amount of the credit toward the energy reduction requirement of Section 15.2 under the Title 24 Path and the LEED Path is described in Exhibit 3.

15.2.2.4 Each Development will develop, implement, and for the life of each Development, maintain a measurement and verification plan ("M&V Plan"). Such participation has been shown to increase the persistence of energy efficiency ("EE") and also to provide a way of recognizing and encouraging the ongoing conservation efforts of occupants and facility managers and will be awarded a waiver for five (5) percent credit against the Baseline to determine compliance with the energy reduction requirement of Section 15.2. The District will include in all leases the requirement to perform an energy audit every three (3) years for the convention centers and hotel Developments over 300 rooms and five (5) years for all other Developments to ensure that all energy systems are performing as planned or corrective action will be taken if failing to meet EE commitments.

15.2.2.5 Participation in one of SDG&E's manual or semi-automatic Demand Reduction (DR) utility rates will be awarded a waiver for three (3) percent credit against the Baseline to determine compliance with the energy reduction requirement of Section 15.2.

15.2.2.6 Participation in one of SDG&E's automatic Demand Reduction (DR) utility rates will be awarded a waiver for five (5) percent credit against the Baseline to determine compliance with the energy reduction requirement of Section 15.2.

15.2.2.7 Incorporation of natural ventilation into design such that at least 75% of the conditioned area is naturally ventilated according to the guidelines set forth in Exhibit 3, and if this benefit was not included in the energy efficiency calculations, the project will be awarded either: a waiver for five (5) percent credit against the Baseline to determine compliance with the energy reduction requirement of Section 15.2; or, a waiver for ten (10) percent credit will be awarded if the natural ventilation system is coupled with an energy or cooling system that does not draw from the grid if and when natural ventilation is not used. This may be prorated if less than 75% of the conditioned area is naturally ventilated.

15.2.3 The parties understand and acknowledge that the energy reduction measures described in Section 15.2.2.1, 15.2.2.2 and 15.2.2.3 for a Development or component of a

Development may be phased in over time to achieve compliance with the energy reduction requirement of Section 15.2 provided such energy reduction measures are completed no later than thirty-six (36) months following issuance of a certificate of occupancy for such Development or such component thereof.

15.2.4 To further incent responsible and sustainable development practices within the boundaries of the Proposed Project, District, City and RDA will consider voluntary commitments to levels of energy reduction in excess of the requirements of Section 15.2, commitment to achievement of a LEED Certification, and/or a "Living Building Challenge" in connection with the selection of respondents in RFP/RFQ processes for Developments within the Proposed Project area.

15.2.5 Within one year following the CCC's approval of a PMP amendment substantially consistent with the Proposed Project, the District will in good faith consider adoption of an ordinance, in a public hearing process, that if approved by the Board of Port Commissioners will require the following:

15.2.5.1 Within six (6) months following adoption of the ordinance and every three (3) years thereafter, the District will conduct an energy efficiency and renewable energy analysis that will:

(1) Assess the feasibility and cost-effectiveness of programs and options to reduce demand on the electric grid from all lands under District's jurisdiction; and,

(2) Include, but not be limited to, an assessment of the potential for reduction in energy use on all land under District's jurisdiction through increases in energy efficiency, demand response, clean renewable and distributed energy generation and other methods and technologies.

15.2.5.2 Upon the completion of each analysis, the District will consider good faith implementation of cost-effective programs and options as part of its commitment to greenhouse gas reductions and global climate change prevention activities consistent with Assembly Bill 32.

15.2.5.3 The results of each analysis will be published on the District's website and received by the District's Board of Port Commissioners in a public forum.

16. **HOUSING IMPACTS.** The Redevelopment Agency will use all Low and Moderate Income Housing funds generated from within the Bayfront Redevelopment Project Area on the production of affordable housing units, inside and/or outside of redevelopment areas, for very low, low and moderate income individuals/families only in areas located west of I-805 in the City of Chula Vista.

17. **THE COALITION'S UNDERTAKINGS.** In consideration of the obligations undertaken and the promises made herein by the District, the City and the RDA, the Coalition hereby covenants and agrees to undertake the following actions:

17.1 To support and to actively lobby, in writing, and where practicable orally, the CCC, the State Lands Commission, the Board of Port Commissioners, and the Chula Vista City Council, to approve the FEIR and the Proposed Project;

17.2 Except as expressly provided herein, to take no action whatsoever, directly or indirectly, whether in writing, orally or otherwise, to oppose any governmental approval, permit (including without limitation, coastal development permits) or other entitlement, or non-material modification or amendment thereof, which is or may be required for the certification of the FEIR or approval of the Proposed Project whether in judicial, administrative or legislative proceedings; and

17.3 Except as expressly provided herein, to provide no assistance whatsoever, directly or indirectly, whether financial, legal or otherwise, to any person, organization or other entity to oppose any governmental approval, permit (including without limitation, coastal development permits) or other entitlement, or non-material modification or amendment thereof, which is or may be required for the certification of the FEIR or approval of the Proposed Project whether in judicial, administrative or legislative proceedings.

17.4 Other than with respect to matters specifically addressed in this Agreement, the FEIR, and as components of the Proposed Project approval, Coalition member organizations shall have the right to fully participate in environmental review and project-approval processes for components of the Bayfront development that require project-level review subsequent to FEIR certification and Proposed Project approval.

17.5 Nothing herein shall be interpreted to preclude Coalition member organizations from fully participating in any agency actions related to the cleanup of contaminated soils and sediments within the Proposed Project boundary.

17.6 Nothing herein shall be interpreted to preclude Coalition member organizations from fully participating in processes related to the decommissioning and demolition of the South Bay Power Plant (including substation relocation).

17.7 Notwithstanding the preceding provisions of this Section 17, in the event the Proposed Project is approved, the Coalition reserves the right to object to any material failure to implement the Proposed Project in compliance with this Agreement, the Mitigation Monitoring and Reporting Program and all applicable laws, regulations or permit requirements.

18. **COALITION SUPPORT FOR FEIR AND PROJECT APPROVAL.** The Coalition member organizations acknowledge and agree that the District, the City, and RDA have appropriately sought and received input from stakeholders concerned with environmental protection, community benefits, and the legal adequacy of the DEIR. The Coalition member organization's agree that the District, City and RDA have incorporated numerous significant and meaningful community recommendations into the FEIR, and that the negotiation process and this Agreement have resulted in a much improved Proposed Project such that it will have the support Coalition member organizations. The parties acknowledge and agree that, although the undertakings of the District, the City and the RDA set forth in this Agreement are intended to provide additional protection to the natural resources and environment above and beyond that required by CEQA and the other federal, state and local laws and regulations which apply to the Proposed Project, said

undertakings will constitute mitigation measures which will be included in the FEIR and the MMRP adopted by the District, the City and the RDA if the Proposed Project is approved and which will be enforceable as mitigation measures pursuant to this Agreement.

19. **IDENTIFICATION OF GRANTS.** Coalition will use reasonable best efforts to identify, and at each member organization's sole discretion to support, grants and other funding options to assist the District, City, and RDA meet their obligations under this Agreement.

20. **NO LIMITATION ON THE DISTRICT'S, CITY'S OR RDA'S DISCRETION.** The parties acknowledge and agree that nothing in this Agreement will be construed as circumscribing or limiting the District's, City's or RDA's discretion with respect to the environmental review required by CEQA and that the District, City and RDA (as applicable), in their sole and absolute discretion, may elect not to certify or approve the FEIR or not to approve the Proposed Project, or may select an alternative, including the alternative of not going forward with the Proposed Project, or adopt mitigation measures or conditions which they determine are necessary and appropriate to reduce or avoid any potential environmental impact of the Proposed Project or to comply with any applicable law or regulation. In the event that the District, City or RDA elect not to certify or approve the FEIR or not to approve the Proposed Project, any such action or inaction will not constitute a breach of the District's, City's or RDA's obligations under this Agreement and this Agreement will terminate and will be of no further force and effect.

21. **THE DISTRICT'S, CITY'S AND RDA'S UNDERTAKINGS.** The undertakings of the District, City and RDA set forth in Sections 3 through 10 and 13 through 16 of this Agreement provide additional mitigation measures that will be incorporated into the FEIR and the MMRP, and will be implemented by the District, City and RDA and may be enforced by the Coalition or any member organization as mitigation measures. The Parties further agree that the Coalition or any member organization have standing to enforce mitigation measures pursuant to Code of Civil Procedure section 1085 and Public Resources Code section 21081.6(b).

22. **RESERVATION OF DISCRETION.** The contents of this Agreement notwithstanding, District, City and RDA reserve their discretion to approve or disapprove all actions which require by law the exercise of discretion and which District, City and RDA cannot lawfully be committed to by contract. Such reservation of discretion will apply to all contemplated legislative and quasi-judicial actions including, without limitation, approval of land use entitlements, CEQA compliance, the exercise of eminent domain, code enforcement and the making of findings and determinations required by law.

23. **JOB QUALITY.** District agrees to comply with the requirements contained in the Covenants and Agreements of District With Respect to Job Quality attached to this Agreement as Exhibit 4. For the avoidance of doubt, the parties to this Agreement acknowledge and agree that the covenants and agreements contained in Exhibit 4 apply solely and exclusively to District and will have no force or effect on the City or the RDA.

24. **MISCELLANEOUS.**

24.1 This Agreement may be pleaded by any party hereto as a full and complete defense to and may be used as the basis for an injunction against any action, suit, claim or other

proceeding of any type which may be prosecuted, initiated or attempted in violation of the terms hereof.

24.2 Each party signing this Agreement jointly and severally represents and warrants that it has full authority to obligate the party or parties on whose behalf it is signing and that no further action or authorization is necessary to execute this Agreement on behalf of such party. The Coalition specifically represents and warrants that it has full authority to obligate its members, that no further action is necessary for the Coalition to make this Agreement on behalf of itself and each of its members, and that the following organizations constitute all of the members of the Coalition: Environmental Health Coalition, San Diego Audubon Society, San Diego Coastkeeper, Coastal Environmental Rights Foundation, Southwest Wetlands Interpretative Association, Surfrider Foundation, San Diego Chapter and Empower San Diego.

24.3 The parties have read all of this Agreement, fully understand the same and have consulted with their attorneys regarding this Agreement. The parties hereto are represented by independent counsel, with whom each party has fully discussed the terms and consequences of this Agreement. The Coalition and its members are represented by the Coast Law Group, LLP, 1140 South Coast Highway 101, Encinitas, California; the District is represented by the Office of the Port Attorney, 3165 Pacific Highway, San Diego, California and Hogan Guiney Dick, LLP, 225 Broadway, Suite 1900, San Diego, California; and the City and the RDA are represented by the Office of the City Attorney, 276 Fourth Avenue, Chula Vista, California. The parties hereto acknowledge that they execute this Agreement of their own free will and under no threat, menace, coercion or duress of any kind from any party. The parties further acknowledge that they execute this Agreement acting on their independent judgment and upon the advice of their respective counsel, without any representation, express or implied, of any kind from any other party, except as specifically set forth herein.

24.4 In the event it becomes necessary for any party to obtain the services of an attorney to enforce the provisions of this Agreement against any party who has breached any obligation set forth herein, the prevailing party in any proceeding will be entitled to recover all its attorneys' fees and costs incurred.

24.5 This Agreement constitutes the entire fully integrated written agreement among the parties with respect to the subject matter of this Agreement and may not be modified or waived except by a writing duly executed on behalf of the party to be bound by the waiver or modification.

24.6 If any part of this Agreement is held by a court of competent jurisdiction to be invalid, void or unenforceable, such decision will not affect the validity of any remaining portion of this Agreement and the remainder will stand in full force and effect.

24.7 This Agreement is executed and delivered within the State of California and will be construed and covered by the laws of the State of California.

24.8 This Agreement will be binding upon and will inure to the benefit of the parties hereto and to all members, beneficiaries, elected and appointed officials, officers, directors, employees, attorneys, agents, successors, affiliates, heirs and assigns of any party.

24.9 This Agreement may be executed in one or more counterparts and, when executed by each of the parties signatory hereto, said counterparts will constitute a single valid Agreement even though each of the signatory parties may have executed separate counterparts hereof.

IN WITNESS WHEREOF, this Chula Vista Bayfront Master Plan Settlement Agreement is executed on the date(s) set forth below.

Dated: May 5, 2010

ENVIRONMENTAL HEALTH COALITION

By: Executive Director

Diane Takvorian

Dated: May 5, 2010

SAN DIEGO AUDUBON SOCIETY

By: Conservation Chair

James A. Peugh

Dated: May 5, 2010

SAN DIEGO COASTKEEPER

By: Executive Director

Bruce Reznik

Dated: May 5, 2010

COASTAL ENVIRONMENTAL RIGHTS FOUNDATION

By: Marco Gonzalez, Legal Director

Dated: May 5, 2010

SOUTHWEST WETLANDS INTERPRETATIVE ASSOCIATION

By: President

Michael McCoy

Dated: May 5, 2010

THE SURFRIDER FOUNDATION (SAN DIEGO CHAPTER)

By: Chairman

Manase Mansur

[SIGNATURES CONTINUED NEXT PAGE]

Dated: May 5, 2010

EMPOWER SAN DIEGO

By: Program Coordinator

Emily Serafy Cox

Dated: May 11, 2010

SAN DIEGO UNIFIED PORT DISTRICT

By: Charles D. Warster
Executive Director

Dated: May 13 2010

CITY OF CHULA VISTA

By: City Manager

James D. Sandoval

Dated: May 13 2010

REDEVELOPMENT AGENCY OF THE CITY OF CHULA VISTA

By: Executive Director

James D. Sandoval

Attest:

Donna Norris

Donna Norris, City Clerk

Approved as to form and legality:

for

Bart C. Miesfeld,
City Attorney/Agency General Counsel

Approved as to form and legality:

Duane E. Bennett

Port Attorney, DUANE BENNETT

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AERIAL SOURCE: DIGITAL GLOBE, MARCH 2007

- National Wildlife Refuge (San Diego Bay Unit)*
- Sweetwater Marsh National Wildlife Refuge*
- City of Chula Vista LCP Open Space Land Use Designation
- City of Chula Vista S-4 100 ft. No-Touch Buffer
- CVBMP Boundary
- Proposed Navigation Channel

Port Master Plan - Planning District 7
Conservation Land and Water Designations

- Estuary
- Habitat Replacement
- Wetland

Exhibit 1
Wildlife Habitat Areas

(Defined by § 3.1 of the Chula Vista Bayfront Master Plan Settlement Agreement; the agreement prevails over any conflict with this exhibit.)

*National Wildlife Refuge lands are included in the definition of Wildlife Habitat Areas for the sole purpose of addressing adjacency impacts and not for the purpose of imposing affirmative resource management obligations with respect to the areas within the National Wildlife Refuge lands.

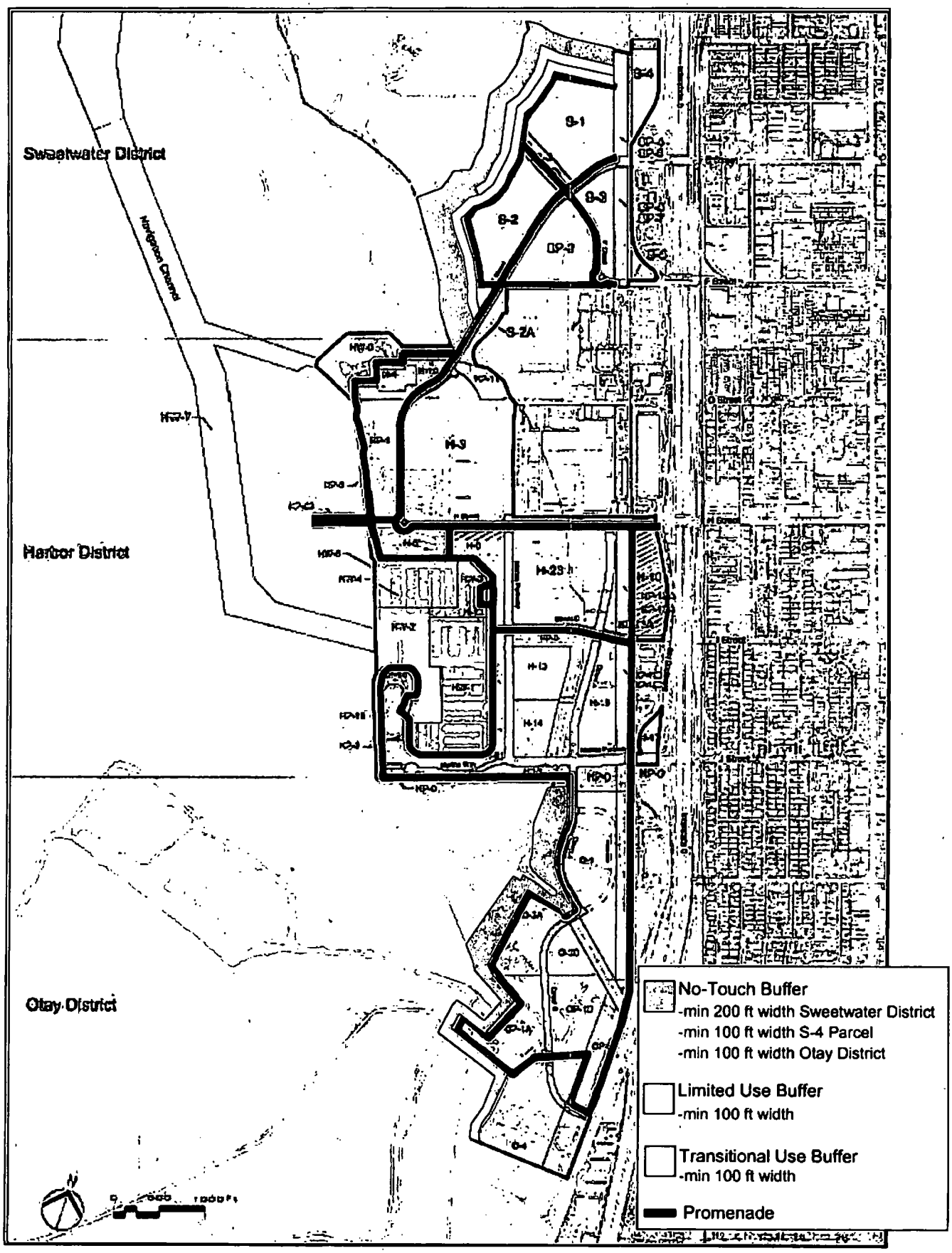

Exhibit 2 – Buffer Areas

(Defined by § 4.1.3 and 4.1.4 of the Chula Vista Bayfront Master Plan Settlement Agreement; the agreement prevails over any conflict with this exhibit)

EXHIBIT 3

Exhibit 3 outlines the metholodogies for determing that the goals of the Energy Section are met. The Sample Worksheets are for illustration purposes, to provide a format which may be used both by Developments and by the City of Chula Vista's Building Department. Note that the Energy Section outlines requirements and approaches for projects which will be subject to future codes, regulations, tariffs, and technologies, all of which are subject to change. When clarifications are needed, they will be provided by the City of Chula Vista.

Baseline. The term "Baseline" refers to the amount of energy against which the energy reduction will be measured.

SAMPLE Worksheets. Sample worksheets are provided as suggested approaches. Actual worksheets for calculating the energy requirements should be coordinated with the City of Chula Vista Building Department.

Title 24 Path. Title 24 language refers to the "Standard Budget" and "Proposed Budget." The Whole Building Performance Method, which generates the Standard and Proposed Energy Budgets, is specifically for energy uses within a conditioned building, and does not include lighting which is in Interior Unconditioned Spaces or lighting which is outside. However, for the purposes of the Energy Section, this lighting energy will be added to the energy budgets for the conditioned building, and the combined energy uses will become the Baseline for the "Title 24 Path." Each of the various energy uses will be converted into Site kBtu, except for the final 5% energy reduction waiver allowed for Ongoing Measurement and Verification.

LEED Path. LEED language refers to the "Baseline Design" and "Proposed Design." The LEED Path Baseline is likely to be different and higher than the Title 24 Path Baseline because LEED counts all of the energy uses within the site boundary, some of which are not counted by Title 24. However, LEED is also likely to be better and more comprehensive in calculating overall energy performance features, such as district thermal plants, combined heat and power, natural ventilation, efficiencies in process loads, aggregating multiple buildings, and the benefits of renewable energy. Each of the various energy uses will be converted into dollars ($), except for the final 5% energy reduction waiver allowed for Ongoing Measurement and Verification.

If the LEED Path is chosen, the Development may be subject to an additional fee to the City of Chula Vista for a 3rd party plan check by an experienced LEED reviewer acceptable to the City. Recognizing that LEED Templates may not be complete at the time of the initial Building Department submittals, draft Templates may be used, at the discretion of the reviewer.

Natural Ventilation. When using Natural Ventilation (NV) to qualify as an energy reduction feature, the Development may qualify for a waiver of up to 10% if at least 75% of the area that would normally be cooled relies solely on natural ventilation strategies to help maintain comfortable temperatures. Pro-rations are possible.

City of Chula Vista Sponsored Energy Efficiency Program. Refer to the appropriate City ordinances for details on this program.

Measurement and Verification. Each Development shall develop and implement an ongoing Measurement and Verification (M&V) Plan consistent with the International Performance Measurement and Verification Protocol (IPMVP) Volume III, Concepts and Options for Determining Energy Savings in New Construction, April 2003. The Development may choose either Option B or Option D. If the LEED Path is chosen, the M&V Plan should be consistent with Credit EAc5, except that LEED only requires one year of implementation, and the Energy Section of this Agreement requires M&V to be ongoing.

Demand Response Tariffs. Developments which enroll in SDG&E Demand Response rate tariff(s) which are designed to reduce the load on the electric grid during critical times may be awarded up to a 5% waiver.

EXHIBIT 3

SAMPLE Worksheet A: Title 24 Path

Name: Example Development

Description[1]	Source of Info (Attachments)	Input Standard	Input Proposed	Typical Units of Measure	Convert to Site kbtu	Standard = Baseline	Proposed	Units	Minimum % Reduction	Actual % Reduction
15.2.1 MINIMUM EFFICIENCY										
Title 24 Whole Building Performance	T24 UTIL-1, Part 1			Source TDV kbtu/sf-yr					15%	
15.2.2 CALCULATE BASELINE AND REDUCTIONS										
A. Energy Uses										
T24 Electricity	T24 UTIL-1, Part 2			Site KWH/year	3.413	-	-	kBtu		
T24 Gas	T24 UTIL-1, Part 2			Site Therms/year	100.000	-	-	kBtu		
T24 Lighting Outside and Uncond	Worksheet A-LTG	-	-	Site KWH/year	3.413	-	-	kBtu		
A. Summary of Efficiency of End Uses						-	-	kBtu		
B. Renewable Energy Contributions										
PV: within Development	CSI calculation or PV-Watts[2]	n/a		Site KWH output/year	3.413	n/a	-	kBtu		
PV: Credited from Project		n/a		Site KWH output/year	3.413	n/a	-	kBtu		
Solar Thermal: within Development	F-Chart or equal	n/a		Site kbtu offset/year	1.000	n/a	-	kBtu		
Other	as appropriate	n/a		as appropriate		n/a				
B. Combined Renewable Reductions										
C. Natural Ventilation	Worksheet C						0% to 10%			
D. Chula Vista Program Savings										
Verified Electricity Savings	Confirm with Program Administrator	n/a		Site KWH	3.413		-	kBtu		
Verified Gas Savings		n/a		Site Therms	100.000		-	kBtu		
D. CV Program Combined Reduction										
E. Ongoing Measure & Verify	Worksheet E						Required			
F. Demand Response Tariff	Worksheet F						0% to 5%			
TOTAL REDUCTION FROM BASELINE (Must be at least 50% Reduction)										**0.0%**

NOTES TO WORKSHEET A

Note 1: If the Development includes more than one building, then use multiple Worksheets, or, add backup calculations or line items to this spreadsheet, as most appropriate.

Note 2: Final photovoltaic design and output informatio shall use industry standard software, including at least site location, array orientation, array tilt, and system efficiency. California Solar Initiative (CSI) rebate calculations and PV-Watts are examples of acceptable software.

EXHIBIT 3

Worksheet A-LTG: Lighting Outside and in Interior Unconditioned Spaces

Name: Example Development

Category[1]	Source of Info (Attachments)	T24 Allowed Watts	Proposed Watts	Occupancy	hours /day[2]	Days /year	Hours /year	Standard KWH/yr	Proposed KWH/yr
Unconditioned spaces	T24 LTG Forms						-	-	-
Unconditioned spaces	T24 LTG Forms						-	-	-
Unconditioned spaces	T24 LTG Forms						-	-	-
Unconditioned spaces	T24 LTG Forms						-	-	-
Unconditioned spaces	T24 LTG Forms						-	-	-
General Site Illumination (Tradable)	T24 OLTG Forms						-	-	-
General Site Illumination (Tradable)	T24 OLTG Forms						-	-	-
General Site Illumination (Tradable)	T24 OLTG Forms						-	-	-
General Site Illumination (Tradable)	T24 OLTG Forms						-	-	-
General Site Illumination (Tradable)	T24 OLTG Forms						-	-	-
Specific Applications (Non-Tradable)	T24 OLTG Forms						-	-	-
Specific Applications (Non-Tradable)	T24 OLTG Forms						-	-	-
Specific Applications (Non-Tradable)	T24 OLTG Forms						-	-	-
Signs (Non-Tradable)	T24 OLTG Forms						-	-	-
Signs (Non-Tradable)	T24 OLTG Forms						-	-	-
Totals (Subtotals are inputs to Worksheet A)								-	-

NOTES TO WORKSHEET A-LTG

Note 1: If more lines are needed, create a spreadsheet in similar format, and enter above, as appropriate.

Note 2: For average runtimes, use the hours in this chart, unless proposer demonstrates to the Bldg Department's satisfaction that a different value should be used.

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EXHIBIT 3

SAMPLE Worksheet B: LEED Path

Name: Example Development

Description	Source of Info (Attachments)	Standard or Baseline	Proposed	Typical Units of Measure	Virtual Rate	Baseline	Proposed	Units	Minimum % Reduction	Actual % Reduciton	
15.2.1 MINIMUM EFFICIENCY											
Title 24 Whole Building Performance	T24 UTIL-1, Part 1			Source TDV kbtu/sf-yr					15%		
15.2.2 CALCULATE BASELINE AND REDUCTIONS											
A. Energy Costs: LEED Performance Rating Method (PRM) EAp2/c1 Letter Template											
Conditioned Building(s)	LEED EAp2/c1 Letter Template	*Included*	*Included*								
Other energy uses on site		*Included*	*Included*								
Lighting: Outside and Uncond		*Included*	*Included*								
Onsite Renew Energy: Development		*Included*	*Included*								
Campus Renew Energy: Project		*Included*	*Included*								
Other		*Included*	*Included*								
Natural Ventilation		May be included in LEED EAp2/c1, OR, use Worksheet C									
Electricity (Summary)	LEED EAp2/c1 Section 1.8 Summary[1]			kWh	#DIV/0!			Site $			
Natural Gas (Summary)				therms	#DIV/0!			Site $			
A. Summary of Efficiency of Energy Costs						$ -	$ -	Site $			
B. Combined Renewable Reductions	Included in EAp2/c1 above										
C. Natural Ventilation	May be included in LEED EAp2/c1 above, OR, use Worksheet C										
Alternate:	Worksheet C						0% to 10%				
D. Chula Vista Program Savings	Confirm with Program Administrator										
Verified Electricity Savings				Site KWH	#DIV/0!		#DIV/0!	Site $			
Verified Gas Savings				Site Therms	#DIV/0!		#DIV/0!	Site $			
D. CV Program Combined Reduction											
E. Ongoing Measure & Verify	LEED EAc5. See Worksheet E.						Required				
F. Demand Response Tariff	Worksheet F						0% to 5%				
TOTAL REDUCTION FROM BASELINE (Must be at least 50% Reduction)											**0.0%**

NOTES TO WORKSHEET B

Note 1: LEED EAp2/c1 Letter Template: Section 1.8, "Energy Cost and Consumption by Energy Type - Performance Rating Method Compliance Table"

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EXHIBIT 3

SAMPLE Worksheet C: Natural Ventilation

Name: Example Development

When using Natural Ventilation (NV) to qualify as an energy reduction feature for this Agreement, the Development may qualify for a waiver if at least 75% of the area that would normally cooled includes effective natural ventilation strategies to help maintain comfortable temperatures. A 5% waiver is granted if the area is also served by an energy or cooling system drawing energy from the grid. A 10% waiver is granted if the area is not served by an energy or cooling system drawing from the grid. The waiver may be prorated if the area is less than 75%. Final determination of normally cooled areas are at the discretion of the Building Department. For example, in CA Climate Zone 7, spaces such as warehouses and kitchens do not normally have electric cooling.

Two approaches are possible:

1. A Development may use a performance approach, such as macro-flow or Computational Fluid Dynamics (CFD) modeling, to design and confirm the maintenance of comfort using natural ventilation techniques.

2 . As an alternate, the prescriptive calculations outlined in the Collaborative for High Performance Schools (CHPS) may be used. CHPS identifies an approach to achieving ventilation strategies which are likely to be effective in helping to maintain interior comfort when outside conditions are moderate. Even though the CHPS program targets school campuses, the approach is useful for many occupancies. It is publicly available at www.chps.net. Suggested references are from CHPS 2006 Volume II Best Practices Manual - Design, HVAC Guidelines, Sections TC 13 (Cross Ventilation), TC-14 (Stack Ventilation), and TC-15 (Ceiling Fans).

The designer should follow the CHPS guidelines. To satisfy the prescriptive approach, the following table may be used. Inlets and Outlets should each be at least 4% of the floor area of the space, totalling at least 8%. Ideally they are on opposite sides, but at a minimum may be on perpendicular walls. Inlets are to be on the side which is typically windward, and lower than outlets.

					Prescriptive: Inlet (Windward)			Prescriptive: Outlet (Leeward)				
Space Name	Source of Cooling	Conditioned Floor Area (CFA)	Qualifying CFA	Performance or Prescriptive Calculation	Area	Orientation	% CFA	Area	Orientation	% CFA	higher than inlet	opposite or corner wall
Space A	NV with grid cooling											
Space B	NV with grid cooling											
Space C	NV with grid cooling											
Subtotal:			0									
Space D	NV only											
Space E	NV only											
Space F	NV only											
Subtotal:			0									
Other spaces	no NV											
Total Normally Conditioned Floor Area		-										

CFA which is Naturally Ventilated, with Grid Cooling	0	
Energy Reduction Allowed		
CFA Which is Naturally Ventilated Only	0	
Energy Reduction Allowed		
Combined Energy Reduction Allowed		

CFA: NV + grid	Reduction
0%	0%
15%	1%
30%	2%
45%	3%
60%	4%
75%	5%

CFA: NV Only	Reduction
0%	0%
15%	2%
30%	4%
45%	6%
60%	8%
75%	10%

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EXHIBIT 3

SAMPLE Worksheet D: Chula Vista Energy Efficiency Program

Name: Example Development

Refer to the appropriate City ordinances for details on this program, including, but not limited to:

City of Chula Vista Municipal Code Section 15.12 "Green Building Standards Ordinance"
City of Chula Vista Municipal Code Section 15.26.030 "Increase Energy Efficiency Ordinance"

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EXHIBIT 3

SAMPLE Worksheet E: Ongoing Measurement & Verification (M&V)

Name: Example Development

Develop and implement a Measurement and Verification (M&V) Plan consistent with the International Performance Measurement and Verification Protocol (IPMVP) Volume III, Concepts and Options for Determining Energy Savings in New Construction, April 2003. The Development may choose either Option B or Option D.
M&V shall be on-going for the length of the lease.
Tenants shall have sub-meters for electricity. Sub-meters for gas and water should also be considered, but are not required.
The plan shall include a process for corrective action if energy performance goals are not achieved as planned. Refer to ASHRAE Guideline 14 for suggested ranges of discrepancy, appropriate to the meter, magnitude of energy uses, and overall plan.
If the LEED Path is chosen, the M&V Plan should be consistent with EAc5, except that LEED only requires one year of implementation, and the Energy Section of this Agreement requires M&V to be ongoing.

EXHIBIT 3

SAMPLE Worksheet F: Demand Response Tariffs

Name: Example Development

If the development chooses an SDG&E Demand Response tariff in which the customer has the option to manually or semi-automatically reduce electricity use when requested by the utility, then it will be awarded a 3 % waiver towards the overall energy reduction.

If the development chooses an SDG&E Demand Response tariff in which the utility can automatically reduce the customer's electricity use, then it will be awarded a 5 % waiver towards the overall energy reduction.

Meter(s)	Tariff	Manual or Semi-Automatic: Customer Controlled: 3%	Automatic, or Utility Controlled: 5%	% Reduction Awarded

EXHIBIT 3

Links for References used in EXHIBIT 3

Title 24 Building Energy Efficiency Standards	www.energy.ca.gov/title24/
Collaborative for High Performance Schools (CHPS) CHPS 2006 Volume II Best Practices Manual - Design	www.chps.net/dev/Drupal/node/31
IPMVP, Volume III, Concepts and Options for Determining Energy Savings in New Construction, April 2003.	www.evo-world.org Products & Services / IPMVP / Applications Volume III
Leadership in Energy and Environmental Design (LEED™)	www.usgbc.org
City of Chula Vista sponsored energy efficiency program	
Living Building Challenge	www.ilbi.org

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Exhibit 4

Covenants and Agreements of District With Respect to Job Quality

In evaluating responses to requests for qualifications and requests for proposals ("RFQ/RFPs") issued by the District with respect to the master development and operation of the Resort and Conference Center ("RCC") on Parcel H-3 of the Chula Vista Master Plan ("CVBMP") area and the entities with which the District contracts for the development and operation of the RCC, the District will give considerable weight and preference to any proposal submitted in response to the RFQ/RFP which:

1. With regard to both RCC operations and RCC construction, effectively commits to reduce or to eliminate the risk of labor strife which would (i) have an adverse financial effect on the District's proprietary interest in the on-time and on-budget completion and long-term operations of the RCC or (ii) jeopardize or delay achievement of the District's policy objectives with respect to the CVBMP;

2. Commits to a local jobs policy that will impose the following criteria on the construction workforce for the project:

   a. Not less than 70% of total work hours by residents of San Diego County; and
   b. Not less than 10% of total work hours by disadvantaged workers;

3. Includes a stated preference for contractors or subcontractors headquartered in, or for five years prior to the bid has maintained an office in, San Diego County; and

4. Includes a stated preference for developers utilizing a prequalification process to ensure use of reputable contractors and subcontractors on the RCC which relies on contractor/subcontractor financial, organizational, historic, claims, safety and performance information similar to the information described in Part II and Part III of the publication titled Pre-Qualification of Contractors Seeking to Bid on Public Works Projects, published by the California Department of Industrial Relations in 1999.

The foregoing language will be included in RFQ/RFPs issued by the District with respect to the RCC.

San Diego Unified Port District

Chula Vista Bayfront

Development Policies

July 2012

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Table of Contents

Exhibits

CHULA VISTA BAYFRONT
Development Policies

PLANNING AND DEVELOPMENT POLICIES

The policies below form the Chula Vista Bayfront Master Plan Development Policies (Plan). These policies are taken from the adopted and approved plans, certified environmental documents, enforceable settlement agreements, required mitigation measures, and conditions included in the approval process. They are meant to bring together, in one document, the conditions and policies that will apply to and guide the development of the Bayfront. This document has been incorporated by reference into Planning District 7, Chula Vista Bayfront, of the Port Master Plan.

1. Environmental Management Policies

Policy 1.1: In recognition of the sensitivity of the natural resources and the importance of protection, restoration, management and enforcement in protecting those resources, the District and City will prepare a Natural Resources Management Plan (NRMP) for the Chula Vista Bayfront. The NRMP will be designed to achieve the Management Objectives (defined below) for the Wildlife Habitat Areas. The NRMP will be an adaptive management plan, reviewed and amended as necessary by the District and City in coordination with the Wildlife Advisory Group. The Wildlife Advisory Group shall be formed to advise the District and City in the creation of a NRMP, cooperative management agreements, Adaptive Management Review and any related wildlife management and restoration plans or prioritizations. Because it will be frequently revised and updated, the NRMP has not been incorporated into the Port Master Plan (PMP). If there are any conflicts between the NRMP and any portion of the PMP, the provisions of the PMP shall control and take precedence.

Policy 1.2: A NRMP will be created as a condition of this Plan and will meet the management objectives below.

Policy 1.3: Taking into consideration the potential changes in functionality of Wildlife Habitat Areas due to rising sea levels, the NRMP will promote, at a minimum, the following objectives ("Management Objectives") for the Wildlife Habitat Areas:

a) Long term protection, conservation, monitoring, and enhancement of: 1) Wetland habitat, with regard to gross acreage as well as ecosystem structure, function, and value; 2) Coastal sage and coastal strand vegetation; and 3) Upland natural resources for their inherent ecological values, as well as their roles as buffers to more sensitive adjacent wetlands.
b) Upland areas in the Sweetwater and Otay Districts will be adaptively managed to provide additional habitat or protection to create appropriate transitional habitat during periods of high tide and taking into account future sea level rise.
c) Preservation of the biological function of all Bayfront habitats serving as avifauna for breeding, wintering, and migratory rest stop uses.
d) Protection of nesting, foraging, and rafting wildlife from disturbance.
e) Avoidance of actions within the Chula Vista Bayfront area that would adversely impact or degrade of water quality in San Diego Bay or watershed areas or impair efforts of other entities for protection of the watershed.
f) Maintenance and improvement of water quality where possible and coordination with other entities charged with watershed protection activities.

Wildlife Habitat Areas is defined below and are depicted on Exhibit 1:

- All National Wildlife refuge lands, currently designated and designated in the future, in the South San Diego Bay and Sweetwater Marsh National Wildlife Refuge Units. These areas are included in the definition of Wildlife Habitat Areas for the sole purpose of addressing adjacency impacts and not for the purpose of imposing affirmative resource management obligations with respect to the areas within the National Wildlife Refuge lands.
- All District designated lands and open water areas in the Conservation Land Use Designations of Wetlands, Estuary, and Habitat Replacement as depicted in the Precise Plan for Planning District 7.
- Parcels 1g and 2a from the City's Bayfront Specific Plan.

Policy 1.4: In addition to the standards described above, the NRMP will include:

a) All elements which address natural resource protection in the Final Environmental Impact Report Mitigation Monitoring and Reporting Program (MMRP) including but not limited to those which assign responsibility and timing for implementing mitigation measures consistent with the City's Multiple Species Conservation Program (MSCP) Subarea Plan.
b) Pertinent sections of the MSCP Subarea Plan.
c) References to existing District policies and practices, such as Predator management programs and daily trash collections with public areas and increase service during special events.
d) Establishment of design guidelines to address adjacency impacts, such as storm water, landscape design, light and noise and objectives as discussed in this Plan.
e) Establishment of baseline conditions and management objectives.
f) Habitat enhancement objectives and priorities.

Policy 1.5: The NRMP will be a natural resource adaptive management and monitoring plan initially prepared in consultation with the Wildlife Advisory Group and regularly reviewed and amended in further consultation with the Wildlife Advisory Group. Periodic Review will address, among other things, monitoring of impacts of development as it occurs and monitoring the efficacy of water quality improvement projects (if applicable) and management and restoration actions needed for resource protection, resource threats, management (i.e., sea-level rise, trash, window bird strikes, lighting impacts, bird flushing, water quality, fireworks, human-wildlife interface, education and interpretation programs, public access, involvement, and use plan, management of the human-wildlife interface, wildlife issues related to facilities, trails, roads, overlooks planning, and watershed coordination) and other issues affecting achievement of Management Objectives and related to Adaptive Management Review.

2. Wetlands

Policy 2.1: The biological productivity and the quality of wetlands shall be protected and, where feasible, restored.

Policy 2.2: Wetlands shall be defined and delineated consistent with the Coastal Act and the Coastal Commission Regulations, and shall include, but not be limited to, lands within the coastal zone which may be covered periodically or permanently with shallow water and include saltwater marshes, freshwater marshes, open or closed brackish water marshes,

swamps, mudflats, and fens. Any unmapped areas that meet these criteria are wetlands and shall be accorded all of the protections provided for wetlands in the PMP.

Wetlands shall be further defined as land where the water table is at, near, or above the land surface long enough to promote the formation of hydric soils or to support the growth of hydrophytes, and shall also include those types of wetlands where vegetation is lacking and soil is poorly developed or absent as a result of frequent and drastic fluctuations of surface water levels, wave action, water flow, turbidity or high concentrations of salts or other substances in the substrate. Such wetlands can be recognized by the presence of surface water or saturated substrate at some time during each year and their location within, or adjacent to, vegetated wetlands or deep-water habitats.

Policy 2.3: Where the required initial site inventory indicates the presence or potential for wetland species or other wetland indicators, the District shall require the submittal of a detailed biological study of the site, with the addition of a delineation of all wetland areas on the project site. Wetland delineations shall be based on the definitions contained in Section 13577(b) of Title 14 of the California Code of Regulations.

Policy 2.4:

a) The diking, filling, or dredging of open coastal waters, wetlands, estuaries, and lakes shall be permitted in accordance with other applicable provisions of this Plan, where there is no feasible less environmentally damaging alternative, and where feasible mitigation measures have been provided to minimize adverse environmental effects, and shall be limited to the following:

   (1) New or expanded port, energy, and coastal-dependent industrial facilities, including commercial fishing facilities.
   (2) Maintaining existing, or restoring previously dredged, depths in existing navigational channels, turning basins, vessel berthing and mooring areas, and boat launching ramps.
   (3) In open coastal waters, other than wetlands, including streams, estuaries, and lakes, new or expanded boating facilities and the placement of structural pilings for public recreational piers that provide public access and recreational opportunities.
   (4) Incidental public service purposes, including but not limited to, burying cables and pipes or inspection of piers and maintenance of existing intake and outfall lines.
   (5) Mineral extraction, including sand for restoring beaches, except in environmentally sensitive areas.
   (6) Restoration purposes.
   (7) Nature study, aquaculture, or similar resource dependent activities.

Policy 2.5: Where wetland fill or development impacts are permitted in wetlands in accordance with the Coastal Act and any applicable PMP policies, mitigation measures shall include creation of wetlands of the same type lost. Adverse impacts will be mitigated at a ratio of 4:1 for all types of wetland, and 3:1 for non-wetland riparian areas.

Replacement of wetlands on-site or adjacent to the project site, within the same wetland system, shall be given preference over replacement off-site or within a different system. Areas subjected to temporary wetland impacts shall be restored to the pre-project condition at a 1:1 ratio. Temporary impacts are disturbances that last less than 12 months and do not result in the physical disruption of the ground surface, death of significant vegetation within the development footprint, or negative alterations to wetland hydrology.

Policy 2.6: Wherever wetlands are identified, a buffer of at least 100 feet in width from the upland edge of wetlands and at least 50 feet in width from the upland edge of riparian habitat shall be established. In some unusual cases, smaller buffers may be appropriate, when conditions of the site as demonstrated in a site-specific biological survey, the nature of the proposed development, etc. show that a smaller buffer would provide adequate protection. In such cases, the California Department of Fish and Game (CDFG) must be consulted and agree that a reduced buffer is appropriate and the District, or Commission on appeal, must find that the development could not be feasibly constructed without a reduced buffer. However, in no case shall the buffer be less than 50 feet.

Policy 2.7: At the time of adoption of the Chula Vista Bayfront plan, the seasonal ponds designated "Former Industrial Areas in Process of Remediation" on O-1 and O-4 have been identified as wetland habitat. These areas will be preserved and infrastructure rerouted to preserve the resource. Site-specific studies to assess the extent and quality of natural resources on the site will be required at the time development is proposed.

3. Climate Change and Sea Level Rise:

"Sea level rise" means a change in the mean level of the ocean. Accepted sea level rise scenarios shall be based on best available science (such as the October 2010 State of California Sea Level Rise Interim Guidance Document by the California Climate Action Team) and are presently projected at a range of approximately 10 to 17 inches for 2050.

Policy 3.1: Buffers within the Port Master Plan area have been designed to accommodate potential areas of future sea level rise inundation and are identified on Exhibit 2. The Chula Vista Bayfront plan also provides for an adequate amount of habitat migration within the identified buffer areas based on a projected sea level rise.

In cases where buffers have not yet been established, a buffer of at least 100 feet in width from the upland edge of wetlands and at least 50 feet in width from the upland edge of riparian habitat shall be established. Buffers should take into account and adapt for rises in sea level by incorporating wetland migration areas or other sea level rise adaptation strategies as appropriate. The CDFG and U.S. Fish and Wildlife Service (USFWS) must be consulted in such buffer determinations and, in some cases, the required buffer, especially for salt marsh wetlands, could be greater than 100 feet. Uses and development within buffer areas shall be limited to minor passive recreational uses, with fencing, desiltation or erosion control facilities, or other improvements deemed necessary to protect the habitat, to be located in the upper (upland) half of the buffer area; however, water quality features required to support new development shall not be constructed in wetland buffers. All wetlands and buffers identified and resulting from development and use approval shall be permanently conserved or protected through the application of an open space easement or other suitable device. All development activities, such as grading, buildings and other improvements in, adjacent to, or draining directly to a wetland must be located and built so they do not contribute to increased sediment loading of the wetland, disturbance of its habitat values, or impairment of its functional capacity.

Policy 3.2: Development shall consider the potential changes in functionality of Wildlife Habitat Area due to rising sea levels and coordinate management with the District and City Climate Mitigation and Adaptation Plans. Siting and design of new shoreline development shall take into account predicted future changes in sea level. In particular, an acceleration of the historic rate of sea level rise shall be considered and based upon up-to-date scientific papers and studies, agency guidance (such as the 2010 Sea Level Guidance from the

California Ocean Protection Council), and reports by national and international groups such as the National Research Council and the Intergovernmental Panel on Climate Change. Consistent with all provisions of the PMP, new structures shall be set back a sufficient distance landward or other sea level rise adaptation strategies incorporated to eliminate or minimize, to the maximum extent feasible, hazards associated with anticipated sea level rise over the expected economic life of the structure.

Policy 3.3: Upland areas in the Sweetwater and Otay Districts will be adaptively managed to provide additional habitat or protection to create appropriate transitional habitat during periods of high tide and taking into account future sea level rise.

Policy 3.4: Prospective development on S-1 shall be evaluated for potential hazards associated with the current year 2050 and 2100 projected sea level rise scenarios developed by the District. Development and siting decisions shall take into account identified risks on the site as well as to surrounding resources and incorporate building setbacks or other sea level rise adaptation strategies as appropriate.

4. Wildlife Protection: Bird Strikes and Disorientation

Policy 4.1: Prior to issuance of any building permits, building plans shall be reviewed by a qualified biologist retained by the developer and approved by the District, to verify that the proposed building has incorporated specific design features to avoid or to reduce the potential for bird strikes and that employ measures described below:

Policy 4.1.1: Lighting

a) No solid red or pulsating red lights shall be installed on or near the building unless required by the Federal Aviation Administration (FAA).
b) Where lighting must be used for safety reasons (FAA 2000 Advisory Circular), minimum intensity, maximum off-phased (3 seconds between flashes) white strobes shall be used.
c) No solid spot lights or intense bright lights shall be used during bird migration periods in the spring (from March to May) and fall (from August to October). All event lighting shall be directed downward and shielded, unless such directed and shielded minimized light spills beyond the area for which illumination is required.
d) Exterior lighting shall be limited to that which is necessary and appropriate to ensure general public safety and way finding, including signage for building identification and way finding.
e) Exterior lighting shall be directed downward and shielded to prevent upward lighting and to minimize light spill beyond the area for which illumination is required.
f) Office space, residential units, and hotel rooms shall be equipped with motion sensors, timers, or other lighting control systems to ensure that lighting is extinguished when the space is unoccupied.
g) Office space, residential units, and hotel rooms shall be equipped with blinds, drapes, or other window coverings that may be closed to minimize the effects of interior night lighting.

Policy 4.1.2: Glass and Reflection

a) Use of reflective coatings on any glass surface is prohibited.

b) Buildings shall incorporate measures to the satisfaction of the District or the City to indicate to birds that the glass surface is solid by creating visual markers and muting reflection.
c) Project design standards will encourage window stencilling and angling.
d) These measures may include but are not limited to the following:
    i. Glass surfaces which are non-reflective
    ii. Glass surfaces which are tilted at a downward angle
    iii. Glass surfaces which use fritted or patterned glass
    iv. Glass surfaces which use vertical or horizontal mullions or other fenestration patterns
    v. Glass surfaces which are fitted with screening, decorative grills, or louvers
    vi. Glass surfaces which use awnings, overhangs, bris sole, or other exterior sun-shading devices
    vii. Glass surfaces which use external films or coatings perceivable by birds
    viii. Artwork, drapery, banners, and wall coverings that counter the reflection of glass surfaces or block "see through" pathways.

Policy 4.1.3: Building Articulation

a) Structure design will include secondary and tertiary setbacks and, to the maximum extent possible, stepped back building design, protruding balconies, recessed windows, and mullioned glazing systems, shall be incorporated to the extent feasible. Balconies and other elements will step back from the water's edge.
b) Design features that increase the potential for bird strikes, such as walkways constructed of clear glass and "see through" pathways through lobbies, rooms and corridors, shall be avoided except for minor features intended to enhance view opportunities at grade level and only when oriented away from large open expanses.
c) Buildings shall be sited and designed to minimize glass and windows facing Wildlife Habitat Areas to the maximum extent possible. Design for towers on Parcel H-3 should avoid east-west monolith massing and shall include architectural articulation.
d) Parcels containing surface parking, such as those depicted for the Sweetwater District, will be designed with parking lots located nearer to the Wildlife Habitat Areas. Site plans on parcels adjacent to Wildlife Habitat Areas will maximize distance between structures and such areas.

Policy 4.1.4: Landscaping

a) Exterior trees and landscaping shall be located and glass surfaces shall incorporate measures so that exterior trees and landscaping are not reflected on building surfaces.
b) In small exterior courtyards and recessed areas, the building's edge shall be clearly defined with opaque materials and non-reflective glass.
c) Interior plants shall be located a minimum of 10 feet away from glass surfaces to avoid or reduce the potential for attracting birds.

Policy 4.1.5: Public Education

a) The owner or operator of each building shall implement an ongoing procedure to the satisfaction of the District or the City to encourage tenants, residents, and guests to close their blinds, drapes, or other window coverings to reduce or avoid the potential for bird strikes.

b) The owner or operator of each building shall enroll in the Fatal Light Awareness Program's "Bird-Friendly Building Program" and shall implement ongoing tenant, resident, and guest education strategies, to the satisfaction of the District or the City, to reduce or avoid the potential for bird strikes, such as elevator and lobby signage and educational displays, e-mail alerts and other bulletins during spring and fall migratory seasons, and other activities designed to enlist cooperation in reducing bird collisions with the building.

Policy 4.1.6: Monitoring Bird Strikes and Collisions

For Phase I projects, the project applicant shall retain a qualified biologist to design a protocol and schedule, in consultation with the USFWS and subject to the approval of the District or City, as appropriate depending on jurisdiction, to monitor bird strikes which may occur during the first 12 months after the completion of construction. Within 60 days after completion of the monitoring period, the qualified biologist shall submit a written report to the District or the City, which shall state the biologist's findings and recommendations regarding any bird strikes that occurred. Based on the findings of those reports, the District or the City, as appropriate depending on jurisdiction, in coordination with the USFWS, will evaluate whether further action is required, which may include further monitoring or redesign of structures for future phases.

Policy 4.2: Bird strikes must be monitored and measures developed to address persistent problem areas in accordance with the NRMP. Nighttime lighting in tower buildings must be addressed and evaluated through adaptive management such that impacts on birds are avoided or minimized. Minimization of impacts of buildings on birds and the Wildlife Habitat Areas will be a priority in the selection of window coverings, glass color, other exterior materials, and design of exterior lighting and lighting of signs.

5. Buffer Areas for Wildlife Protection

Policy 5.1: Designate "No Touch" Buffer Areas as defined and described in Exhibit 2. Such areas will contain fencing designed specifically to limit the movement of domesticated, feral, and nuisance predators (e.g. dogs, cats, skunks, opossums and other small terrestrial animals [collectively, "Predators"]) and humans between developed park and No Touch Buffer Areas and Wildlife Habitat Areas. The fence will be a minimum 6-foot high, black vinyl chain link fence or other equally effective barrier designed to take into consideration public views of the Bay and the need to protect natural resources. Fence design may include appropriate locked access points for maintenance and other necessary functions. Installation of the fence will include land contouring to minimize visual impacts of the fence. The installation of such fencing must be completed prior to the issuance of Certificates of Occupancy for development projects on either Parcel H-3 or H-23 and in conjunction with development or road improvements in the Sweetwater District.

Policy 5.2: Prohibit active recreation, construction of any road (whether paved or not), within No Touch Buffer Areas and "Transition Buffer Areas" as that term is defined and described in Exhibit 2, with the exception of existing or necessary access points for required maintenance.

Policy 5.3: Protect the No Touch Buffer Areas from the impacts of the Chula Vista Bayfront project including, without limitation, fencing necessary to protect the Sweetwater Marsh and the Sweetwater parcel tidal flats, the J Street Marsh next to the San Diego Bay National Wildlife Refuge, and the north side of Parcel H-3.

Policy 5.4: Include additional controls and strategies restricting movement of humans and Predators into sensitive areas beyond the boundaries of the designated Buffer Areas.

Policy 5.5: Require the Recreational Vehicle (RV) Park to install fencing or other barriers sufficient to prevent passage of predators and humans into sensitive adjacent habitat.

Policy 5.6: Require all dogs to be leashed in all areas of the Chula Vista Bayfront at all times except in any designated and controlled off-leash areas.

Policy 5.7: Impose and enforce restrictions on all residential development to keep cats and dogs indoors or on leashes at all times. Residential developments will be required to provide education to owners and/or renters regarding the rules and restrictions regarding the keeping of pets.

Policy 5.8: Habitat buffers shall include a 100-foot-wide buffer from the seasonal pond (parcel SP-2) within the Sweetwater District, a 400-foot combined buffer in the Sweetwater District and a minimum 100-foot buffer in the Otay District.

Policy 5.9: "Environmentally sensitive habitat area" (ESHA) means any area in which plant or animal life or their habitats are either rare or especially valuable because of their special nature or role in an ecosystem and which could be easily disturbed or degraded by human activities and developments. The following areas shall be considered ESHA, unless there is compelling site-specific evidence to the contrary:

- Any habitat area that is rare or especially valuable from a local, regional, or statewide basis.
- Areas that contribute to the viability of plant or animal species designated as rare, threatened, or endangered under State or Federal law.
- Areas that contribute to the viability of species designated as Fully Protected or Species of Special Concern under State law or regulations.
- Areas that contribute to the viability of plant species for which there is compelling evidence of rarity, for example, those designated by the California Native Plant Society (CNPS) as 1b (Rare or endangered in California and elsewhere), such as Nuttall's scrub oak or "2" (rare, threatened or endangered in California but more common elsewhere), such as wart-stemmed Ceanothus.

Policy 5.10: New development shall be sited and designed to avoid impacts to ESHA. ESHA shall be protected against any significant disruption of habitat values, and only uses dependent on those resources shall be allowed within those areas.

Development in areas adjacent to environmentally sensitive habitat areas and parks and recreation areas shall be sited and designed to prevent impacts which would significantly degrade those areas, and shall be compatible with the continuance of those habitat and recreation areas. These uses include enhancement/restoration work, passive recreational parks and public access or recreational facilities such as trails and bike paths integrated into the natural environment and sited and designed to preserve, and be compatible with, native habitat.

Policy 5.11: At the time of adoption of the Chula Vista Bayfront plan, the Coastal Sage Scrub on the berm in the S-1 and S-2 parcel areas and the non-native grasslands located in various locations within the Chula Vista Bayfront Master Plan were not identified as ESHA.

Site-specific studies to assess the extent and quality of natural resources on a site will be required at the time development is proposed.

Policy 5.12: In the 1-g parcel area, a pedestrian bridge is proposed to create a linkage over a tidal inlet associated with the F and G Street Marsh. Tidal habitats should be treated as ESHA and the bridge crossing must be designed to enhance the habitat values present and reduce erosion. This bridge span must be extended and the existing incised channel slope should be cut back, reducing the slope and then creating additional salt marsh habitat on the created floodplain. Site-specific studies to assess the extent and quality of natural resources at the site will be required at the time development is proposed.

Policy 5.13: If located in or adjacent to ESHA, new development shall include an inventory conducted by a qualified biologist of the plant and animal species present on the project site. If the initial inventory indicates the presence or potential for sensitive species or habitat on the project site, a detailed biological study shall be required. Sensitive species are those listed in any of three categories: federally listed, state listed or designated species of special concern or fully protected species, and CNPS categories 1B and 2.

Policy 5.14: Development adjacent to ESHAs shall minimize impacts to habitat values or sensitive species to the maximum extent feasible. Native vegetation buffer areas shall be provided around ESHAs to serve as transitional habitat and provide distance and physical barriers to human intrusion. Buffers shall be of a sufficient size to ensure the biological integrity and preservation of the ESHA they are designed to protect.

Policy 5.15: All buffers around (non-wetland) ESHA shall be a minimum of 100 feet in width, or a lesser width may be approved by the District if findings are made that a lesser buffer would adequately protect the resource. However, in no case can the buffer size be reduced to less than 50 feet.

Policy 5.16: Public access-ways and trails are considered resource dependent uses. New access-ways and trails located within or adjacent to ESHA shall be sited to minimize impacts to ESHA to the maximum extent feasible. Measures including, but not limited to, signage, placement of boardwalks, and limited fencing shall be implemented as necessary to protect ESHA.

Policy 5.17: Modifications to required development standards that are not related to ESHA protection (street setbacks, height limits, etc.) shall be permitted where necessary to avoid or minimize impacts to ESHA.

Policy 5.18: Protection of ESHA and public access shall take priority over other development standards and where there is any conflict between general development standards and ESHA and/or public access protection, the standards that are most protective of ESHA and public access shall have precedence.

Policy 5.19: Impacts to native habitat that does not constitute ESHA that cannot be avoided through the implementation of siting and design alternatives shall be fully mitigated, with priority given to on-site mitigation. Off-site mitigation measures shall only be approved when it is not feasible to fully mitigate impacts on-site or where off-site mitigation is more protective. Mitigation for impacts to native habitat shall be provided at a 3:1 ratio.

6. Landscaping and Vegetation

Policy 6.1: The following landscape guidelines will apply to the Chula Vista Bayfront area:

a) Invasive plant species (as listed in the California Invasive Plant Inventory list or California Invasive Plant Inventory Database or updates) will not be used in the Chula Vista Bayfront area. Any such invasive plant species that establishes itself within the Chula Vista Bayfront area will be immediately removed to the maximum extent feasible and in a manner adequate to prevent further distribution into Wildlife Habitat Areas. A condition of approval for coastal development permits will require applicants to remove any such invasive plant species that established itself within the Chula Vista Bayfront area.
b) Only designated native plants will be used in No Touch Buffer Areas, habitat restoration areas, or in the limited and transitional zones of Parcel SP-1 adjacent to Wildlife Habitat Areas.
c) Non-native plants will be prohibited adjacent to Wildlife Habitat Areas and will be strongly discouraged and minimized elsewhere where they will provide breeding of undesired scavengers.
d) No trees will be planted in the No Touch Buffer Areas or directly adjacent to a National Wildlife Refuge, J Street Marsh, or SP-2 areas where there is no Buffer Area.

7. Lighting and Illumination

Policy 7.1: All roadways will be designed, and where necessary edges bermed, to ensure penetration of automobile lights in the Wildlife Habitat Areas will be minimized subject to applicable City and District roadway design standards.

Policy 7.2: Explicit lighting requirements to minimize impacts to Wildlife Habitat Areas will be devised and implemented for all Bayfront uses including commercial, residential, municipal, streets, recreational, and parking lots. Beacon and exterior flood lights are prohibited where they would impact a Wildlife Habitat Area and use of this lighting should be minimized throughout the project.

Policy 7.3: All street and walkway lighting should be shielded to minimize sky glow.

Policy 7.4: To the maximum extent feasible, all external lighting will be designed to minimize any impact on Wildlife Habitat Areas, and operations and maintenance will be devised to ensure appropriate long-term education and control of light impacts. To the maximum extent feasible, ambient light impacts to the Sweetwater or J Street Marshes will be minimized.

Policy 7.5: Sweetwater and Otay District parks will open and close in accordance with District Park Regulations.

Policy 7.6: Laser light shows will be prohibited.

Policy 7.7: Construction lighting will be controlled to minimize Wildlife Habitat Areas impacts.

Policy 7.8: In Sweetwater and Otay District parks, lighting will be limited to that which is necessary for security purposes. Security lighting will be strictly limited to that required by

applicable law enforcement. All lighting proposed for the Sweetwater and Otay District parks and the shoreline promenade will be placed only where needed for human safety. Lights will be placed on low-standing bollards, shielded, and flat bottomed, so the illumination is directed downward onto the walkway and does not scatter. Lighting that emits only a low-range yellow light will be used to minimize ecological disruption. No night lighting for active sports facilities will be allowed.

8. Noise

Policy 8.1: Construction noise shall be controlled to minimize impact to Wildlife Habitat Areas.

9. Public, Resident, Visitor, Worker Education Program Education

Policy 9.1: An environmental education program will be developed and implemented and will include the following:

a) The program must continue for the duration of the Chula Vista Bayfront project and must target both residential and commercial uses as well as park visitors.

b) The program's primary objective will be to educate Bayfront users, residents, visitors, tenants and workers about the natural condition of the Bay, the ecological importance of the Chula Vista Bayfront area and the public's role in the restoration and protection of wildlife resources of the Bay.

Policy 9.2: The environmental education program will include educational signage, regular seminars and interpretive walks on the natural history and resources of the area, and regular stewardship events for volunteers (i.e., shoreline and beach cleanups, exotic plant removal, etc.).

Policy 9.3: The environmental education program will include adequate annual funding for personnel or contractor/consultant and overhead to ensure implementation of the following functions and activities in collaboration with the Chula Vista Nature Center or USFWS:

a) Coordination of volunteer programs and events;
b) Coordination of interpretive and educational programs;
c) Coordination of tenant, resident and visitor educational programs;
d) Docent educational; and
e) Enhancements and restoration events.

10. Boating Impacts

Policy 10.1: All boating, human, and pet intrusion must be kept away from F&G Street channel mouth and marsh.

Policy 10.2: Water areas will be managed with enforceable boating restrictions No boating will be allowed in vicinity of the J Street Marsh or east of the navigation channel in the Sweetwater District during the fall and spring migration and during the winter season when flocks of birds are present.

Policy 10.3: All rentals of personal water craft (PWC) will be prohibited in the Chula Vista Bayfront. (Note: PWC will mean a motorboat less than sixteen feet in length which uses an inboard motor powering a jet pump as its primary motive power and which is designed to be operation by a person sitting, standing, or kneeling on rather than in the conventional manner of sitting or standing inside the vessel.)

Policy 10.4: Use of PWCs will be prohibited in Wildlife Habitat Areas, subject to applicable law.

Policy 10.5: A five (5) mile per hour speed limit will be enforced in areas other than the navigation channels.

Policy 10.6: Boating in the project area will be managed in a manner that protects water quality and that ensures persons or employees maintaining boats in slips or using slips on a transient basis are made aware of water quality provisions.

a) Approval of projects within Chula Vista Bayfront Master Plan marinas shall include appropriate requirements from the District Jurisdictional Urban Runoff Management Document (JURMP) that includes appropriate Best Management Practices (BMPs) for controlling adverse impacts to water quality related to the boating facilities, including those BMPs for activities occurring over water.
b) Approval of projects within the Chula Vista Bayfront Master Plan marinas shall include a requirement for boating facilities to identify procedures for inspection of boater activities and sanctions for boaters that may be adversely impacting water quality.
c) Marinas in the Chula Vista Bayfront Master Plan project area shall provide evidence of ongoing efforts to protect water quality, such as a current certification by the Clean Marinas program (cleanmarina.org), stormwater BMP Plan, or other equivalent documentation of clean marina practices (http://www.cleanmarina.org/cleanmanual.shtml).
d) San Diego Bay is a federally designated No Discharge Zone. The District shall ensure that District-leased facilities are adequately informing their boater tenants of their responsibilities regarding the discharge of sewage and are providing information to boaters on ways to anonymously report violators.
e) The District shall adopt an addendum to leasing agreements for boating facilities that specifies actions that should be taken to protect water quality. This addendum should reflect applicable water quality laws and regulations pertaining to San Diego Bay.

11. Walkway and Pathway Design

Policy 11.1: Walkways, paths, and overlooks near Wildlife Habitat Areas outside of the No Touch Buffer Areas will be designed in accordance with the following:

a) Alignment, design, and general construction plans of walkways and overlooks will be developed to minimize potential impacts to Wildlife Habitat Areas.
b) Path routes will be sited with appropriate setbacks from Wildlife Habitat Areas.
c) Paths running parallel to shore or marsh areas that will cause or contribute to bird flushing will be minimized throughout the Chula Vista Bayfront.
d) Walkways and overlooks will be designed to minimize and eliminate, where possible, perching opportunities for raptors and shelter for skunks, opossums or other Predators.

e) Walkways and overlooks that approach sensitive areas must be blinded, raised, or otherwise screened so that birds are not flushed or frightened. In general, walkway and overlook designs will minimize visual impacts on the Wildlife Habitat Areas of people on the walkways.

12. Predator Management

Policy 12.1: The NRMP will include provisions designed to manage Predator impacts on Wildlife Habitat Areas which will include and comply with the following:

a) Year-round, funded Predator management will be implemented for the life of the Chula Vista Bayfront project with clearly delineated roles and responsibilities for the District, City and Resource Agencies. The primary objective of such provisions will be to adequately protect terns, rails, plovers, shorebirds, over-wintering species, and other species of high management priority as determined by the Resource Agencies.
b) Predator management will include regular foot patrols and utilize tracking techniques to find and remove domestic or feral animals.
c) Predator attraction and trash management shall be addressed for all areas of the Chula Vista Bayfront project by identifying clear management measures and restrictions. Examples of the foregoing include design of trash containers, including those in park areas and commercial dumpsters, to be covered and self-closing at all times, design of containment systems to prevent access by sea gulls, rats, crows, pigeons, skunks, opossums, raccoons, and similar animals and adequate and frequent servicing of trash receptacles.
d) All buildings, signage, walkways, overlooks, light standards, roofs, balconies, ledges, and other structures that could provide line of sight views of Wildlife Habitat Areas will be designed in a manner to discourage their use as raptor perches or nests.

13. Stormwater and Urban Runoff Quality

Policy 13.1: Provisions for access for non-destructive maintenance and removal of litter and excess sediment will be integrated into these facilities. In areas that provide for the natural treatment of runoff, cattails, bulrush, mulefat, willow, and the like are permissible.

Policy 13.2: In order to protect the quality of coastal waters the District shall promote the protection of water quality that meets state standards and the restoration of waters that do not meet state standards, and encourage and support public outreach and education regarding the water quality impacts of development.

All new development shall:

a) Comply with the Regional Water Quality Control Board Order No. R9-2007-0001, National Pollutant Discharge Elimination System Permit No. CAS0108758, Waste Discharge Requirements for Discharges of Urban Runoff from the Municipal Separate Storm Sewer Systems Draining the Watersheds of the County of San Diego, the Incorporated Cities of San Diego County, and the San Diego Unified Port District (Municipal Permit), as adopted, amended, and/or modified or replaced by the Regional Water Quality Control Board with a new Municipal Permit. The Municipal Permit prohibits any activities that could degrade stormwater quality.
b) Comply with the District Jurisdictional Urban Runoff Management Document and the District Standard Urban Stormwater Mitigation Plan which provides BMP requirements for new development and redevelopment.

c) Be designed and managed to minimize the introduction of pollutants into coastal waters to the maximum extent practicable.
d) Be designed and managed to minimize increases in peak runoff rate and volume in order to avoid detrimental water quality impacts caused by excessive erosion or sedimentation.
e) Include Site Design and Source Control BMPs and Low Impact Development practices, where feasible, in all developments.
f) Implement the requirements of Hydromodification Management Plan developed pursuant to the Municipal Permit, as required.
g) Minimize impervious surfaces in new development, especially directly connected impervious areas, and, where feasible, increase the area of pervious surfaces in redevelopment.
h) Minimize erosion, sedimentation, and polluted runoff from construction-related activities of development, to the maximum extent practicable.
i) Minimize the land disturbance activities of construction (e.g., clearing, grading, and cut-and-fill), especially in erosive areas (including steep slopes, unstable areas, and erosive soils), to avoid detrimental water quality impacts caused by increased erosion or sedimentation. Incorporate soil stabilization BMPs on disturbed areas as soon as feasible.
j) Require Treatment Control BMPs, in addition to Site Design and Source Control measures, when the combination of Site Design and Source Control BMPs is not sufficient to protect water quality.
k) Be designed, constructed and maintain any required Treatment Control BMPs (or suites of BMPs) are designed and constructed so that they treat, infiltrate, or filter the amount of storm water runoff produced by all storms up to and including the 85th percentile, 24-hour storm event for volume-based BMPs, and/or the 85th percentile, 1-hour storm event (with an appropriate safety factor of 2 or greater) for flow-based BMPs.

Policy 13.3: An on-site pump out facility shall be required with the development of any new marinas.

Policy 13.4: Stormwater and non-point source urban runoff into Wildlife Habitat Areas must be monitored and managed so as to prevent unwanted ecotype conversion or weed invasion. A plan to address the occurrence of any erosion or type conversion will be developed and implemented, if necessary. Monitoring will include an assessment of stream bed scouring and habitat degradation, sediment accumulation, shoreline erosion and stream bed widening, loss of aquatic species, and decreased base flow.

Policy 13.5: The use of insecticides, herbicides, rodenticides or any toxic chemical substance that drains into Wildlife Habitat Areas or which has the potential to significantly degrade ESHA, shall be prohibited within and adjacent to ESHAs, except where necessary to protect or enhance the habitat itself, such as eradication of invasive plant species, or habitat restoration. Application of such chemical substances shall not take place during the winter season or when rain is predicted within a week of application.

Policy 13.6: Integrated Pest Management must be used in all outdoor, public, buffer, habitat, and park areas.

Policy 13.7: Fine trash filters are required for all storm drain pipes that discharge toward Wildlife Habitat Areas.

14. Additional Habitat Management and Protection

Policy 14.1: The District will exercise diligent and good faith efforts to enter into the following cooperative agreements with the USFWS or other appropriate agency or organization:

a) An agreement providing for the long-term protection and management of the sensitive biological habitat running north from the South Bay Boatyard to the Sweetwater River Channel (known as the Sweetwater Tidal Flats) and addressing educational signage, long-term maintenance, and additional protection measures such as increased monitoring and enforcement, shared jurisdiction and enforcement by District personnel with legal authority to enforce applicable rules and regulations ("District Enforcement Personnel"), shared jurisdiction and enforcement by District Enforcement Personnel and other appropriate Resource Agencies of resource regulations, and placement of enforcement signage. Subject to the cooperation of the applicable Resource Agency, such cooperative agreement will be executed prior to the Development Commencement of any projects subject to District's jurisdiction within the Sweetwater or Harbor Districts.

b) An agreement for the long-term protection and management of the J Street Marsh and addressing additional protective measures such as educational signage, long-term maintenance, and monitoring and enforcement by District Enforcement Personnel and enforcement of resource regulations by District Enforcement Personnel and other Resource Agencies and placement of enforcement signage. Subject to the cooperation of the applicable Resource Agency, such cooperative agreement will be executed prior to the Development Commencement within the Otay District.

c) If either of the cooperative agreements contemplated above is not achievable within three (3) years after Final Environmental Impact Report certification, the District will develop and pursue another mechanism that provides long-term, additional protection and natural resource management for these areas.

Policy 14.2: The District will include an analysis of the appropriate level and method for wetland and marine life habitat restoration of the intake/discharge channels associated with the South Bay Power Plant in the environmental review document for the demolition of the South Bay Power Plant that includes below grade or in water structures.

Policy 14.3: A permanent 100-foot-wide buffer shall be provided from proposed development around the seasonal wetland within Parcel SP-2.

Policy 14.4: In order to ensure that sensitive resources are protected from adjacent development, at the time project specific development is proposed on parcel S-1, shading impacts, appropriate setbacks, step backs, and/or height reductions, will be analyzed as part of the necessary subsequent environmental review for those projects.

Policy 14.5: As a future and separate project, the District will investigate, in consultation with the USFWS, the feasibility of restoring an ecologically meaningful tidal connection between the F & G Street Marsh and the upland marsh on parcel SP-2 consistent with USFWS restoration concepts for the area. At a minimum, the investigation will assess the biological value of tidal influence, the presence of hazardous materials, necessary physical improvements to achieve desired results, permitting requirements, and funding opportunities for establishing the tidal connection. This investigation will be completed prior to the

initiation of any physical alteration of SP-2, F Street, and/or the F & G Street Marsh. In addition, once emergency access to the Chula Vista Bayfront area has been adequately established such that F Street is no longer needed for public right-of-way, the District and City will abandon/vacate the F Street right-of-way for vehicular use, but may reserve it for pedestrian and bicycle use if ecologically appropriate.

Policy 14.6: Channelizations or other substantial alterations of streams shall be prohibited except for: (1) necessary water supply projects where no feasible alternative exists; (2) flood protection for existing development where there is no other feasible alternative; or (3) the improvement of fish and wildlife habitat. Any channelization or stream alteration permitted for one of these three purposes shall minimize impacts to coastal resources, including the depletion of groundwater, and shall include maximum feasible mitigation measures to mitigate unavoidable impacts. Bioengineering alternatives shall be preferred for flood protection over "hard" solutions such as concrete or riprap channels.

15. Energy

The development of the Chula Vista Bayfront offers the District and City a unique opportunity to demonstrate the viability of responsible and sustainable development practices. Accordingly, the Chula Vista Bayfront Development Policies seek to establish guidelines to govern the future build-out of the programmatic elements of Chula Vista Bayfront and to ensure that the project is comprised of high performance and highly energy-efficient buildings and clean, efficient generation. The standards in this section are intended to be interpreted broadly and with the flexibility to adapt to new energy technology and evolving building construction and design practices.

Policy 15.1: The following energy standards shall be applied to development of all parcels within the Chula Vista Bayfront area *except Parcels HP-5, H-13, H-14 and H-15.* These parcels are addressed on separate standards provided below. The term "Development" will mean the development of an individual parcel within the Chula Vista Bayfront area.

a) To help reduce the need for fossil-fueled power generation, reduce greenhouse gas emissions, and support the California Energy Commission's Loading Order for Electricity Resources, all Developments will achieve a minimum of a fifty (50) percent reduction in annual energy use in accordance with these policies.
b) Each building in each Development will perform at least fifteen (15) percent better than Title 24, Part 6 of the California Building Energy Efficiency Standards ("Title 24") in effect on the date of the execution of the Chula Vista Bayfront Master Plan Settlement Agreement (May 2010). The minimum energy efficiency performance standard adopted by the City is hereinafter described as its "Energy Efficiency Requirement" or "EER". Should revised Title 24 standards be adopted by the State of California, the City's EER at the time a building permit application is submitted for such Development shall apply.
c) The balance of the fifty (50) percent reduction in annual energy use will be achieved through the use of any combination of the energy reduction measures described in these policies. To achieve compliance with this policy, sponsors of Developments may select one of two paths. The first path is based on Title 24 ("Title 24 Path") and the second is described in Energy and Atmosphere, Credit 1 "Optimize Energy Performance" (Credit EA-/c1) in the US Green Building Council's Leadership in Energy and Environmental Design (LEED) v3 system ("LEED Path"). The definition of the term "Baseline" against which energy reduction will be measured will vary depending on the path selected and is

further described in Exhibit 3. Choosing the LEED Path does not require a Development to achieve LEED Certification, but simply uses the methodology of EA-/c1.

d) Renewable Energy generated within the boundaries of the Development will be credited toward the minimum of a fifty (50) percent reduction in annual energy use in accordance energy reduction requirement. The term "Renewable Energy" will mean energy derived from the sources described in California Public Resources Code section 25741 (b) 1.

e) Renewable Energy generated on one or more sites ("Renewable Energy Sites") within the boundaries of the Chula Vista Bayfront by the District, City or other third party and fed to the electrical grid or to the Development will be credited toward the minimum of a fifty (50) percent energy reduction requirement. Aggregate energy generated on Renewable Energy Sites may be allocated to an individual Development up to the amount necessary to achieve such Development's compliance with the minimum of a fifty (50) percent energy reduction requirement. Once allocated to a Development, the amount of energy generated by Renewable Energy Sites so allocated may not be further allocated to another Development.

f) Participation in a City of Chula Vista sponsored energy efficiency program provided that the resulting energy reduction may be calculated and verified. The methodology for calculating the amount of the credit toward the minimum of a fifty (50) percent energy reduction requirement under the Title 24 Path and the LEED Path is described in Exhibit 3.

g) Each Development will develop, implement, and for the life of each Development, maintain a measurement and verification plan ("M&V Plan"). Such participation has been shown to increase the persistence of energy efficiency ("EE") and also to provide a way of recognizing and encouraging the ongoing conservation efforts of occupants and facility managers and will be awarded a waiver for five (5) percent credit against the Baseline to determine compliance with the minimum of a fifty (50) percent energy reduction requirement. The District will include in all leases the requirement to perform an energy audit every three (3) years for the convention centers and hotel Developments over 300 rooms and five (5) years for all other Developments to ensure that all energy systems are performing as planned or corrective action will be taken if failing to meet EE commitments.

h) Participation in one of SDG&E's Voluntary Demand Reduction (DR) utility rates will be awarded a waiver for three (3) percent credit against the Baseline to determine compliance with the minimum of a fifty (50) percent energy reduction requirement.

i) Participation in one of SDG&E's Mandatory Demand Reduction (DR) utility rates will be awarded a waiver for five (5) percent credit against the Baseline to determine compliance with the minimum of a fifty (50) percent energy reduction requirement.

j) Incorporation of natural ventilation into design such that at least 75% of the conditioned area is naturally ventilated according to the guidelines set forth in Exhibit 3, and if this benefit was not included in the energy efficiency calculations, the project will be awarded either: a waiver for five (5) percent credit against the Baseline to determine compliance with the minimum of a fifty (50) percent energy reduction requirement; or, a waiver for ten (10) percent credit will be awarded if the natural ventilation system is coupled with an energy or cooling system that does not draw from the grid if and when natural ventilation is not used. This may

be prorated if less than seventy-five (75) percent of the conditioned area is naturally ventilated.

k) The parties understand and acknowledge that the energy reduction measures described above for a Development or component of a Development may be phased in over time to achieve compliance with the minimum of a fifty (50) percent energy reduction requirement provided such energy reduction measures are completed no later than thirty-six (36) months following issuance of a Certificate of Occupancy for such Development or such component thereof.

l) To further incentivize responsible and sustainable development practices within the boundaries of the Chula Vista Bayfront, District and City will consider voluntary commitments to levels of energy reduction in excess of the requirements of above, commitment to achievement of a LEED Certification, and/or a "Living Building Challenge" in connection with the selection of respondents in Request for Proposals/Request for Qualifications (RFP/RFQ) processes for Developments within the Chula Vista Bayfront area.

Policy 15.2: Within one year following the California Coastal Commission's (CCC) approval of a Port Master Plan amendment substantially consistent with the Chula Vista Bayfront project, the District will in good faith consider adoption of an ordinance in a public hearing process that, if approved by the Board of Port Commissioners, will require the following:

a) Within six (6) months following adoption of the ordinance and every three (3) years thereafter, the District will conduct an energy efficiency and renewable energy analysis that will:
   (i) Assess the feasibility and cost-effectiveness of programs and options to reduce demand on the electric grid from all lands under District's jurisdiction; and,
   (ii) Include, but not be limited to, an assessment of the potential for reduction in energy use on all land under District's jurisdiction through increases in energy efficiency, demand response, clean renewable and distributed energy generation and other methods and technologies.

b) Upon the completion of each analysis, the District will consider good faith implementation of cost-effective programs and options as part of its commitment to greenhouse gas reductions and global climate change prevention activities consistent with Assembly Bill 32.

c) The results of each analysis will be published on the District's website and received by the District's Board of Port Commissioners in a public forum.

16. Hazardous Materials and Exposure Policies

Policy 16.1: Parcels contaminated with hazardous materials will be remediated to levels adequate to protect human health and the environment.

17. Public Engagement

Policy 17.1: A South Bay Wildlife Advisory Group ("Wildlife Advisory Group") will be formed to advise the District and City in the creation of the NRMP, cooperative management agreements, Adaptive Management Review and any related wildlife management and restoration plans or prioritizations. The Wildlife Advisory Group will also address management issues and options for resolution. The Wildlife Advisory Group will initiate and support funding requests to the District and City, identify priorities for use of these funds and engage in partnering, education, and volunteerism to support the development of the Chula

Vista Bayfront in a manner that effectively protects and enhances the fish, wildlife, and habitats of the area and educates and engages the public. The Wildlife Advisory Group will meet as needed, but at a minimum of every six (6) months for the first ten (10) years and annually thereafter.

Policy 17.2: The Wildlife Advisory Group will meet to: (i) determine the effectiveness of the NRMP in achieving the Management Objectives; (ii) identify any changes or adjustments to the NRMP required to better achieve the Management Objectives; (iii) identify any changes or adjustments to the NRMP required to respond to changes in the man-made and natural environments that are affecting or, with the passage of time may affect, the effectiveness of the NRMP in achieving the Management Objectives; and (iv) review priorities relative to available funding. At its periodic meetings, the Wildlife Advisory Group may also consider and make recommendations regarding (a) implementation of the NRMP as needed, (b) Adaptive Management Review and (c) NRMP Amendments.

Policy 17.3: The Wildlife Advisory Group will advise the joint powers authority ("JPA") on expenditure of the Community Benefits Fund consistent with this Plan subject to applicable law. Written recommendations from the Wildlife Advisory Group will be forwarded to the District and City for consideration on key decisions as the build-out of the Chula Vista Bayfront project occurs.

Policy 17.4: A Bayfront Cultural and Design Committee ("BCDC") shall be formed to advise the District in addressing the design of parks, cultural facilities, and development projects. The public participation process for the BCDC will include broad community representation and will be modeled after the Community Advisory Committee (CAC) process. Membership will include at least one member each from the District, Chula Vista Planning Commission, Design Review Committee, and Resource Conservation Committee. The BCDC will advise the District in the establishment of Chula Vista Bayfront Master Plan design guidelines to address cohesive development and streetscape design standards, walkways and bikeways design to promote safe walking and biking, standards for design of park areas, and cultural facilities but will not address NRMP and Wildlife Habitat Areas design guidelines described above. A minimum of three public meeting/workshops will be held to establish the design guidelines.

18. Public Access

Policy 18.1: The concept approval for the Signature Park will include a refined plan to address the linkage between the parks over the F and G Street channel. The design will ensure that the linkage between the two parks is easily accessed, obvious, and allows visitors to flow naturally and safely between the two parts of the park. A separate pedestrian bridge will be evaluated and, if necessary, a supplemental environmental review will be performed to address any necessary issues prior to the concept approval being forwarded to the Board of Port Commissioners.

Policy 18.2: Phase I Signature Park improvements (including development of Parcel S-2, within the Transition Buffer Areas and Limited Use zones of parcel SP1, and the fencing of the No Touch Buffer Area of Parcel SP1) will be completed prior to the issuance of Certificates of Occupancy for projects developed on either Parcel H-3 or H-23 and after any additional necessary environmental review. The public participation process for the design of the park will be completed prior to District Staff seeking Concept Approval from the Board of Port Commissioners.

19. Sweetwater and Otay District Public Park Requirements

Policy 19.1: Sweetwater and Otay District Public Parks will meet the following minimum standards in addition to those described above:

a) The parks will be Passive in nature and encourage Passive recreation, be low-impact and contain minimal permanent structures. Structures will be limited to single-story heights and will be limited in function to restrooms, picnic tables, shade structures and overlooks. The term "Passive" will mean that which emphasizes the open-space aspect of a park and which involves a low level of development, including picnic areas and trails. In contrast, active recreation is that which requires intensive development and includes programmable elements that involve cooperative or team activity, including, ball fields and skate parks.
b) The parks will be constructed using low water-use ground cover alternatives where possible.
c) Pedestrian and bike trails will be segregated where feasible. A meandering public trail will be provided along the entire length of the Bayfront. The meandering trail within the Sweetwater Park and adjacent to Buffer Areas will not be paved.
d) The parks will not include athletic field amenities.
e) No unattended food vending will be allowed.
f) The parks will include enforcement signage that prohibits tenants, employees, residents, or visitors from feeding or encouraging feral cat colonies and prevents feral cat drop-off or abandonment of pets; and prohibits leash free areas near buffers.
g) Due to their immediate adjacency to Wildlife Habitat Areas, the following restrictions will apply to parks located within the Sweetwater and Otay Districts:
    (i) Such parks will be designated as Passive use parks and use of amplified sound equipment will be prohibited.
    (ii) Reservations for group events and activities will be prohibited.

20. Circulation and Pedestrian Orientation

Policy 20.1: Shoreline promenades shall be a minimum of 25 feet in width allowing both pedestrians and bicyclists and shall be constructed directly along the waterfront where feasible and maintained free of private encroachment around the Bayfront. Pathways and walking trails not proposed along the shoreline shall be a minimum width of 12 feet.

Policy 20.2: Provide a continuous open space system, fully accessible to the public, which would seamlessly connect the Sweetwater, Harbor, and Otay Districts through components such as a continuous shoreline promenade or "Baywalk" and a continuous bicycle path linking the parks and ultimately creating greenbelt linkages.

Policy 20.3: Create a meandering pedestrian trail constructed of natural material that is easily maintained and interwoven throughout the Signature Park. Create, as part of the E Street Extension, a pedestrian pathway/bridge to provide a safe route for pedestrians to walk and to transition from the Sweetwater District to the Harbor Park Shoreline Promenade and park in the Harbor District.

Policy 20.4: Segregate Pedestrian and bike trails where feasible. Provide a meandering public trail along the entire length of the Bayfront. Leave unpaved the meandering trail within the Sweetwater Park and adjacent to Buffer Areas.

Policy 20.5: Open spaces integrated into the hotels must include activating uses such as restaurants, outdoor sitting and dining areas and retail shops, which would be open to the public as well as hotel patrons.

Policy 20.6: Public access and other path-finding signage should be placed at strategic locations throughout the hotel complexes and to guide guests and visitors to and from public use areas, shops and restaurants, restrooms, and other facilities.

Policy 20.7: To help integrate all publicly accessible areas and provide convenience and low cost services for the general public, the ground floor of the hotel developments and associated outdoor areas should contain a variety of pedestrian-oriented amenities, which may include reasonably priced restaurants, newspaper stands, outdoor cafes with sit down and walkup service, informational kiosks, ATM's, public art or gift shops easily accessible to the public.

Policy 20.8: The design of the Resort Conference Center (H-3) development must provide a strong public interface with the adjacent Signature Park by including publicly accessible areas with convenience and low cost services for the general public. Specifically, on the west side of the site, the ground floor of the development and associated outdoor areas must include a variety of pedestrian-oriented amenities and activating uses, such as restaurants, outdoor cafes with sit down and walkup service, informational kiosks, ATMs, public art or gift shops easily accessible to the public. The RFP for the development of the Resort Conference Center (H-3) site will identify these requirements and will emphasize the need for establishing linkages to, from and through the site such that the public feels welcome on the site and encouraged to connect to public promenades and other public amenities in the park areas or along H Street and Marina Parkway. Other public amenities that may be provided at various locations around the hotel site include public wireless connectivity, drinking fountains, bike racks, horticultural interpretive labels on landscape elements, educational and historic plaques/displays, and dog drinking fountains. These elements represent public recreational opportunities and will encourage access to and around the site.

21. Visitor Serving Policies

Policy 21.1: Overnight visitor-serving accommodations shall be encouraged and protected within the Chula Vista Bayfront Master Plan area.

Policy 21.2: Limited Use Overnight Visitor Serving Accommodations (i.e., fractional ownership condominium hotels and timeshares) shall be prohibited on District Tidelands.

Policy 21.3: Lower cost visitor and recreational facilities shall be protected, encouraged and provided where feasible. Specifically, a range of room types, sizes, and room prices should be provided in order to serve a variety of income ranges.

Where a new hotel or motel development would consist of entirely high cost overnight accommodations, after thorough consideration of a supply/demand analysis within the Chula Vista Bayfront Master Plan and South Bay area, in-lieu fees or comparable mitigation may be required as a condition of approval for a coastal development permit, to ensure a range of overnight accommodations are provided within the Chula Vista Bayfront Master Plan and South Bay area. High cost is defined as those hotels with daily room rates 25% higher than the statewide average for coastal areas.

The mitigation payment would be for providing funding for the establishment of lower cost overnight visitor accommodations within the City of Chula Vista or South San Diego County coastal area. The monies and accrued interest shall be used for the above-stated purpose, in consultation with the CCC Executive Director. Any development funded by this account will require review and approval by the Executive Director of the Coastal Commission and a coastal development permit.

Policy 21.4: If removal or conversion of lower or moderate cost overnight accommodations is proposed in the District, the inventory shall be replaced with units that are of comparable cost with the existing units to be removed or converted. The District shall proactively work with hotel/motel operators and offer incentives to maintain and renovate existing properties.

If replacement of lower or moderate cost units is not proposed (either on-site or elsewhere in District Tidelands or Chula Vista within five (5) miles of the coast), then the new development shall be required to pay, as a condition of approval for a coastal development permit, a mitigation payment to provide significant funding for the establishment of lower cost overnight visitor accommodations within Chula Vista, preferably, or within South San Diego County, for each of the low or moderate units removed/converted on a 1:1 basis.

Policy 21.5: Lower-cost RV camping uses shall be protected by maintaining at least an equivalent number of RV sites within the Chula Vista Bayfront Master Plan boundaries. Removal of the existing RV park for construction of a resort hotel and conference center (RCC) is proposed as part of the Chula Vista Bayfront Master Plan, with a replacement RV park to be constructed either in the Otay District (parcel O-3) or the Sweetwater District (parcel S-1). In the event that the replacement park cannot be opened to visitors prior to closing the existing RV park, an interim site with an equivalent number of RV sites shall be established and opened elsewhere with the Chula Vista Bayfront Master Plan area, at parcels S-1, H-23, or in the Otay District.

Policy 21.6: Public recreational opportunities, such as parks, open space, and other no-cost visitor serving amenities shall be provided.

Policy 21.7: Waterfront visitor-serving retail uses and public gathering spaces shall be provided.

Policy 21.8: Marinas within the planning area shall provide lower-cost visitor-serving boating opportunities and shall preserve a varied range of slip sizes. Prior to approval of any changes in the slip size or distribution, the District will undertake an updated comprehensive boater use, slip size, and slip distribution study which is no more than five (5) years old for each dock redevelopment project that affects slip size and distribution of slips, to assess current boater facility needs within the individual project and the Bay as a whole. The District will continue to provide a mix of small, medium and large boat slips based on updated information from the comprehensive study with priority given to boats less than 25 feet in length and a goal of no net loss in number of slips within the Chula Vista Bayfront Master Plan area. Should future projects propose reducing the number or proportion of small slips for boats 25 feet or less within the Chula Vista marina, a Port Master Plan amendment will be required.

22. Funding and Community Benefits

Policy 22.1: Funding for the implementation of the NRMP and for the enforcement and implementation measures shall be provided by the District and City. To meet these

obligations, the District and City will commit revenues or otherwise provide funding to the JPA formed pursuant to the California Marks-Roos Act, Articles 1, 2, 3 and 4 of Chapter 5 of Division 7 of Title 1 of the California Government Code. District and City will ensure the JPA is specifically charged to treat the financial requirements described this policy as priority expenditures that must be assured as project-related revenues are identified and impacts initiated. The District and City expressly acknowledge the funding commitments contemplated herein will include, but not be limited to, funding for personnel and overhead or contractor(s)/consultant(s) to implement and ensure the following functions and activities:

a) On-site management and enforcement for parks and Wildlife Habitat Areas as necessary to enforce restrictions on human and Predator access regarding Wildlife Habitat Areas;
b) Enforcement of mitigation measures including, but not limited to, trash collection, noise restrictions, removal of invasive plants, habitat restoration, and park use restrictions;
c) Coordination, development, implementation and evaluation of effectiveness of education and mitigation programs, including implementation of NRMP;
d) Evaluation of effectiveness of bird strike mitigation and design measures;
e) Water quality protections; and
f) Coordination of injured animal rehabilitation activities.

23. Views and Aesthetics

Policy 23.1: Public views to the beach, lagoons, and along the shoreline as well as to other scenic resources from major public viewpoints, as identified by the "vista" icon on the Precise Plan for Planning District 7 shall be protected. Development that may affect an existing or potential public view shall be designed and sited in a manner so as to preserve or enhance designated view opportunities. Street trees and vegetation shall be chosen and sited so as not to block views upon maturity.

Policy 23.2: The impacts of proposed development on existing public views of scenic resources shall be assessed by the District or City prior to approval of proposed development or redevelopment.

Policy 23.3: Buildings and structures shall be sited to provide unobstructed view corridors from the nearest view corridor road. These criteria may be modified when necessary to mitigate other overriding environmental considerations such as protection of habitat or wildlife corridors.

Policy 23.4: Public views of the Bay and access along the waterfront shall be provided via a proposed "Baywalk" promenade. This pedestrian path will also connect to the Signature Park, and the pathway system within the Sweetwater District, ultimately linking the two districts and "enabling viewers to experience visual contact at close range with the Bay and marshlands."

Policy 23.5: Existing views to the water from the following view corridor roads shall be protected and enhanced: E Street, F Street, Bay Boulevard between E and F Streets, Marina Parkway, and G and L Streets (in the City of Chula Vista); as shall the new views of the Bay created from the H Street corridor. These protected views shall be denoted by the "vista" icons on the Precise Plan for Planning District 7.

Policy 23.6: Building setbacks and coordinated signage shall be provided along Marina Parkway.

Policy 23.7: Prior to approval of development in the Otay District, views of the Bayfront from Bay Boulevard shall be identified and preserved.

Policy 23.8: View corridors to the Bay shall be established on Marina Parkway between H and J Streets approximately every 500 feet as denoted by the "vista" icon on the Precise Plan for Planning District 7.

Policy 23.9: Landscaping shall be planted along Marina Parkway to frame and enhance this scenic corridor, as well as on E Street and Bay Boulevard, adjacent to the project site.

Policy 23.10: Bayfront Gateway Objective/Policies: Certain points of access to the Bayfront will, by use, become major entrances to the different parts of the area. A significant portion of the visitors' and users' visual impressions are influenced by conditions at these locations. Hence, special consideration should be given to roadway design, including signage and lighting, landscaping, the protection of public views towards the Bay, and the siting and design of adjoining structures. Concurrent with the preparation of Phase I infrastructure design plans for E and H Streets, a Gateway plan shall be prepared for E and H Streets. Prior to issuance of certificates of occupancy for any projects within the District's jurisdiction in Phase I, the E and H Street Gateway plan shall be approved by the District and City's Directors of Planning and Building. The E and H Street Gateway plan shall be coordinated with the Gateway plan for J Street. All Gateway plans must conform with the setback policies and height limits in the PMP.

Policy 23.11: The landscape designs and standards shall include a coordinated street furniture palette including waste containers and benches, to be implemented throughout the Bayfront at appropriate locations.

Policy 23.12: As a condition for issuance of coastal development permits, buildings fronting H Street shall be designed to step away from the street. More specifically, design plans shall protect open views down the H Street Corridor by ensuring that an approximate 100-foot ROW width (curb–curb, building setbacks, and pedestrian plaza/walkway zone) remains clear of buildings, structures, or major landscaping. Placement of trees should take into account potential view blockage at maturity, and, trees should be spaced in order to ensure "windows" through the landscaping. Trees should also be considered to help frame the views and they should be pruned to increase the views from pedestrians and vehicles, underneath the tree canopy. In order to reduce the potential for buildings to encroach into view corridors, and to address the scale and massing impact, buildings shall step back at appropriate intervals or be angled to open up a broader view corridor at the ground plane to the extent feasible. All plans shall be subject to review and approval by the District. All future development proposals shall conform to District design guidelines and standards.

Policy 23.13: Prior to issuance of coastal development permits for projects within the District's jurisdiction, the project developer shall ensure that design plans for any large scale projects (greater than two stories in height) shall incorporate standard design techniques such as articulated facades, distributed building massing, horizontal banding, stepping back of buildings, and varied color schemes to separate the building base from its upper elevation and color changes such that vertical elements are interrupted and smaller scale massing implemented. These plans shall be implemented for large project components to diminish imposing building edges, monotonous facades and straight-edge building rooflines and profiles, and to avoid the appearance or effect of "walling off" the Bayfront.

Policy 23.14: Resort Conference Center (H-3) Development: In addition to policies 23.12 and 23.13 above, development of the Resort Conference Center (H-3) site shall incorporate additional building setbacks and stepbacks to further reduce the visual impact of building massing and to further widen view corridors towards the bay. Minimum building setbacks of 50 feet from the H Street right-of-way shall be required to result in a 145 foot wide minimum view corridor width at grade level with minimum tower stepbacks of 75 feet from the H Street right-of-way to generally achieve a 170 foot wide view corridor width at tower level.

Exhibit 4 to this Plan illustrates the general design parameters for the Resort Conference Center (RCC) site. The bayward portion of the RCC site shall be devoted to a mix of public open space, public plazas, limited amounts of parking, and low-scale development with ground floor commercial recreation and visitor commercial uses. Upper floor conference center/hotel uses are allowed. The inland portion of Parcel H-3 will be developed with hotel and conference center structures.

Exhibit 4 shows a setback of an average of 100 feet from the E Street right-of-way on the west side of the site and 50 feet from the E Street right-of-way on the north side of the site. This "esplanade" setback shall be for the creation of publicly accessible areas such as pedestrian promenades, bicycle access ways, landscaping, street furniture, and other pedestrian friendly features. Various public amenities, such as shade structures, benches, or bus stops are allowed within the esplanade.

In addition to the esplanade, this bayward portion shall be developed with a mix of public open spaces and structures to a maximum height of 35 feet. All structures shall include retail or restaurant uses on the ground floor in a pedestrian-friendly specialty shopping "village" style. Conference rooms or other uses associated with the hotel or conference center may be located on the upper level. A minimum of 40% of this portion of the site at ground floor shall be open plaza, seating (including seating for cafés), public art, and landscaping. Uses such as vendor carts, bicycle rentals, etc., shall be permitted in this area.

Within these broad use parameters, flexibility in the specific design and layout of the site is permitted. In order to achieve a lively, pedestrian oriented development attractive to the public and welcoming to visitors, E Street could be shifted inland to allow the development of additional public esplanade-type uses on the bay side of the street, at the adjacent Harbor Park. Retail uses could also be expanded into the area designated esplanade, as long as these structures are designed to create visual interest and variety at a human scale. The boundary between the esplanade and the commercial retail shown on Exhibit 4 is intended to be illustrative only, and it is expected that the distinction between the areas will be meandering and visually appealing.

To ensure that pedestrians can cross between the park and the RCC safely and easily, pedestrian crossing distances shall be minimized where feasible, and crosswalks aligned with retail nodes and points of interest.

On the inland portion, the tallest buildings on Parcel H-3 will be located in the southern portion of the parcel with building heights decreasing towards the north and west. The foregoing will not be interpreted to preclude incorporating secondary and tertiary setbacks along public streets. Hotel structures shall be no more than a maximum height of 240 feet and the conference facility height is limited to a maximum of 120 feet. Design for the hotel structures on Parcel H-3 shall avoid east-west monolith massing and shall include architectural articulation. The hotel structures shall not result in lot coverage exceeding 30% of the inland portion of the parcel.

Policy 23.15: Sweetwater District Lodging (S-1): Sweetwater District Lodging (S-1): Development of the Sweetwater District Lodging (S-1) shall consist of low-scale, low profile, lower-cost overnight accommodations such as a campground and/or RV park. A mix of camping facilities is encouraged. Limited meeting rooms, retail stores, and food service associated with the development shall be permitted. No structures over 1 story within a maximum height of 25 feet shall be permitted. Proposed development shall take into account potential sea level rise when site plans are prepared. The development shall incorporate a setback from the E Street view corridor as shown in Exhibit 5, where no structures shall be permitted.

Policy 23.16: Sweetwater District Mixed-Use Commercial Recreation/Marine Related Office Development (S-3). Development of the Sweetwater District Mixed Use development (S-3) shall incorporate setbacks of 50 feet from E Street in order to reduce visual and shading impacts of building massing and to widen view corridors towards the Bay. Building heights are limited to 45 feet and shall be located in the northeastern portion of the parcel in order to ensure views from the Bay Boulevard to the Bay are preserved to the extent feasible. The development shall incorporate a setback from the F Street view corridor as shown in Exhibit 5, where no structures shall be permitted.

Policy 23.17: All building height limits listed herein are measured from finished grade. Building pads shall not be raised from existing grade more than 8 feet.

24. Transit

The Project's transportation system was developed to focus vehicular activity on the eastern edges of the property, near I-5 and its interchanges, by placing a majority of the common parking areas on the eastern properties, while designing for pedestrian connections and transit service. This will result in narrower, more pedestrian-friendly streets along the waterfront. In order to reduce traffic-related impacts within the Chula Vista Bayfront Master Plan area, the following transit policies shall be considered in the development of the Chula Vista Bayfront Master Plan:

Policy 24.1: The project shall be designed to encourage the use of alternate transportation by including the H Street transit center close to the rail line, bike and pedestrian pathways, water taxis, and a private employee parking shuttle.

Policy 24.2: The project shall include connections to the planned Bayshore Bikeway and provide an additional local bikeway loop that will be safer and more scenic as it is located closer to the water.

Policy 24.3: The District and City shall explore the operating and funding potential for a shuttle service that would link various destinations within the western portions of Chula Vista, including the Chula Vista Bayfront Master Plan area. Implementation of the Chula Vista Bayfront Shuttle is anticipated to include participation by commercial development within the Chula Vista Bayfront Master Plan area.

Policy 24.4: The Chula Vista Bayfront shuttle will service the Chula Vista Bayfront Master Plan area with a key focus on connecting general users to and from: downtown areas east of I-5, the resort conference center, the residential project, park areas, and existing trolley stops. The shuttle system shall be designed with the following design considerations:

a) Ensure that it has fewer stops than a conventional bus and is located as close as possible to the major traffic generators.

b) Plan the general route of the transit shuttle to travel along Third Avenue between F Street and H Street, along F Street between Woodlawn Avenue and Third Avenue, along Woodlawn Avenue between E Street and F Street, along E Street, Marina Parkway, Street C, and Street A within the Bayfront development area, and along H Street between the Bayfront and Third Avenue
c) Plan the route to operate as a two-way loop with stops in both directions.
d) Plan for shuttles to initially run every 15 minutes.
e) Consider a private shuttle system to transport employees between the H-18 parking structure and the H-3 parcel in the Harbor District.

Policy 24.5: Shuttle service shall be phased concurrent with development. At a minimum, service shall be provided upon the issuance of Certificate of Occupancy for either the H-3 resort conference center hotel or the 500th residential unit. Additional stops shall be provided at the Signature Park, the Recreational Vehicle Park, the H-18 parking structure, and the Park in Otay District, as these uses are developed.

Policy 24.6: In the Harbor District, typical parking requirement standards for high intensity uses may be reduced if it can be demonstrated that the use will be adequately served by alternative transit.

Policy 24.7: In order to reduce transportation-related air quality impacts, the following items should be encouraged at the project-level planning phase:

a) Limit idling time for commercial vehicles, including delivery and construction vehicles.
b) Use low- or zero-emission vehicles, including construction vehicles.
c) Promote ride sharing programs, for example, by designating a certain percentage of parking spaces for ride sharing vehicles, designating adequate passenger loading and unloading and waiting areas for ride sharing vehicles, and providing a web site or message board for coordinating rides.
d) Provide the necessary facilities and infrastructure to encourage the use of low- or zero-emission vehicles (e.g., electric vehicle charging facilities and conveniently located alternative fueling).
e) Provide public transit incentives, such as free or low-cost monthly transit passes.
f) For commercial projects, provide adequate bicycle parking near building entrances to promote cyclist safety, security, and convenience. For large employers, provide facilities that encourage bicycle commuting, including (for example) showers, lockers, locked bicycle storage or covered or indoor bicycle parking.
g) Institute a telecommute work program. Provide information, training, and incentives to encourage participation. Provide incentives for equipment purchases to allow high-quality teleconferences.
h) Provide information on all options for individuals and businesses to reduce transportation-related emissions. Provide education and information about public transportation.

Policy 24.8: The District and the City shall participate in a multi-jurisdictional effort conducted by the California Department of Transportation (Caltrans) and San Diego Association of Governments (SANDAG) to assist in developing a detailed I-5 corridor-level study that will identify transportation improvements along with funding, including federal, state, regional, and local funding sources, and phasing that would reduce congestion management with Caltrans standards on the I-5 South corridor from the SR-54 interchange to the Otay River. Local funding sources identified in this Plan shall include fair-share

contributions related to private and/or public development based on nexus as well as other mechanisms.

25. In-water Activities

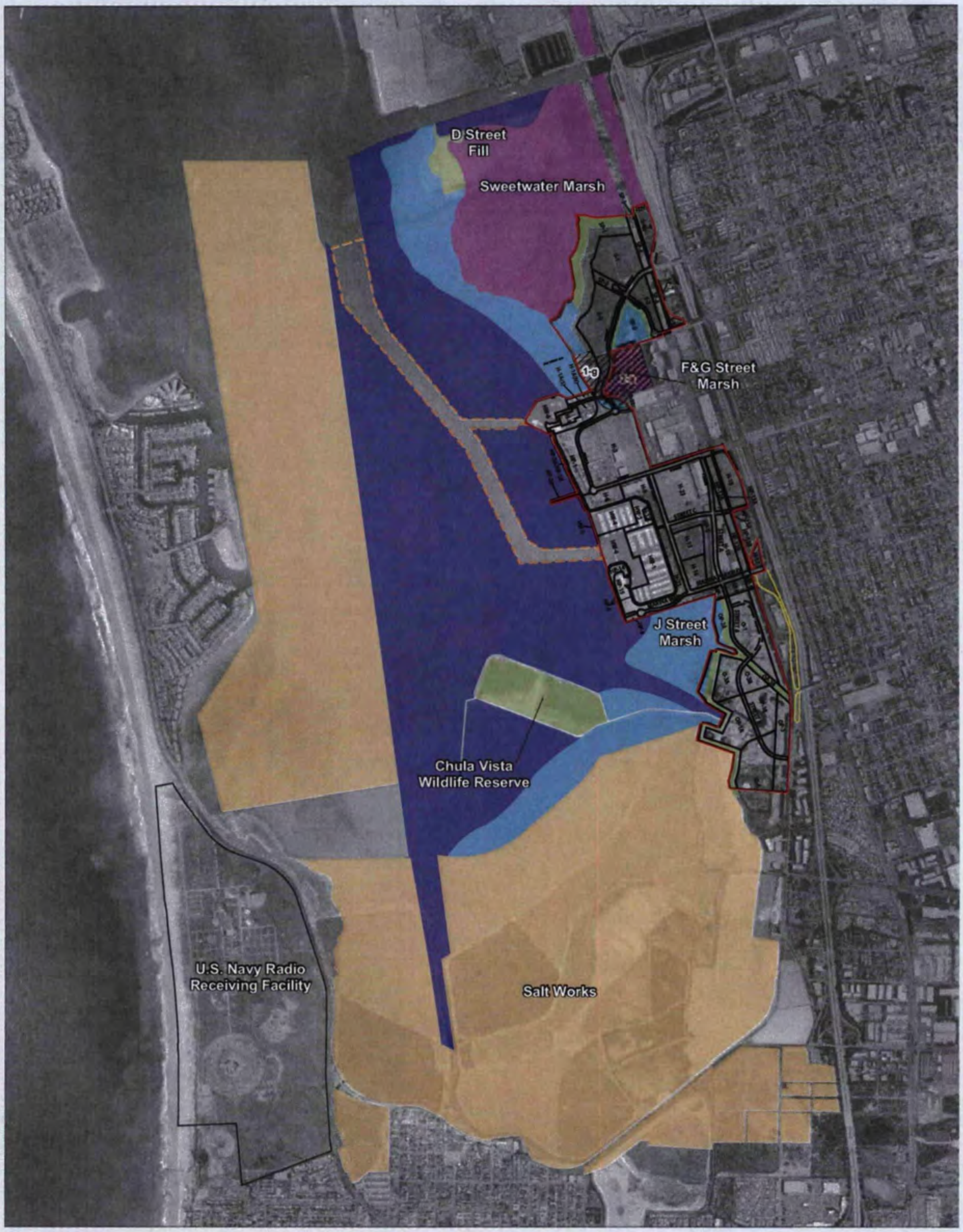
Policy 25.1: Excess dredge material from within the project area shall be tested for beach compatibility and placed on local beaches if suitable.

Policy 25.2: Development in San Diego Bay waters shall be reviewed for potential impacts to open water (foraging) and eelgrass, including any direct (e.g., construction activity) and indirect (e.g., shading from structures or boats) impacts. Efforts must be made to maintain the eelgrass habitat available and improve water quality. No net loss of eelgrass meadows shall be permitted. Pre-construction and post-construction eelgrass surveys shall be prepared in full compliance with the "Southern California Eelgrass Mitigation Policy or any later revised policy adopted by the National Marine Fisheries Service. Any existing eelgrass impacted shall be replaced at a minimum 1.2:1 ratio, in accordance with the Southern California Eelgrass Mitigation Policy. In addition, impacts to open water habitat shall be assessed and mitigated.

Policy 25.3: Prior to commencement of any in water development that involves disturbance of the subtidal water bottom, surveys will be done of the project area and a buffer area to determine the presence of the invasive alga *Caulerpa taxifolia*. The survey protocol shall be prepared in consultation with the Regional Water Quality Control Board, the California Department of Fish and Game, and the National Marine Fisheries Service.

26. Signage

Policy 26.1: Signs shall be designed and located to minimize impacts to visual resources. Signs approved as part of commercial development shall be incorporated into the design of the project and shall be subject to height and width limitations that ensure that signs are visually compatible with surrounding areas and protect scenic views. Permitted monument signs shall not exceed eight feet in height. Free-standing pole or roof signs are prohibited. Permanent advertising signs and banners shall be prohibited in public beaches and beach parks.



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0 1,000 2,000 Feet

AERIAL SOURCE: DIGITAL GLOBE, MARCH 2007

- National Wildlife Refuge (San Diego Bay Unit)*
- Sweetwater Marsh National Wildlife Refuge*
- City of Chula Vista LCP Open Space Land Use Designation
- City of Chula Vista S-4 100 ft. No-Touch Buffer
- CVBMP Boundary
- Proposed Navigation Channel

Port Master Plan - Planning District 7
Conservation Land and Water Designations

- Estuary
- Habitat Replacement
- Wetland

Exhibit 1
Wildlife Habitat Areas

(Defined by § 3.1 of the Chula Vista Bayfront Master Plan Settlement Agreement; the agreement prevails over any conflict with this exhibit.)

*National Wildlife Refuge lands are included in the definition of Wildlife Habitat Areas for the sole purpose of addressing adjacency impacts and not for the purpose of imposing affirmative resource management obligations with respect to the areas within the National Wildlife Refuge lands.

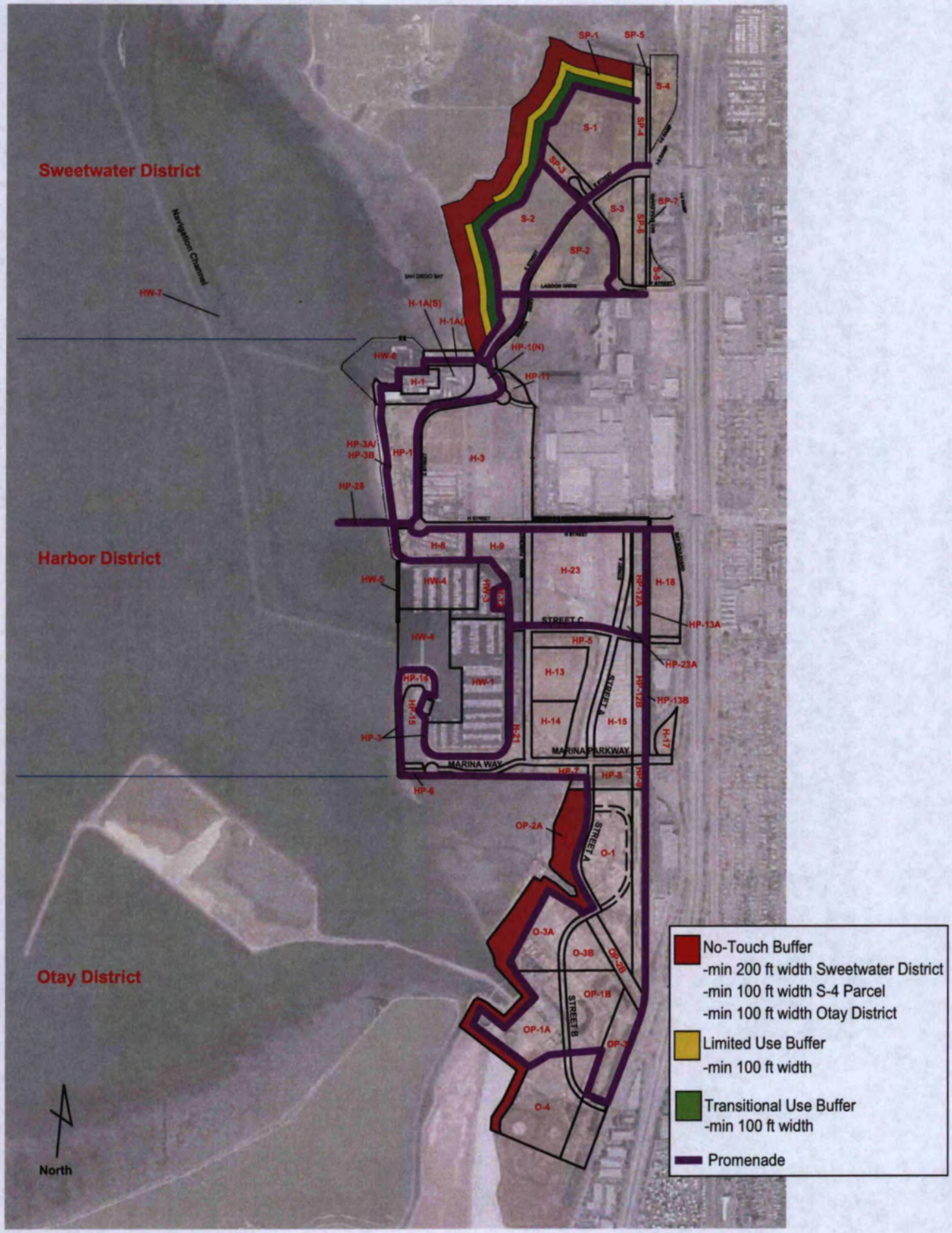

Exhibit 2 – Buffer Areas

(Defined by § 4.1.3 and 4.1.4 of the Chula Vista Bayfront Master Plan Settlement Agreement; the agreement prevails over any conflict with this exhibit)

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EXHIBIT 3

Exhibit 3 outlines the metholodogies for determing that the goals of the Energy Section are met. The Sample Worksheets are for illustration purposes, to provide a format which may be used both by Developments and by the City of Chula Vista's Building Department. Note that the Energy Section outlines requirements and approaches for projects which will be subject to future codes, regulations, tariffs, and technologies, all of which are subject to change. When clarifications are needed, they will be provided by the City of Chula Vista.

Baseline. The term "Baseline" refers to the amount of energy against which the energy reduction will be measured.

SAMPLE Worksheets. Sample worksheets are provided as suggested approaches. Actual worksheets for calculating the energy requirements should be coordinated with the City of Chula Vista Building Department.

Title 24 Path. Title 24 language refers to the "Standard Budget" and "Proposed Budget." The Whole Building Performance Method, which generates the Standard and Proposed Energy Budgets, is specifically for energy uses within a conditioned building, and does not include lighting which is in Interior Unconditioned Spaces or lighting which is outside. However, for the purposes of the Energy Section, this lighting energy will be added to the energy budgets for the conditioned building, and the combined energy uses will become the Baseline for the "Title 24 Path." Each of the various energy uses will be converted into Site kBtu, except for the final 5% energy reduction waiver allowed for Ongoing Measurement and Verification.

LEED Path. LEED language refers to the "Baseline Design" and "Proposed Design." The LEED Path Baseline is likely to be different and higher than the Title 24 Path Baseline because LEED counts all of the energy uses within the site boundary, some of which are not counted by Title 24. However, LEED is also likely to be better and more comprehensive in calculating overall energy performance features, such as district thermal plants, combined heat and power, natural ventilation, efficiencies in process loads, aggregating multiple buildings, and the benefits of renewable energy. Each of the various energy uses will be converted into dollars ($), except for the final 5% energy reduction waiver allowed for Ongoing Measurement and Verification.

If the LEED Path is chosen, the Development may be subject to an additional fee to the City of Chula Vista for a 3rd party plan check by an experienced LEED reviewer acceptable to the City. Recognizing that LEED Templates may not be complete at the time of the initial Building Department submittals, draft Templates may be used, at the discretion of the reviewer.

Natural Ventilation. When using Natural Ventilation (NV) to qualify as an energy reduction feature, the Development may qualify for a waiver of up to 10% if at least 75% of the area that would normally be cooled relies solely on natural ventilation strategies to help maintain comfortable temperatures. Pro-rations are possible.

City of Chula Vista Sponsored Energy Efficiency Program. Refer to the appropriate City ordinances for details on this program.

Measurement and Verification. Each Development shall develop and implement an ongoing Measurement and Verification (M&V) Plan consistent with the International Performance Measurement and Verification Protocol (IPMVP) Volume III, Concepts and Options for Determining Energy Savings in New Construction, April 2003. The Development may choose either Option B or Option D. If the LEED Path is chosen, the M&V Plan should be consistent with Credit EAc5, except that LEED only requires one year of implementation, and the Energy Section of this Agreement requires M&V to be ongoing.

Demand Response Tariffs. Developments which enroll in SDG&E Demand Response rate tariff(s) which are designed to reduce the load on the electric grid during critical times may be awarded up to a 5% waiver.

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EXHIBIT 3

SAMPLE Worksheet A: Title 24 Path

Name: Example Development

Description[1]	Source of Info (Attachments)	Input Standard	Input Proposed	Typical Units of Measure	Convert to Site kbtu	Standard = Baseline	Proposed	Units	Minimum % Reduction	Actual % Reduction
15.2.1 MINIMUM EFFICIENCY										
Title 24 Whole Building Performance	T24 UTIL-1, Part 1			Source TDV kbtu/sf-yr					15%	
15.2.2 CALCULATE BASELINE AND REDUCTIONS										
A. Energy Uses										
T24 Electricity	T24 UTIL-1, Part 2			Site KWH/year	3.413	-	-	kBtu		
T24 Gas	T24 UTIL-1, Part 2			Site Therms/year	100.000	-	-	kBtu		
T24 Lighting Outside and Uncond	Worksheet A-LTG	-	-	Site KWH/year	3.413	-	-	kBtu		
A. Summary of Efficiency of End Uses						-	-	kBtu		
B. Renewable Energy Contributions										
PV: within Development	CSI calculation or PV-Watts[2]	n/a		Site KWH output/year	3.413	n/a	-	kBtu		
PV: Credited from Project		n/a		Site KWH output/year	3.413	n/a	-	kBtu		
Solar Thermal: within Development	F-Chart or equal	n/a		Site kbtu offset/year	1.000	n/a	-	kBtu		
Other	as appropriate	n/a		as appropriate		n/a				
B. Combined Renewable Reductions										
C. Natural Ventilation	Worksheet C						0% to 10%			
D. Chula Vista Program Savings	Confirm with Program Administrator									
Verified Electricity Savings		n/a		Site KWH	3.413		-	kBtu		
Verified Gas Savings		n/a		Site Therms	100.000		-	kBtu		
D. CV Program Combined Reduction										
E. Ongoing Measure & Verify	Worksheet E						Required			
F. Demand Response Tariff	Worksheet F						0% to 5%			
TOTAL REDUCTION FROM BASELINE (Must be at least 50% Reduction)										**0.0%**

NOTES TO WORKSHEET A

Note 1: If the Development includes more than one building, then use multiple Worksheets, or, add backup calculations or line items to this spreadsheet, as most appropriate.

Note 2: Final photovoltaic design and output informatio shall use industry standard software, including at least site location, array orientation, array tilt, and system efficiency. California Solar Initiative (CSI) rebate calculations and PV-Watts are examples of acceptable software.

EXHIBIT 3

Worksheet A-LTG: Lighting Outside and in Interior Unconditioned Spaces

Name: Example Development

Category[1]	Source of Info (Attachments)	T24 Allowed Watts	Proposed Watts	Occupancy	hours /day[2]	Days /year	Hours /year	Standard KWH/yr	Proposed KWH/yr
Unconditioned spaces	T24 LTG Forms						-	-	-
Unconditioned spaces	T24 LTG Forms						-	-	-
Unconditioned spaces	T24 LTG Forms						-	-	-
Unconditioned spaces	T24 LTG Forms						-	-	-
Unconditioned spaces	T24 LTG Forms						-	-	-
General Site Illumination (Tradable)	T24 OLTG Forms						-	-	-
General Site Illumination (Tradable)	T24 OLTG Forms						-	-	-
General Site Illumination (Tradable)	T24 OLTG Forms						-	-	-
General Site Illumination (Tradable)	T24 OLTG Forms						-	-	-
General Site Illumination (Tradable)	T24 OLTG Forms						-	-	-
Specific Applications (Non-Tradable)	T24 OLTG Forms						-	-	-
Specific Applications (Non-Tradable)	T24 OLTG Forms						-	-	-
Specific Applications (Non-Tradable)	T24 OLTG Forms						-	-	-
Signs (Non-Tradable)	T24 OLTG Forms						-	-	-
Signs (Non-Tradable)	T24 OLTG Forms						-	-	-
Totals (Subtotals are inputs to Worksheet A)								-	-

NOTES TO WORKSHEET A-LTG

Note 1: If more lines are needed, create a spreadsheet in similar format, and enter above, as appropriate.

Note 2: For average runtimes, use the hours in this chart, unless proposer demonstrates to the Bldg Department's satisfaction that a different value should be used.

EXHIBIT 3

SAMPLE Worksheet B: LEED Path

Name: Example Development

Description	Source of Info (Attachments)	Standard or Baseline	Proposed	Typical Units of Measure	Virtual Rate	Baseline	Proposed	Units	Minimum % Reduction	Actual % Reduciton	
15.2.1 MINIMUM EFFICIENCY											
Title 24 Whole Building Performance	T24 UTIL-1, Part 1			Source TDV kbtu/sf-yr					15%		
15.2.2 CALCULATE BASELINE AND REDUCTIONS											
A. Energy Costs: LEED Performance Rating Method (PRM) EAp2/c1 Letter Template											
Conditioned Building(s)	LEED EAp2/c1 Letter Template	*Included*	*Included*								
Other energy uses on site		*Included*	*Included*								
Lighting: Outside and Uncond		*Included*	*Included*								
Onsite Renew Energy: Development		*Included*	*Included*								
Campus Renew Energy: Project		*Included*	*Included*								
Other		*Included*	*Included*								
Natural Ventilation		May be included in LEED EAp2/c1, OR, use Worksheet C									
Electricity (Summary)	LEED EAp2/c1 Section 1.8 Summary[1]			kWh	#DIV/0!			Site $			
Natural Gas (Summary)				therms	#DIV/0!			Site $			
A. Summary of Efficiency of Energy Costs						$ -	$ -	Site $			
B. Combined Renewable Reductions	Included in EAp2/c1 above										
C. Natural Ventilation	May be included in LEED EAp2/c1 above, OR, use Worksheet C										
Alternate:	Worksheet C						0% to 10%				
D. Chula Vista Program Savings	Confirm with Program Administrator										
Verified Electricity Savings				Site KWH	#DIV/0!		#DIV/0!	Site $			
Verified Gas Savings				Site Therms	#DIV/0!		#DIV/0!	Site $			
D. CV Program Combined Reduction											
E. Ongoing Measure & Verify	LEED EAc5. See Worksheet E.						Required				
F. Demand Response Tariff	Worksheet F						0% to 5%				
TOTAL REDUCTION FROM BASELINE (Must be at least 50% Reduction)											**0.0%**

NOTES TO WORKSHEET B

Note 1: LEED EAp2/c1 Letter Template: Section 1.8, "Energy Cost and Consumption by Energy Type - Performance Rating Method Compliance Table"

EXHIBIT 3

SAMPLE Worksheet C: Natural Ventilation

Name: Example Development

When using Natural Ventilation (NV) to qualify as an energy reduction feature for this Agreement, the Development may qualify for a waiver if at least 75% of the area that would normally cooled includes effective natural ventilation strategies to help maintain comfortable temperatures. A 5% waiver is granted if the area is also served by an energy or cooling system drawing energy from the grid. A 10% waiver is granted if the area is not served by an energy or cooling system drawing from the grid. The waiver may be prorated if the area is less than 75%. Final determination of normally cooled areas are at the discretion of the Building Department. For example, in CA Climate Zone 7, spaces such as warehouses and kitchens do not normally have electric cooling.

Two approaches are possible:
1. A Development may use a performance approach, such as macro-flow or Computational Fluid Dynamics (CFD) modeling, to design and confirm the maintenance of comfort using natural ventilation techniques.

2 . As an alternate, the prescriptive calculations outlined in the Collaborative for High Performance Schools (CHPS) may be used. CHPS identifies an approach to achieving ventilation strategies which are likely to be effective in helping to maintain interior comfort when outside conditions are moderate. Even though the CHPS program targets school campuses, the approach is useful for many occupancies. It is publicly available at www.chps.net. Suggested references are from CHPS 2006 Volume II Best Practices Manual - Design, HVAC Guidelines, Sections TC 13 (Cross Ventilation), TC-14 (Stack Ventilation), and TC-15 (Ceiling Fans).

The designer should follow the CHPS guidelines. To satisfy the prescriptive approach, the following table may be used. Inlets and Outlets should each be at least 4% of the floor area of the space, totalling at least 8%. Ideally they are on opposite sides, but at a minimum may be on perpendicular walls. Inlets are to be on the side which is typically windward, and lower than outlets.

Space Name	Source of Cooling	Conditioned Floor Area (CFA)	Qualifying CFA	Performance or Prescriptive Calculation	Prescriptive: Inlet (Windward)			Prescriptive: Outlet (Leeward)				
					Area	Orientation	% CFA	Area	Orientation	% CFA	higher than inlet	opposite or corner wall
Space A	NV with grid cooling											
Space B	NV with grid cooling											
Space C	NV with grid cooling											
Subtotal:			**0**									
Space D	NV only											
Space E	NV only											
Space F	NV only											
Subtotal:			**0**									
Other spaces	no NV											
Total Normally Conditioned Floor Area		-										

CFA which is Naturally Ventilated, with Grid Cooling	0	
Energy Reduction Allowed		

CFA Which is Naturally Ventilated Only	0	
Energy Reduction Allowed		

Combined Energy Reduction Allowed	

CFA: NV + grid	Reduction
0%	0%
15%	1%
30%	2%
45%	3%
60%	4%
75%	5%

CFA: NV Only	Reduction
0%	0%
15%	2%
30%	4%
45%	6%
60%	8%
75%	10%

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EXHIBIT 3

SAMPLE Worksheet D: Chula Vista Energy Efficiency Program

Name: Example Development

Refer to the appropriate City ordinances for details on this program, including, but not limited to:

City of Chula Vista Municipal Code Section 15.12 "Green Building Standards Ordinance"
City of Chula Vista Municipal Code Section 15.26.030 "Increase Energy Efficiency Ordinance"

SAMPLE Worksheet E: Ongoing Measurement & Verification (M&V)

Name: Example Development

Develop and implement a Measurement and Verification (M&V) Plan consistent with the International Performance Measurement and Verification Protocol (IPMVP) Volume III, Concepts and Options for Determining Energy Savings in New Construction, April 2003. The Development may choose either Option B or Option D.
M&V shall be on-going for the length of the lease.
Tenants shall have sub-meters for electricity. Sub-meters for gas and water should also be considered, but are not required.
The plan shall include a process for corrective action if energy performance goals are not achieved as planned. Refer to ASHRAE Guideline 14 for suggested ranges of discrepancy, appropriate to the meter, magnitude of energy uses, and overall plan.
If the LEED Path is chosen, the M&V Plan should be consistent with EAc5, except that LEED only requires one year of implementation, and the Energy Section of this Agreement requires M&V to be ongoing.

EXHIBIT 3

SAMPLE Worksheet F: Demand Response Tariffs

Name: Example Development

If the development chooses an SDG&E Demand Response tariff in which the customer has the option to manually or semi-automatically reduce electricity use when requested by the utility, then it will be awarded a 3 % waiver towards the overall energy reduction.

If the development chooses an SDG&E Demand Response tariff in which the utility can automatically reduce the customer's electricity use, then it will be awarded a 5 % waiver towards the overall energy reduction.

Meter(s)	Tariff	Manual or Semi-Automatic: Customer Controlled: 3%	Automatic, or Utility Controlled: 5%	% Reduction Awarded

EXHIBIT 3

Links for References used in EXHIBIT 3

Title 24 Building Energy Efficiency Standards	www.energy.ca.gov/title24/
Collaborative for High Performance Schools (CHPS) CHPS 2006 Volume II Best Practices Manual - Design	www.chps.net/dev/Drupal/node/31
IPMVP, Volume III, Concepts and Options for Determining Energy Savings in New Construction, April 2003.	www.evo-world.org Products & Services / IPMVP / Applications Volume III
Leadership in Energy and Environmental Design (LEED™)	www.usgbc.org
City of Chula Vista sponsored energy efficiency program	
Living Building Challenge	www.ilbi.org

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Exhibit 4
Resort Conference Center (H-3) Development

*Esplanade setback line intended to be illustrative only; distinction between esplanade and commercial retail is to be meandering and visually appealing.

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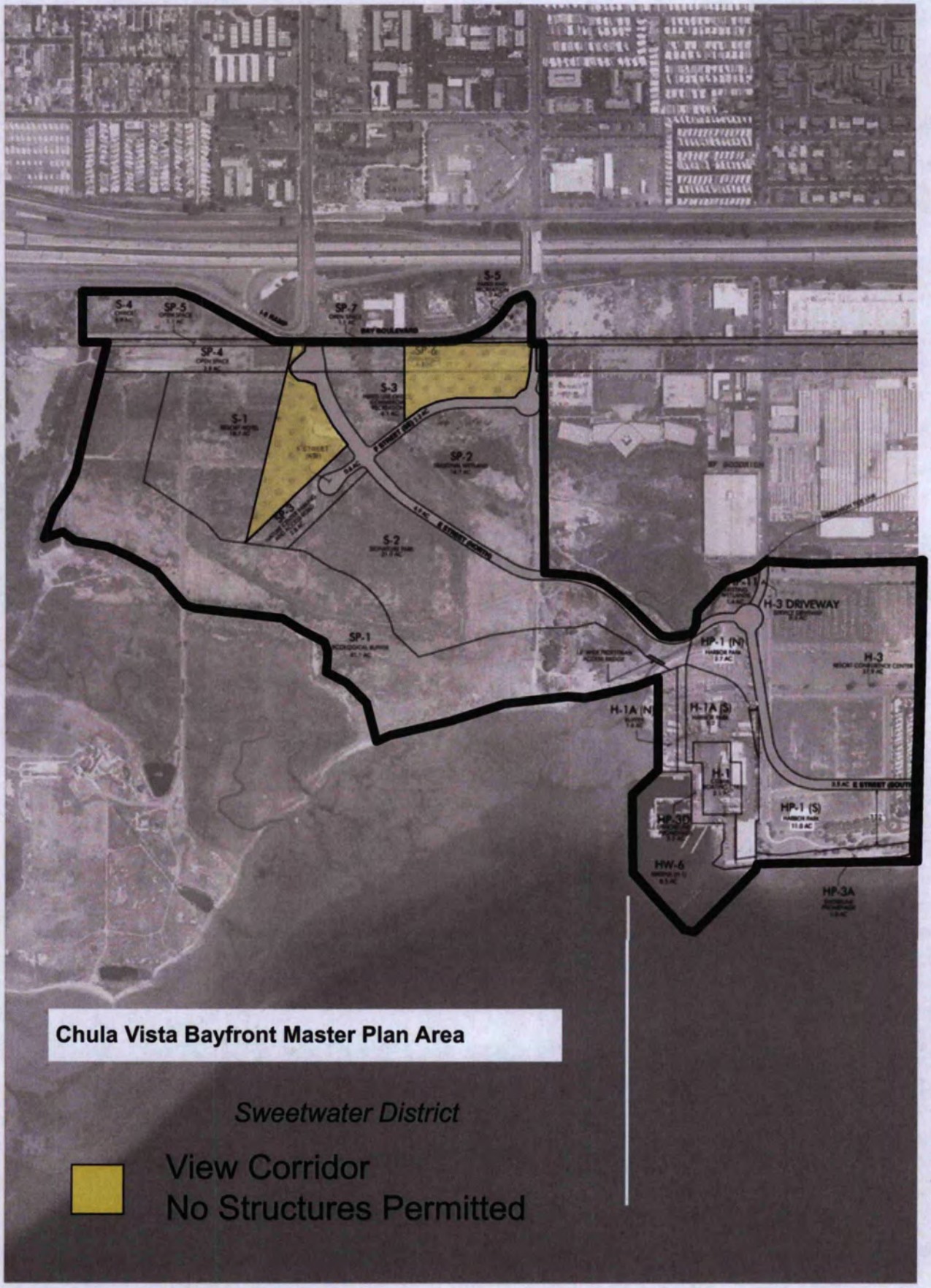

Exhibit 5
Sweetwater District (S-1/S-3) Development

REFERENCE
COPY
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(5)

RESOLUTION 2016-79

RESOLUTION APPROVING THE CHULA VISTA BAYFRONT NATURAL RESOURCES MANAGEMENT PLAN, A COORDINATED EFFORT BETWEEN THE SAN DIEGO UNIFIED PORT DISTRICT, THE CITY OF CHULA VISTA AND THE WILDLIFE ADVISORY GROUP

WHEREAS, the San Diego Unified Port District (District) is a public corporation created by the legislature in 1962 pursuant to Harbors and Navigation Code Appendix 1, (Port Act); and

WHEREAS, On May 4, 2010, the District, the City of Chula Vista (City), the Bayfront Coalition (Coalition), and the Redevelopment Agency for the City of Chula Vista (RDA) entered into the Chula Vista Master Plan Settlement Agreement (Settlement Agreement); and

WHEREAS, the Settlement Agreement requires that the District, the City, and RDA cause to be prepared a Natural Resources Management Plan (NRMP) for the Chula Vista Bayfront; and

WHEREAS, the Settlement Agreement requires the creation of a Wildlife Advisory Group (WAG) to advise the District and the City on the development and implementation of the NRMP; and

WHEREAS, the NRMP is required to meet specific management objectives to protect habitats and enhance the fish and wildlife populations of the Chula Vista Bayfront development; and

WHEREAS, the NRMP provides guidance for the implementation of the requirements in the Controlling Documents, which consist of the Settlement Agreement, Coastal Commission Development Policies, and the Mitigation Monitoring and Reporting Program for the Chula Vista Bayfront and also outlines strategies that may be considered for future grant opportunities; and

WHEREAS, the Settlement Agreement also requires the WAG to advise the District and the City on wildlife management issues and restoration plans related to the future development of the Chula Vista Bayfront; and

WHEREAS, the Settlement Agreement requires the District and City to provide administrative and staff support to the WAG, as necessary, to perform the functions and achieve the goals described in the Settlement Agreement; and

WHEREAS, since the WAG's first meeting on May 4, 2011, the group has met over thirty times; and

WHEREAS, over the course of these meetings, the WAG developed goals and objectives for the NRMP; and

WHEREAS, the NRMP promotes and enhances natural resources in the bay-estuarine, urban setting for a sustainable future that sets far-reaching goals for living with climate change, and envisions a thriving, healthy ecosystem that fosters the human experience of nature; and

WHEREAS, the NRMP is an important environmental guidance and implementation document, applicable to all development within the Chula Vista Bayfront project area; and

WHEREAS, all projects including both public and private will be evaluated by the District and City relative to furthering the goals, objectives, standards and strategies of the NRMP; and

WHEREAS, the NRMP is designed to offer varied opportunities for human encounters with nature that are engaging, tranquil, support human and ecological health and well-being, and are accessible to all; and

WHEREAS, once completed, the Chula Vista Bayfront will be a destination for global travelers as well as local residents and visitors, reflect strong planning and design principles for sustainability of resources, economic feasibility, and community benefit; and

WHEREAS, the NRMP was prepared in consultation with District and City staff and six separate WAG ad hoc committees in addition to several WAG meetings; and

WHEREAS, the NRMP was written to achieve the management objectives of the Settlement Agreement; and

WHEREAS, the NRMP includes establishing fenced buffer areas with specific types of fencing; prohibiting activities near and adjacent to buffer areas; enforcing leashing of cats and dogs at all times; buildings and structures designed to prevent bird strikes and predators from perching; establishing design guidelines for walkways, pathways, lighting, noise, landscaping, stormwater management, roads, and footpaths; providing year-round predator control, increased enforcement, signage, volunteer events and interpretive walks to educate residents and visitors; implementing integrated pest management; limiting boating impacts; reviewing alternatives for conducting restoration of existing wetlands; public park restrictions; and implementing water quality improvement projects; and

WHEREAS, the Settlement Agreement states as a management objective that, the District, City, and RDA are not required to expend funds for NRMP implementation until project-related revenues are identified and impacts initiated; and

WHEREAS, the first draft of the NRMP was available for public comment on July 1, 2013; and

WHEREAS, during public comment the WAG provided approximately 300 comments which were reviewed and District and City staff; and

WHEREAS, District and City staff worked with a WAG ad-hoc committee on a nearly weekly basis to revise the NRMP and to resolve as many outstanding issues as possible prior to the second public review of the NRMP; and

WHEREAS, on November 2, 2015, the second draft of the NRMP was available for a 45 day public review via the Districts website; and

WHEREAS, the WAG specifically requested that the review period include two WAG meetings; and

WHEREAS, the WAG met on December 3 and 10, 2015 to obtain consensus on 143 comments from WAG members which were submitted on December 16, 2015; and

WHEREAS, other public comments on the draft plan included 3 comments from a Chula Vista resident and 31 comments on the implementation table from the Chair of the WAG; and

WHEREAS, District and City staff and the WAG ad-hoc committee met several times to review the response to comments on the second draft of the NRMP and the responses to comments were provided to the WAG on February 29 and April 25, 2016; and

WHEREAS, the NRMP was revised to incorporate responses to the comments; and

WHEREAS, the WAG met on May 5, 2016 and voted to approve the NRMP and recommend forwarding the NRMP to the District and City Boards for approval; and

WHEREAS, the Settlement Agreement requires that the District and City approve the Natural Resources Management Plan and District staff recommends that the Board approve the Chula Vista Bayfront Natural Resource Management Plan and, pursuant to the Settlement Agreement, direct District staff to prepare

written notice of such approval to each party who signed the Settlement Agreement.

NOW, THEREFORE, BE IT RESOLVED that the Board of Port Commissioners of the San Diego Unified Port District does hereby approve the Chula Vista Bayfront Natural Resources Management Plan, and the Executive Director or her designee is hereby directed to provide written notice of such approval to each party of the Chula Vista Master Plan Settlement Agreement.

APPROVED AS TO FORM AND LEGALITY:
GENERAL COUNSEL

By: ~~Assistant~~/Deputy

PASSED AND ADOPTED by the Board of Port Commissioners of the San Diego Unified Port District, this 10th day of May, 2016, by the following vote:

AYES: Bonelli, Castellanos, Malcolm, Merrifield, and Nelson.
NAYS: None.
EXCUSED: Moore and Valderrama.
ABSENT: None.
ABSTAIN: None.

Marshall Merrifield, Chairman
Board of Port Commissioners

ATTEST:

Timothy A. Deuel
District Clerk

(Seal)

3165 Pacific Hwy.
San Diego, CA 92101

File #:2016-0170

DATE: May 10, 2016

SUBJECT:

RESOLUTION APPROVING THE CHULA VISTA BAYFRONT NATURAL RESOURCES MANAGEMENT PLAN, A COORDINATED EFFORT BETWEEN THE SAN DIEGO UNIFIED PORT DISTRICT, THE CITY OF CHULA VISTA, AND THE WILDLIFE ADVISORY GROUP

EXECUTIVE SUMMARY:

The San Diego Unified Port District (District), the City of Chula Vista (City), and the Bayfront Coalition (Coalition) entered into a Settlement Agreement pertaining to the Chula Vista Bayfront Master Plan (CVBMP). The Settlement Agreement obtained the Coalition's support of the CVBMP, with the Coalition seeking additional environmental protection measures via the Settlement Agreement. The Settlement Agreement requires the creation of a Wildlife Advisory Group (WAG) to oversee the development of a Natural Resources Management Plan (NRMP) that meets specified management objectives intended to protect and enhance fish and wildlife populations and habitats of the Chula Vista Bayfront. The WAG consists of 26 members including the Bayfront Coalition, port tenants, City residents, developers and resource agencies.

The NRMP was prepared in conjunction with the City and the WAG to achieve all of the management objectives of the Settlement Agreement. The Settlement Agreement requires the District and City to approve the NRMP. Based on several years of rigorous and thoughtful collaboration among the parties, the NRMP is now complete. Therefore, staff recommends that the Board approve the Chula Vista Bayfront NRMP and provide a written notice of approval to each party who signed the Settlement Agreement.

RECOMMENDATION:

Adopt a resolution approving the Chula Vista Bayfront Natural Resources Management Plan.

FISCAL IMPACT:

Implementation of the NRMP is required to be funded and implemented as set forth in the Settlement Agreement, Section 4. The Settlement Agreement Section 4.1.1 states the District and City are not required to expend funds for NRMP implementation until project-related revenues are identified and impacts initiated.

The Core Strategies in the NRMP are actions that will be taken to implement the requirements of the Controlling Documents, which are described in more detail below. Most Core Strategies will be

ACTION TAKEN: 05-10-16 Resolution 2016-79

implemented by the proponent of a specific project, with the project proponent responsible for funding the strategy. In the case of public works projects such as streets and parks, the District and City will typically be the project proponent. Other Core Strategies that are related to the Bayfront administrative and regulatory functions will be implemented by the District and/or City. Costs to the District and/or City related to implementing Core Strategies, either as a capital cost or an on-going maintenance cost are being included in all cost estimates developed for public infrastructure in the Chula Vista Bayfront project.

Other strategies described in the NRMP, other than Core Strategies, are advisory and no funding source is identified at this time. Some of these strategies may be reasonably incorporated into designs or procedures. Others are intended to be the basis for seeking funding from grants or other sources.

COMPASS STRATEGIC GOALS:

The Natural Resources Management Plan for the Chula Vista Bayfront will guide the future development while protecting the areas natural resources.

This agenda item supports the following Strategic Goal(s).

- A Port that the public understands and trusts.
- A vibrant waterfront destination where residents and visitors converge.
- A Port with a healthy and sustainable bay and its environment.
- A Port with a comprehensive vision for Port land and water uses integrated to regional plans.
- A Port that is a safe place to visit, work and play.
- A financially sustainable Port that drives job creation and regional economic vitality.

DISCUSSION:

Background and Scope

In May 2010, when the CVBMP Environmental Impact Report (EIR) was certified (BPC Resolution No. 2010-78), the District, the City, and the Coalition entered into the Settlement Agreement. The Settlement Agreement (Clerk's Doc. No. 56523) requires the creation of a Wildlife Advisory Group (WAG) (Settlement Agreement, Section 10) to oversee the development of the Chula Vista Natural Resources Management Plan (NRMP). The NRMP is required to meet specific management objectives to protect habitats and enhance the fish and wildlife populations of the Chula Vista Bayfront development and adjacent refuge lands. The NRMP provides guidance for the implementation of the requirements in the controlling documents and also outlines strategies that may be considered for future grant opportunities. The Settlement Agreement also requires the WAG to advise the District and the City on wildlife management issues and restoration plans related to the future development of the Chula Vista Bayfront.

The District and City staff role, as outlined in Section 10.2 of the Settlement Agreement, is to provide administrative and staff support to the WAG, as necessary, to perform the functions and achieve the goals described in the Settlement Agreement. Additional details about the WAG's purpose are provided in Section 10.3 of the Settlement Agreement.

The WAG consists of 26 members, as follows:

- Seven representatives who signed the Settlement Agreement from the Bayfront Coalition include:
    - Environmental Health Coalition
    - San Diego Audubon Society
    - San Diego Coastkeeper
    - Coastal Environmental Rights Foundation
    - Southwest Wetland Interpretive Association
    - Surfrider Foundation - San Diego Chapter
    - Empower San Diego
- Two representatives from the Living Coast Discovery Center (former Chula Vista Nature Center), from both the education and operations programs;
- Three CVBMP developers/tenants, including Pacifica;
- One representative from the Chula Vista Resource Conservation Commission;
- One representative from the Chula Vista School District;
- Three residents from the City of Chula Vista;
- One representative from an eco-tourism based business;
- Two appointees from the District;
- Six representatives from resource agencies, including:
    - U.S. Fish & Wildlife Service (Refuges and Endangered Species)
    - California Department of Fish & Wildlife
    - National Marine Fisheries Service
    - Regional Water Quality Control Board
    - California Coastal Commission

Since the WAG's first meeting on May 4, 2011, the group has met over thirty times. District and City staff members have been working collaboratively to facilitate the WAG meetings. Over the course of these meetings, the WAG developed goals and objectives for both the group and the NRMP.

Chula Vista Natural Resources Management Plan

The NRMP promotes and enhances natural resources in the bay-estuarine, an urban setting for a sustainable future that sets far-reaching goals for living with climate change. The NRMP envisions a thriving, healthy ecosystem that fosters the human experience of nature. The NRMP is an important environmental guidance and implementation document, applicable to all development within the Chula Vista Bayfront project area. All projects including both public and private will be evaluated by the District and City relative to furthering the goals, objectives, standards and strategies of the NRMP.

The vision of the NRMP is, "To sustain habitats and ecosystems that protect and nourish both native resident and migratory fish and wildlife, especially those that are at risk and dependent on the south bay. The goals, objectives, and strategies articulated in the NRMP are intended to transform the way we conserve and restore nature in coastal urban environments with a changing global climate, and to preserve precious natural resources for generations to come."

The NRMP is designed to offer varied opportunities for human encounters with nature that are engaging, tranquil, support human and ecological health and well-being, and are accessible to all. Once completed, the Chula Vista Bayfront will be a destination for global travelers as well as local residents and visitors, reflect strong planning and design principles for sustainability of resources, economic feasibility, and community benefit.

NRMP Management Objectives

Staff in coordination with a WAG Ad-hoc Committee recommended to the Board, on April 10, 2012, to authorize an agreement with Tierra Data, Inc. to prepare the NRMP (BPC Resolution No. 2012-45). The NRMP (Attachment A) was prepared in consultation with District and City staff and six separate WAG ad hoc committees; working versions were also considered at several publicly noticed WAG meetings. The NRMP was written to achieve all of the management objectives of the Settlement Agreement (Section 3.2 and 4.1) which include:

Long term protection, conservation, monitoring and enhancement of:

- Wetland habitat, with regards to gross acreage as well as ecosystem structure, function and value.
- Coastal sage and coastal strand vegetation.
- Upland natural resources for their inherent ecological values, as well as their roles as buffers to more sensitive adjacent wetlands. Upland areas in the Sweetwater and Otay Districts will be adaptively managed to provide additional habitat or protection to create appropriate transitional habitat during periods of high tide and taking into account future sea level rise.
- Preservation of biological function of all Bayfront habitats servicing as avifauna for breeding, wintering, and migratory rest stop uses.
- Protection of nesting, foraging, and rafting wildlife from disturbance.
- Avoidance of actions within the proposed project area that would adversely impact or degrade of water quality in San Diego Bay or watershed areas or impair efforts of other entities for protection of the watershed.
- Maintenance and improvement of water quality where possible and coordination with other entities charged with watershed protection activities.
- Not required to expend funds for NRMP implementation until project-related revenues are identified.
- Coordinate with Resource Agencies regarding wildlife habitat area responsibilities.
- Designate no touch buffer areas with fencing to protect adjacent Wildlife Habitat Areas. The Wildlife Habitat Areas (Settlement Agreement Section 3.1) are defined as: 1) the National Wildlife Refuge lands, currently designated and designated in the future, in the South San Diego Bay and Sweetwater Marsh National Wildlife Refuge Units for the sole purpose of addressing adjacency impacts; 2) District wetlands, estuary and habitat replacement lands and open water; and 3) includes the no touch buffer.

To meet these objectives the NRMP also includes establishing fenced buffer areas with specific types of fencing; prohibiting activities near and adjacent to buffer areas; enforcing leashing of cats and dogs at all times; buildings and structures designed to prevent bird strikes and predators from perching; establishing design guidelines for walkways, pathways, lighting, noise, landscaping, stormwater management, roads, and footpaths; providing year-round predator control, increased enforcement, signage, volunteer events and interpretive walks to educate residents and visitors;

implementing integrated pest management; limiting boating impacts; reviewing alternatives for conducting restoration of existing wetlands; public park restrictions; and implementing water quality improvement projects.

NRMP Organization

This NRMP is organized hierarchically from broad to specific, starting with the Vision statement described above, then by goals, objectives, and strategies in each of the chapters. The Table of Contents reflects the underlying ecosystem-based management and ecosystem service themes carried throughout the plan, organized in the following groupings:

- Productive and Diverse Habitats and Communities
- Minimizing Harm to Wetlands and Marine Waters
- A Wildlife-Friendly Urban-Wildland Interface
- Maximum Ecosystem Services in the Built Environment and Open Space
- Education to Inspire and Promote the Human Experience of Nature
- Integration and Implementation

The final chapter on implementation integrates all of the previously presented work in the NRMP, prioritizes the work, and identifies roles and responsibilities. The supporting appendices provide detail on the background, approach to implementing this NRMP and the controlling documents.

NRMP Guiding Principles

The NRMP guiding principles are common elements throughout the plan and they describe the targets and desired outcomes to shape the NRMP goals, objectives and strategies.

Guiding Principle 1:	Consistency with the Coastal Commission Development Policies, Settlement Agreement, and all regulatory compliance requirements
Guiding Principle 2:	Ecosystem-based management and ecosystem services
Guiding Principle 3:	Exemplary transboundary connections and integrated planning
Guiding Principle 4:	Benefits from natural resources are accessible to all
Guiding Principle 5:	Best science for accountable adaptive management
Guiding Principle 6:	Planning is non-regulatory
Guiding Principle 7:	Collaborative action

NRMP Controlling Documents

The preparation of the NRMP was based on the controlling documents (NRMP Appendix I: Controlling Documents):

- Settlement Agreement;
- Coastal Commission Development Policies (adopted by CCC 2012), and;
- Mitigation Monitoring and Reporting Program for the Chula Vista Bayfront (BPC Resolution No. 2010-785).

The requirements from these documents are embedded into the NRMP's comprehensive approach for natural resources protection which is longer term and broader in scope then just regulatory and mitigation requirements alone.

NRMP Color Code

Controlling documents are referenced throughout the NRMP in a blue box. Implementation strategies are identified with a green bar to the left of the paragraph and are referenced as Core Strategies. Core strategies are actions that will be taken to implement the requirements of the Controlling Documents. All other strategies will be considered during future project approvals for both public and private projects, as applicable, and as part of future adaptive management. The strategies offered in the NRMP are intended to help decision-makers during project review and to seek grant funding.

Sea Level Rise

On August 12, 2015, the California Coastal Commission's (CCC) adopted the Sea Level Rise Policy Guidance to address sea level rise for Coastal Development Permits. The Policy Guidance provides a recommended approach to address sea level rise in coastal planning and development based on best available science. A range of adaptation strategies are suggested to limit and avoid coastal hazards.

Public Participation in the Development of the NRMP

The first draft of the NRMP was available for public comment on July 1, 2013. The WAG provided approximately 300 comments. These comments were reviewed and District and City staff worked with a WAG ad-hoc committee on a near-weekly basis to revise the NRMP and to resolve as many outstanding issues as possible prior to the second public review of the NRMP.

The second draft of the NRMP was available for a 45 day public review via the District's website on November 2, 2015. The WAG specifically requested that the review period include two WAG meetings. The WAG therefore met on December 3 and 10, 2015 to obtain consensus on 143 comments from WAG members which were submitted on December 16, 2015 (Attachment B). Other public comments on the draft plan included
3 comments from a Chula Vista resident (Attachment C) and 31 comments on the implementation table from the Chair of the WAG (Attachment D).

District and City staff and the WAG ad-hoc committee met several times to review the response to comments on the second draft of the NRMP. The responses to comments were provided to the WAG on February 29 and April 25, 2016. The NRMP was revised to incorporate responses to the comments.

The WAG met on May 5, 2016 and voted to approve the NRMP and recommend forwarding the NRMP to the District and City Boards for approval.

NRMP Future Review

Per the Settlement Agreement, the WAG will make recommendations regarding updates to the NRMP and meet a minimum of every 6 months for 10 years, then annually thereafter, to determine the NRMP's effectiveness and in achieving the management objectives (Settlement Agreement, Section 10.4). The Board of Port Commissioners and the Chula Vista City Council will be requested to approve any future amendments to the NRMP.

Conclusion

The Settlement Agreement requires the District and City to approve the Natural Resources Management Plan therefore; staff recommends that the Board approve the Chula Vista Bayfront Natural Resource Management Plan and direct staff to prepare a written notice of approval to each party who signed the Settlement Agreement.

General Counsel's Comments:

The Office of the General Counsel assisted in the process between the District, the City, and the WAG during which the NRMP was drafted pursuant to the Settlement Agreement entered into between the Coalition, the City, the District, and the Redevelopment Agency of the City of Chula Vista (now the Successor Agency to the Redevelopment Agency of the City of Chula Vista (RDA)) on May 4, 2010. In 2010 the District proposed an amendment to the Port Master Plan to provide a master plan for redevelopment of the Chula Vista Bayfront. In conjunction with the District's amendment to the Port Master Plan, the City proposed an amendment to its General Plan, Mid-Bayfront Specific Plan and Local Coastal Plan.

The Settlement Agreement was entered into by the parties in order to resolve any potential legal action, litigation or other action challenging the proposed amendment to the Port Master Plan, the City's Amendments, the infrastructure and development projects proposed therein, and the associated Draft Environmental Impact Report (Proposed Project). The District, the City and the RDA desired to obtain the Coalition's support for approval of the Proposed Project, and the Coalition desired to obtain additional measures for protection of the environment above and beyond those required by CEQA and any other federal, state and local laws and regulations applicable the Proposed Project.

The Settlement Agreement requires that, in recognition of the sensitivity of the natural resources and the importance of protection, restoration, management and enforcement in protecting those resources, the District, City and RDA prepare a NRMP designed to achieve certain minimum management objectives for Wildlife Habitat areas defined in the Settlement Agreement. The final adoption or any material amendments of the NRMP by the District and the City must also be reviewed and approved by the California Coastal Commission. Pursuant to the Settlement Agreement the WAG is required to review and monitor implementation of the approved NRMP in an ongoing capacity.

The Settlement Agreement contains a dispute resolution regarding NRMP implementation and enforcement which requires informal negotiations by the parties before submitting a dispute to the Board of Port Commissioners or the City Counsel. However, the decisions of the Board or City Counsel related to a dispute regarding implementation and enforcement of the NRMP are not binding on the Coalition. The Coalition may submit any unresolved disputes to the Superior Court of California for review pursuant to a petition for Writ of Mandate.

The District, City and RDA expressly acknowledged in the Settlement Agreement that, the funding commitments would include but not be limited to funding for personnel, overhead, and contractors or consultants to ensure implementation of the NRMP. Section 4.1.1 of the Settlement Agreement states that the District, City, and RDA are not required to expend funds for NRMP implementation

until project-related revenues are identified and impacts initiated. The Settlement Agreement also contains a “Waiver of Defense” provision whereby the District, the City and RDA agreed that, to the extent permitted by law, lack of funds shall not be a defense to any claim of failure to adequately fund implementation and enforcement of the adopted NRMP.

Environmental Review:
The proposed Board action would approve the Chula Vista Bayfront Natural Resources Management Plan, a component of the Chula Vista Bayfront Master Plan (CVBMP) and Port Master Plan Amendment (PMPA). The potential environmental impacts of the CVBMP, including the NRMP, were analyzed in the Chula Vista Bayfront Master Plan and Port Master Plan Amendment Final Environmental Impact Report (FEIR) (UPD #83356-EIR-658, SCH #2005081077), which was certified by the Board on May 18, 2010 (Resolution No. 2010-78).

Furthermore, the California Coastal Commission (CCC), in its Staff Report dated June 26, 2012, made the following California Environmental Quality Act (CEQA) findings for the proposed project (i.e., CVBMP PMPA): The proposed PMPA was the subject of an EIR under CEQA; the EIR was subject to public review and hearing and was adopted by the Board of Port Commissioners and the Chula Vista City Council; the District is the lead agency and the City of Chula Vista is the responsible agency for purposes of CEQA; and, both the City and the District jointly certified a FEIR for the projects in their jurisdictions. The CCC further found that, in the FEIR, the District identified that even after adopting all feasible mitigation measures, there would be the following unavoidable significant environmental impacts: direct significant impacts on Land/Water Use Compatibility, Traffic and Circulation, Aesthetics/Visual Quality, Air Quality, and Public Services (Library Services); and cumulative significant impacts on Traffic and Circulation, Aesthetics/Visual Quality, Air Quality, Public Services (Library Services), and Energy. Moreover, the CCC found that the District determined that specific economic, social, and other benefits of the proposed project outweigh the project’s unavoidable adverse environmental effects; and in making this determination, the District made statements of overriding considerations also adopted by the City. For example, the District identified the following overriding considerations: the project’s improvements to recreation, open space, public access and connectivity between upland Chula Vista and the bay; economic and social sustainability; the provision of new low-cost visitor public facilities, new recreational boating opportunities, a new pier, and improvements to the navigation channel; and the project’s protection of environmental resources. Therefore, the District determined that the benefits of the project outweigh its significant environmental impacts and, therefore, such impacts are considered acceptable. The CCC reviewed and evaluated the proposed PMPA and found that the impacts had been mitigated, and that the PMPA did not have the potential to result in significant individual or cumulative impacts to sensitive resources, recreation, or the visual quality of the environment of the coastal zone. The CCC further found that there were no feasible alternatives or feasible mitigation measures available which would substantially lessen any significant adverse effect which the PMPA may have on the environment. The CCC agreed that the benefits of the project include improvements to public access, recreation, visitor serving amenities, and that these outweigh any remaining impacts. The CCC therefore found the PMPA to be consistent with CEQA.

Pursuant to CEQA Guidelines Sections 15162 and 15168(c)(2), no new effects could occur as a result of, and no new mitigation measures would be required by, the NRMP. As such, the NRMP is within the scope of the project covered by the FEIR and CCC findings, and no further environmental review is required. Furthermore, the proposed project is not a separate “project” for CEQA purposes

but is a subsequent discretionary approval related to a previously approved project. (CEQA Guidelines § 15378(c); Van de Kamps Coalition v. Board of Trustees of Los Angeles Comm. College Dist. (2012) 206 Cal.App.4th 1036.) Accordingly, the proposed project is merely a step in furtherance of the original project for which environmental review was performed and no further environmental review is required.

In addition, the proposed Board action complies with Section 87 of the Port Act, which allows for the establishment and maintenance of those lands for open space, ecological preservation, and habitat restoration. The Port Act was enacted by the California Legislature and is consistent with the Public Trust Doctrine. Consequently, the proposed Board action is consistent with the Public Trust Doctrine.

Finally, the proposed Board action does not allow for “development,” as defined in Section 30106 of the California Coastal Act, or “new development,” pursuant to Section 1.a. of the District’s Coastal Development Permit (CDP) Regulations. Therefore, issuance of a Coastal Development Permit or exclusion is not required. However, each of the NRMP Core Strategies will require processing under the District’s CDP Regulations. The Board or District, on a case-by-case basis, will consider approval of these Core Strategies after the appropriate documentation under District’s CDP Regulations has been completed and authorized by the Board or District, if necessary

Equal Opportunity Program:

Not applicable.

PREPARED BY:
Eileen Maher
Principal, Environmental Conservation
Planning & Green Port

Attachment(s)

Attachment A:	Chula Vista Natural Resources Management Plan www.portofsandiego.org
Attachment B:	Response to WAG comments on draft NRMP
Attachment C:	Response to public comments on draft NRMP
Attachment D:	Response to WAG Chair comments on draft NRMP

Attachment B to Agenda Item No. 2016-0170

South Bay WAG Consensus Comments MATRIX

COMMENT INCORPORATOR	**DATE DECEMBER 16 (Response to comments 4/19/16)**
COMMENTOR South Bay Wildlife Advisory Group based on meetings of the WAG on December 3 and 10 where consensus was reached on these comments.	**ORGANIZATION OF COMMENTOR**
TITLE OF DOCUMENT Chula Vista Bayfront Master Plan Natural Resources Management Plan - Draft	**DATE OF DOCUMENT** November - 2015

NO.	PAGE NO.	ROMAN NUMERAL	LINE NO.	FIGURE / TABLE NO.	RECOMMENDED CHANGES *(Exact wording of suggested change)*	Priority	HOW COMMENT WAS INCORPORATED *(If not incorporated, why?)*
1.	1-15	1.6.4	34		Add Blue Box language stating what that WHA are SA Section 3.1		No change. This is a repeat of the Settlement Agreement. Also see page 1-7 lines 40-47 and page 1-8 lines 1-6.
2.	1-16	1.6.4.I.~~B~~	17		Add Blue Box to include Settlement Agreement sections 3.1 and 3.2		Change language to add all of Sections 3.1 and 3.2 of the ~~S~~settlement ~~A~~agreement in a blue box.
~~2.~~3	1-21		25		Although some ecosystem services provided by eelgrass are either already identified (e.g., fishery utilization [food], carbon sequestration, erosion protection, and moderation of extreme weather) or could be included in the broader "habitat for species" group identified here (e.g., nursery functions like refuge and forage habitat), additional habitat-related ecosystem services could be acknowledged. For instance, other functions eelgrass provides include primary productivity, water quality and clarity, and nutrient cycling.		Change language to add "eelgrass" symbol

South Bay WAG Consensus Comments MATRIX

NO.	PAGE NO.	ROMAN NUMERAL	LINE NO.	FIGURE / TABLE NO.	RECOMMENDED CHANGES *(Exact wording of suggested change)*	Priority	HOW COMMENT WAS INCORPORATED *(If not incorporated, why?)*
~~3.~~4	Ch 2, 3, Appdx D and elsewhere where SLR is addressed				**OVERALL COMMENT RELATED TO SEA LEVEL RISE:** The NRMP shall address sea level rise consistent with CA Coastal Commission's Sea Level Rise Guidance documents, including using the National Research Council's (2012) projections of potential sea level rise.	High and addresses many issues in the NRMP	Change language to add "The Port/City will utilize as appropriate the California Coastal Commission's Sea Level Rise Policy Guidance document"
~~4.~~5	2-1	2.0	3-4		Migratory shorebirds, such as the black brant, flock, rest and forage in the mudflats and wrack lines to regain their strength for migration for the long journey south.		Change language lines 3-6 to add "Migratory shorebirds, such as the black brant, flock, rest and forage in the mudflats and wrack lines to regain their strength for migration for the long journey south." Delete "Migratory shorebirds flock and find rest and forage in the mudflats and wrack lines of the intertidal shore. Ducks and geese such as the black brant rest and regain their strength for a long journey south."

South Bay WAG Consensus Comments MATRIX

NO.	PAGE NO.	ROMAN NUMERAL	LINE NO.	FIGURE / TABLE NO.	RECOMMENDED CHANGES *(Exact wording of suggested change)*	Priority	HOW COMMENT WAS INCORPORATED *(If not incorporated, why?)*
~~5.~~6	2-1		4-8		Eelgrass and sheltered intertidal shores are rich in juvenile fish feeding until they are large enough to gaining size and strength before entering the open ocean.		Change language to add "Eelgrass and sheltered intertidal shores are rich in juvenile fish feeding until they are large enough to enter the open ocean." Delete language "Eelgrass and sheltered intertidal shores are abundant in young fish gaining size and strength to enter ocean waters."
~~6.~~7	2-1		11-14		Nesting seabirds come to hatch nest and fledge their chicks on exposed flats where abundant silver fish, small enough for their young, school nearby.		Change language to add "Nesting seabirds come to nest and fledge their chicks on exposed flats where abundant silver fish, small enough for their young, school nearby." Delete language "Nesting seabirds come to hatch and fledge their chicks on exposed flats where abundant silver fish small enough for a young chick's begging school nearby."

South Bay WAG Consensus Comments MATRIX

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~~7.~~8	2-1		16-21		In the tidal transition that buffers storm surge and sea level rise - above the reach of today's spring tides - salt-tolerant grasses, herbs, and shrubs provide cover for specialized insects and their pollinator host flowers, beetles and black-tailed jackrabbits.		Change language to add "In the tidal transition that buffers storm surge salt-tolerant grasses, herbs, and shrubs provide cover for specialized insects and their pollinator host flowers, beetles and black-tailed jackrabbits." Delete language "In the tidal transition that serves to buffer storm surge and sea level rise, above the reach of today's spring tides, salt-tolerant grasses, herbs, and shrubs provide cover for specialized insects and their pollinator host flowers, beetles and the black-tailed jackrabbit.
~~8.~~9	2-2	2.1	6		Replace the word "seeks" with "proposes"		Change language to add "seeks" and delete "proposes".

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~~9.~~1	2-2	2.1	14		Add a new Key Message: "Sea Level Rise will provide unique opportunities to create/restore sensitive wetland habitats as well as pose threats to established and restored sensitive wetland habitats. The NRMP's required mitigation for impacts to these habitats must account for SLR effects; it will provide baseline information to facilitate future (non-required by mitigation) enhancements of wetland habitats – and connectivity among habitats - within and adjacent to the NRMP.		Change language to add "Sea Level Rise will provide unique opportunities to create/restore sensitive wetland habitats as well as pose threats to established sensitive wetland habitats."
~~10.~~	2-2	2.1	48		Add that this document will utilize, to the maximum extent feasible, adaptation approaches described in the CA Coastal Commission's SLR Policy Guidance.		Change language to add "The Port/City will utilize as appropriate the California Coastal Commission's Sea Level Rise Policy Guidance document"
~~11.~~	2-3	2.1	47		Add an objective for softening shorelines or creating living shorelines.		No change. Refer to objective 2.5-2
~~12.~~	2-4	GREENLINE			Revise to read: Prior to Project Approval of site-specific development proposals, the Port/City will review and approve studies prepared by the Project Proponent *or independent environmental consultants* that document the potential for impacts to eelgrass or open water.		Change language to add "or Port/City environmental consultant."
~~13.~~	2-4	II	10		The Southern Eelgrass Mitigation Plan (SCEMP) has been superseded by the California Eelgrass Mitigation Plan (CEMP), so all references to SCEMP should be changed to CEMP.		No change. Port/City understand that the SCEMP has been replaced by the CEMP, but no changes will be made to the blue box language, since they reference the controlling documents.

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~~14.~~	2-6	IV.C.			The guidelines for this plan must include a discussion regarding how the NRMP will track the acres of wetland mitigation habitats that are required by the plan and how changes in sea level that alter the acreage of each of those mitigation habitat sites (defined by the amount of each mitigation site that lies within the habitat's defined elevation range relative to MLLW) will be addressed or compensated, if acreage is "lost" due to SLR. This shall be included in the follow-on study noted in chapter 7 WAG comments. This should include a discussion about how adjacent wetland habitats within the NRMP boundary that are not part of the required mitigation could be utilized as transitional habitat to compensate for "lost" mitigation acreage.		No change. No changes will be made to the blue box language, since they reference the controlling documents.
~~15.~~	2-6	V.A., V.B.			NMFS supports item V.A. re: taking sea level rise into account when establishing wetland and riparian buffers. We're interested in being involved in the establishment of these buffers per V.B.		No change. The WAG will be involved in future adaptive management for the CVBMP
~~16.~~	Various (e.g., 2-5 through 2-8)	IV, VI, VIII			Although the proposed measures appear sufficient based on an initial review, it's unclear why there appears to be some inconsistency in mitigation and restoration language under different items. For instance, p. 2-5 IV identifies compliance with USACE regulations, specific mitigation ratios, and development of a restoration plan prior to grading impacts, while VI on p. 2-7 notes specific mitigation ratios but lacks USACE regulation compliance language or an identified restoration plan. In addition, VIII notes the need for, and components to include in, a restoration plan, and specifically identifies the use of a mitigation bank as an option. Perhaps this is just a result of incorporating information from the different controlling documents, but it seems like making the actions more consistent and simplifying them overall could make the NRMP easier to understand and implement, especially for contractor(s)/consultant(s) who have not been involved in its development.		No change. No changes will be made to the blue box language, since they reference the controlling documents.
~~17.~~	2-10	Greenline			Revise to read: Prior to Project Approval of site-specific project plans, the Port/City will review and approve studies prepared by the Project Proponent or *independent environmental consultants* per paragraph XII above.		Change language to add "or Port/City environmental consultant."
~~18.~~	2-11 through 2-13	I-IV			WAG strongly supports these items re: 1) wetland habitat values protection; 2) habitat enhancement and priorities; 3) marine nursery and bay-estuarine fishes; and 4) habitat enhancement objectives		No change. Comment noted.

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~~19.~~	2-13	Greenline			WHA's include the adjacent refuge. Identify the habitat types and acreages of habitat in the Wildlife Refuge WHAs. (Missing from Figure 7-1, which is referred to in this section), last paragraph,	Figure needs update	~~No change.~~ ~~The National Wildlife Refuge is not within the jurisdiction of the Port/City. Please reference the Refuge's Comprehensive Conservation Plan for this information.~~ Change language to add additional maps indicating the Refuge acreages and habitat types.
~~20.~~	2-13	IV.B			Strongly support establishing baseline conditions at selected, representative sites for all wetland habitat types within the NRMP to help develop the long-term monitoring and enhancement strategies that address the effects of SLR on mitigation sites and non-mitigation wetland areas.		No change. Please see Map 7-1 for baseline acreages.
~~21.~~	2-14	I-III			The NRMP must *include* (not "consider using") "conservation planning species" in its monitoring program. In addition, rapid assessment methods (CRAM) should be utilized to efficiently monitor general conditions within each wetland habitat type.		No change. Port/City to comply with the MMRP, CCDP and SA
~~22.~~	2-14		7		Please identify the section/page/table number for the list of NRMP conservation species to allow the reader to easily review the list of conservation species. We prefer it be located in Chapter 7.		No change. See Indicators of Healthy Habitats in Chapter 7
~~23.~~	2-14		19		This plan should summarize/integrate the long term data sets that describe the condition of the fauna, bathymetry, elevations as part of the description of the baseline conditions. Make page 1 A greenline 19-27.		No change. Information is available in bay-wide studies and the Integrated Natural Resources Management Plan for San Diego Bay.

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~~24.~~	2-14		37, 42		Remove "where practicable" from the text.		No change Port/City to comply with the MMRP, CCDP and SA
~~25.~~	2-15		1,21		Remove "where practicable" from the text.		No change Port/City to comply with the MMRP, CCDP and SA
~~26.~~	2-15	V	23-24		"Species of concern" has a specific meaning under the Endangered Species Act, and the species identified here do not qualify. NOAA "trust resources" would be a more appropriate term.		Change language to add "trust resources" and delete "Species of concern"
~~27.~~	2-15	V.B.	29-33		1) The statement that estuaries and eelgrass are habitat areas of particular concern (HAPC) is correct, and we're glad to see it included. HAPCs are subsets of essential fish habitat (i.e., EFH HAPC instead of "Essential Fish Habitat of Particular Concern" as identified in the NRMP). 2) Eelgrass and estuaries are designated as HAPCs under the Pacific Coast Groundfish Fishery Management Plan (FMP), and of the species noted under V.B., California scorpionfish is the only one managed under that FMP. Pacific sardine are managed under the Coastal Pelagic Species FMP, while the other species, spotted sand bass and yellowfin croaker, could still be considered NMFS trust resources (e.g., under the Fish and Wildlife Coordination Act). See also related comment # 19)		Change language to delete "essential fish" and add "area". Add "habitat areas of particular concern are a subset of essential fish habitat under the Pacific Coast Groundfish Fishery Management Plan". Add "California scorpionfish is managed under the Pacific Coast Groundfish Fishery Management Plan".

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~~28.~~	2-16	I-VI			Planning for future habitat connectivity (and specific wetland habitat creation/protection) requires a clear, specific approach for defining how sea level rise is expected to affect mitigation sites and adjacent wetlands. The NRMP must provide maps of the best available scientific estimates of SLR rise/flooding from now to 2100 and commit to adaptively modify the mitigation approach (conforming to all regulatory processes) if future SLR does not reflect those expectations.		Change language to add "The Port/City will utilize as appropriate the California Coastal Commission's Sea Level Rise Policy Guidance document."
~~29.~~	2-16	I, II, III	2-23		WAG strongly supports the language regarding resilient habitats through connectivity included in these items.		Comment noted
~~30.~~	2-18		1		Development of early actions to reduce the impacts of sea level rise requires information regarding how sea level rise is expected at affect the resources of concern. The NRMP must provide maps of the best available scientific estimates of SLR rise/flooding from now to 2100 to allow planners to effectively "develop early actions to forestall or minimize the severity of the sea level rise impacts to area resources"		Change language to add "The Port/City will utilize as appropriate the California Coastal Commission's Sea Level Rise Policy Guidance document"
~~31.~~	2-19	I et seq.			The NRMP commits to the achieve the goal and objective to "Assure no net loss of marine, wetland and upland transition function and values due to sea level rise and other effects of climate change, within the CVBMP footprint and WHAs." However, the NRMP acknowledges that managed retreat may be constrained by infrastructure, hence vertical migration will be critical to maintain structure and function (values) of those habitats. Potential losses of acreages of habitats are not mentioned; is the NRMP also committed to maintaining acreages of marine, wetland and transition habitats? As mentioned in preceding comments, the NRMP must include maps of projected SLR/flooding to enable the plan's administrators/implementers/reviewers to clearly understand how the plan will address potential/likely loss of acreage of these habitats.		Change language to add "The Port/City will utilize as appropriate the California Coastal Commission's Sea Level Rise Policy Guidance document"
~~32.~~	2-19		1		WAG strongly supports this goal, and the supporting objective (2.4-1) and actions listed in section 2.4. These types of planning and implementation efforts will be necessary to ameliorate adverse impacts associated with climate change (e.g., sea level rise, increased storm frequency and severity)		Comment noted

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~~33.~~	2-20	II	19		The City of Chula Vista has adopted a projected SLR of 1.5 feet (what time period does this involve). How does that planning standard compare with the Port of San Diego's SLR projections? As noted previously, CA Coastal Commission's Sea Level Rise Policy Guidance document has adopted and recommends all coastal entities use a projected SLR of 42-167 cm for the period 2000-2100). If the City of Chula Vista's planning standard for SLR differs appreciably from that guidance then it will create problems implementing the NRMP. The NRMPs Appendix D cites the SD Bay Sea Level Rise Adaptation Strategy as a relevant source for potential SLR projections over 170 cm (> 5 feet) by 2100, which seems to conflict with the City's planning?		Change language to add "The Port/City will utilize as appropriate the California Coastal Commission's Sea Level Rise Policy Guidance document"
~~34.~~	2-21/22	I-V			Effective planning for SLR effects, particularly managed retreat and/or grading to encourage/facilitate habitat to transition to accommodate sea level rise, must include mapping of projected SLR so that future users of the NRMP clearly understand where and how those transitions, managed retreat were anticipated to most likely be allowed or located.		Change language to add "The Port/City will utilize as appropriate the California Coastal Commission's Sea Level Rise Policy Guidance document"
~~35.~~	2-23				Greenline 32-44 related to promotion of soft infrastructure	high	No change. The Port/City will promote soft infrastructure.
~~36.~~	2-24		26		If sediment from dredging is placed on beaches, it will be difficult to prioritize the following measure identified on line 26 "B. A process for beneficial re-use of dredge material as a source for benefiting marine habitat restoration and enhancement of marine life could include, but would not be limited to the following: 1. Identify areas where natural sediment delivery could be enhanced or improved for habitat benefit. 2. Identify areas that may require active placement of sediment to increase resiliency to sea level rise."		Comment noted.

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~~37.~~	2-26	I	10		Item I.A specifies acres of (mitigation) habitats restored as an indicator of multiple benefits to core resources. This is one of the few specific references to acres/acreages of (marine, wetland, transition) habitats being tracked and used as measures of NRMP effectiveness (elsewhere the document cites functions and values – not acres of those habitats). The NRMP needs to be consistent in specifying what is required to be measured and monitored as part of ensuring the plan fully meets its commitments.		Comment noted
~~38.~~	3-1				This section must describe how watershed and storm water (water quality BMPs) planning and projects will incorporate sea level rise/flooding. The current plan text makes no references to SLR. If appropriate, this section should cross-reference relevant parts of the NRMP that address these concerns.		Change language to add "The Port/City will utilize as appropriate the California Coastal Commission's Sea Level Rise Policy Guidance document"
~~39.~~	3-6				Line 4: Greenline related to educating marina users on pollution prevention.		No change The Chula Vista Marina's are members of the Clean Marina Program. This program provides boater best management practices to prevent pollution.
~~40.~~	3-5				Greenline II A. related to promotion of water conservation		No change. The City has a water conservation ordinance and the Port a water conservation policy.
~~41.~~	3-11	I.A			Ensuring the long-term viability of storm water facilities and operations/maintenance requires that those facilities have been planned to accommodate sea level rise/flooding.		Change language to add "The Port/City will utilize as appropriate the California Coastal Commission's Sea Level Rise Policy Guidance document"

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~~42.~~	3-6, 3-7	II.B.3, II.D.			The recommendations regarding marina and boating impacts are positive, including documenting clean marina practices (e.g., cleanmarina.org) and encouraging alternative hull paints.		Comment noted.
~~43.~~	3-8	II			NMFS concurs with the recommendation to implement bioengineering alternatives for flood protection over hard solutions such as concrete or riprap. However, we believe the wording should be changed to read, "Bioengineering alternatives shall be preferred for flood protection over "hard" solutions…"		No changes will be made to the blue box language, since they reference the controlling documents.
~~44.~~	3-14	I-IV	16-21		These items aimed at preventing the introduction and spread of invasive species are a positive addition. Regarding IV, though it lacks a funding mechanism, NMFS is pleased to see this measure re: reducing the likelihood of invasive species proliferation through restoring natural habitat and minimizing hard structures		Comment noted
~~45.~~	4-1		3-6		The CVBMP development strives to be a model for supporting and sustaining thriving native plant, wildlife and aquatic habitats adjacent to an urbanized area providing a personal interaction with nature.	important	Change language to add "aquatic"
~~46.~~	4-1		6-7		DELETE "Vision for the Future" it is a remnant of earlier writing.	typo	Change language to delete "Vision for the Future"
~~47.~~	4-1		17-18		Delete the extra period in "To achieve this, innovative strategies are proposed in built environment design, park design, maintenance, and public use management "	typo	Change language to delete
~~48.~~	4-1		22-25		The goal is to accommodate the transformation of the CVBMP project footprint and the increased use the new development will attract, while preserving and sustaining the unique wildlife communities and habitats of South San Diego Bay.	Important clarification	Change language to delete "promote"
~~49.~~	4-3			4-1	This table is about the Sweetwater District. The 25 foot wide path does not apply to the Sweetwater district. Delete this sentence from this table. "Shoreline promenades shall be a minimum of 25 feet in width allowing both pedestrians and bicyclists and shall be constructed directly along the waterfront where feasible and maintained free of private encroachment around the Bayfront."	Extremely important	No change Future review as part of adaptive management.

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~~50.~~	4-9	III	5,6&7		It looks like this will require special permits to pull invasive species. Add the word "native" as in: III. Collection of ***native*** plant materials is only allowed where expressly permitted; specific descriptions and instructions on plant collections will be detailed and, where applicable, educational signage will be present.	important	Change language to add "native"
~~51.~~	4-~~9~~10		1-6		Several important concepts related to protecting NMFS trust resources, including sea turtles, marine mammals, and eelgrass, are captured in this side note. However, specifically identifying the measures, or a subset of them, that accomplish these objectives within this sidenote would be valuable. We did not notice them within this chapter (e.g., sea turtles are not mentioned again until Ch. 7)		No change. Addressed elsewhere, refer to 5 mph speed limit in south bay.
~~52.~~	4-11	V	13-14		This same, or a similar, measure would be appropriate to clearly demarcate channels along waterfront to avoid impacting eelgrass habitat. ATONs (buoys/markers) are not always sufficient in "back bay" areas to ensure boaters stay within channels. Amend to add "…channels and protect the edge of sensitive mud flats and channels and to demarcate them from navigation channels"		Change language to add "channel"
~~53.~~	4-10				[change clapper rails to "Ridgway's rails"]	editorial	Language change to add "Ridgway's Rail formerly referred to as clapper rail"

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~~54.~~	4-11 and then 4-9	IV	1-8		Paragraph IV is more about buffers than water areas. It should be moved up to in front of objective 4.3-2 on page 9. Also extent the green vertical line to include heading IV and its subheadings to show how the blue text will be implemented.	important	~~No change.~~ ~~Comment noted~~ Add footnote for: V. A-C The management actions for section V. A-C are priority actions that will be a focus for early grant requests. In the event that grant funding is not secured prior to the issuance of a building permit in either the Sweetwater District (including the park), the Otay District, the residential development, or the resort conference center, O&M, Port Environmental funds, or other funding will be used to ensure these actions are implemented prior to issuance of the Certificate of Occupancy on any project located within the Sweetwater District (including the park), the Otay District, or the resort conference center. If the first development is the residential development, the management actions contained in V. A-C will be implemented no later than 90 days from

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							management actions contained in V. A-C will be implemented no later than 90 days from the issuance of the first Certificate of Occupancy for any phase of any residential development."
~~55.~~	4-11	V	9-20		Extend the green vertical line to include heading V and its subheadings related to bird flushing.	important	~~No change~~ ~~Port/City to comply with the MMRP, CCDP and SA~~ Include in footnote from above
~~56.~~	4-11	V	9-12		To protect native wildlife and habitats, protective measures for vulnerable mudflats and marine areas (or portions of them during critical seasons) shall be established to reduce visitor intrusion into those areas.	important	~~Change language to add "shall be established"~~ Include in footnote from above
~~57.~~	4-12		1-4		Design outdoor areas intended for public use, wildlife preserves, or treatment to minimize the need for maintenance that would otherwise impact native wildlife or plant communities.		Change language to delete "vegetation" and add "plant"
~~58.~~	4-12	I	9-10		Areas zoned for more intense use would likely require more maintenance than those zoned for infrequent or less impactful use.	Very important	Change language to delete "frequent" and add "infrequent and less"
~~59.~~	4-12	B.			If required by law, federal and/or state permits should be obtained prior to commencement of any portion of the project. (CWA, Section 404; Fish and Game Code Section 1600 et seq.)		No change If required, permits will be obtained

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~~60.~~	4-12	III	20-21		Establish protocols for routine and emergency maintenance activities that retain habitat value and avoid the breeding season (as feasible), so that while human life, health, and safety are given precedent, sensitive resources are also protected, particularly in stormwater basins or treatment areas.	important	Change language to add "Establish protocols for routine and emergency maintenance activities that retain habitat value and avoid the breeding season (as feasible), so that while human life, health, and safety are given precedent, sensitive resources are also protected, particularly in stormwater basins or treatment areas. And delete "Establish prescriptions for routine and emergency maintenance activities that retain habitat value and avoid the breeding season (as feasible), so that human life, health, and safety are given precedence, but sensitive resources are also protected, as in stormwater basins or treatment areas."

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~~61.~~	4-13	III	1-4		In areas with suitable nesting habitat for migratory birds, schedule construction so that it begins and is completed before the avian breeding season (January 15 through August 31). This will allow any necessary habitat removal prior to nesting and encourage birds to selectively nest away from the construction disturbances.	important	No change. Construction will be scheduled to start prior to the nesting season.
~~62.~~	4-14	I	6,8,& 9		Move heading I. below the blue section A., B., and C which it supports. This paragraph does not comply with the settlement agreement as shown in heading B. below. "I. Fireworks shows are discouraged during California least tern nesting season (March 15 through August 31) due to the potential for disruption of nesting colonies. Per the Settlement Agreement and the MMRP of the EIR" We suggest it be changed to something like: "I. Fireworks shows are not allowed during California least tern nesting season (March 15 through August 31) except on July 4, due to the potential for disruption of nesting colonies per the Settlement Agreement and the MMRP of the EIR. Any fireworks on the Bayfront must be specifically approved the agencies regulating water quality, air quality, and wildlife protections. Extend the green line below the blue ABC section to include the modified and relocated heading I. and headings II and III	Extremely important	C~~No c~~hange language to delete lines 6-8. ~~Port/City to comply with the MMRP, CCDP and SA~~
~~63.~~	4-15	III	1-4		Add Greenline and rewrite to read *Fireworks shows should be low-noise producing and the display altitude should be adjusted pursuant to the best available science to minimize disruption of bird species. Duration of shows should remain as short as feasible to limit the duration of potential noise impacts. Whirling, sonic booms, and similar types of fireworks are discouraged*.	important	~~No c~~Change ~~language~~ first sentence to ~~add~~ "Fireworks are encouraged to be low-noise producing and display altitudes adjusted pursuant to the best available science to minimize disruption of bird species. " Port/City to comply with the MMRP, CCDP and SA

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~~64.~~	4-17	VI	1		Change the "should" to "shall" in "*VI. Construction biomonitors **shall** monitor noise levels at construction sites to ensure compliance with noise regulations, as well as monitor any adverse response of wildlife to peak noises.*	important	No change. Port/City to comply with the MMRP, CCDP and SA
~~65.~~	4-18	I,II,III,IV	9-23		Move these 4 headings to below the blue text that follows them. Extend the green line below the upper blue text block on 4-19 to cover these four headings	important	No change. Port/City to comply with the MMRP, CCDP and SA
~~66.~~	4-19	IV B. 5, (below the blue text block)	Above line 2		Add a sentence: *All spike strips and other predator exclusion devices will be checked and cleaned, repaired, or replaced as needed at least twice each year to maintain their effectiveness, preferably before nesting season and before the winter migrants arrive*. Extend the green line to include this sentence	Extremely important	Change language to add "all *predator exclusion devices will be checked and cleaned, repaired, or replaced as needed following* site inspections" Add green line
~~67.~~	4-19	Lines 4-7			Greenline a Trash and Predator Management Plan	Very important	Change to add green line
~~68.~~	4-20	VI. B	2-7		The Feral Cat Coalition's role is to implement the neuter/release programs not assess their impacts on wildlife. In our contacts with them, they have no interest in the impacts of the practice on native species. Modify these lines to read: "B. Integrate other programs and materials as appropriate to educate the public about feral cat and dog prevention and management to promote synergy of efforts. For example, use American Bird Conservancy ***or National Audubon Society materials*** ~~and/or work with the Feral Cat Coalition of San Diego and the San Diego County Veterinary Medical Association~~ to provide education on the ~~catch and spay/neuter program and its~~ potential impact on native species."	extremely important	Change language to add "National Audubon Society".

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~~69.~~	4-20	VI. B and C	2-9		Extend the green line to cover headings B. and C.		No change. Port/City to comply with the MMRP, CCDP and SA
~~70.~~	4-20	C			C. Coordinate with other jurisdictions, as appropriate, to address adjacent cat colonies that affect native wildlife in the CVBMP footprint. [almost the first use of "fauna" in the NRMP]	important	Change language to add "wildlife" and delete "fauna"
~~71.~~	4-20	I. A,B,C	14-27		Extend the green line to cover AB&C to identify how the blue text is to be implemented.		No change. Port/City to comply with the MMRP, CCDP and SA
~~72.~~	4-22	C.	Below line 4		Change this paragraph to become consistent with the Settlement Agreement: "C. Pets ~~should~~ ***shall*** not be allowed on ***any*** ~~spur~~ trails in Buffer Areas unless under the owner's control and held on a leash, due to potential for disturbance to native species."	Very important	Change language to delete "pets" "should" "spur" and add "dogs" "shall" "any"
~~73.~~	4-22	F			F. Strict enforcement of leash laws with significant fines for repeated infractions may be necessary to establish a culture of compliance on spur trails.	Very important	~~No change.~~ ~~Existing laws will be enforced pursuant to guidance in the NRMP.~~ Change language to add "F. Strict enforcement of leash laws and disposal of pet waste in accordance with existing regulations will be pursued."
~~74.~~	4-22	III.	Between lines 4&5		Add a subheading under item III saying something like "Regulations shall be adopted requiring that dogwalkers pick up all droppings from their pets and properly dispose of them. Procedures shall be put in place to enforce those regulations.	Very important	No change. Existing laws will be enforced pursuant to guidance in the NRMP.

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~~75.~~	4-23	II.	Between lines 7&8		Add a subheading under heading II saying something like "A. Drainage from the bermed area around dumpsters shall drain into the municipal wastewater system, if feasible, and in no case shall they drain into any stormwater device that will drain into the WHA or the Bay.	Very important	No change. To be reviewed during design.
~~76.~~	4-23	VI.	Between lines 11&12		Add the words, "***are resistant to gulls and other nuisance animals" as in*** VI. In addition to trash can design guidelines provided in this section, use trash can designs that are spill resistant, discourage vandalism, ***are resistant to gulls and other nuisance animals***, and have low maintenance and energy requirements (one possible option is a solar-powered, compacting trash can design) and shall have lids.	important	Change language to add "are resistant to gulls and other nuisance animals".
~~77.~~	4-23	A	14-15		To reduce the amount of packaging associated with products or consumable items that they sell, prohibit vendors from using single-use plastic bags or Styrofoam containers. Use of non-recyclable packaging should be strongly discouraged.	Very important	No change Shall encourage reduction of consumable items
~~78.~~	4-25	F	16		Add the words "***which are directed downward and"*** and "shall" as in "F. Where feasible, low light-emitting diode (LED) lights ***which are directed downward and*** built into the ground ~~may~~ ***shall*** be used.	important	No change. Port/City to comply with the MMRP, CCDP and SA
~~79.~~	4-25 Or	H			For all publically owned lighting, dark sky spectrum lights shall be used.	Very important	No change. Consider in design review.
~~80.~~	4-26	I	1-4		This paragraph is about park lighting, not construction lighting. Move it down to below blue paragraph II D. Also extend the green line to include the text in heading I.	important	No change. Port/City to comply with the MMRP, CCDP and SA
~~81.~~	4-28	XII			[addition] Dark sky spectrum lighting should be encouraged in the built environment.	Very important	No change. Consider in design review.

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~~82~~	5-1		5-8		Built environments often have a net negative impact on ecosystem services (i.e., they use more than they produce). The purpose of this chapter is to focus on strategies to provide a net benefit to the environment.	clarification	Change language to delete "often" "attention on strategies that take less from nature and instead give back." Add "strategies to provide a net benefit to the environment"

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~~83.~~	5-1		9-13		Maximizing ecosystem services in the built environment begins with principles of sustainable design of buildings and landscapes. Net-positive impacts to ecosystem services can be reached using green space between buildings through ecological grounds design and maintenance, stormwater retention, wildlife friendly gardens and parks, and edible gardens.	clarification	Change language to add "Maximizing ecosystem services in the built environment begins with principles of sustainable design of buildings and landscapes. Net-positive impacts to ecosystem services can be reached using green space between buildings through ecological grounds design and maintenance, stormwater retention, wildlife friendly gardens and parks, and edible gardens." And delete "Maximizing ecosystem services in the built environment begins with principles of sustainable design of buildings and a number of opportunities within the green spaces between buildings, grounds design and maintenance, stormwater retention, wildlife friendly gardens and parks, and food gardens.

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~~84.~~	5-1		18-20		By taking less and providing more, the balance sheet of ecosystem services consumed and produced within the built environment and open space approaches a neutral to positive impact as compared to the current environment.		Change language to add “a neutral to positive impact as compared to the current environment.” And delete “neutral to positive, favoring ecosystem services produced.”

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~~85.~~	5-1		21-23		A compelling case can be made that implementation of reasonable and sustainable design, construction, and management guidelines for the built environment, prior to the initiation of the CVBMP development, can provide ecosystem services.		Change language to add "A compelling case can be made that implementation of reasonable and sustainable design, construction, and management guidelines for the built environment, prior to the initiation of the CVBMP development, can provide ecosystem services." And delete "A compelling case can be made at the initiation of the CVBMP development for implementation of reasonable and sustainable design, construction, and management guidelines for the built environment that can provide ecosystem services."
~~86.~~	5-1		53-54		Integration of open space with the built environment supports all residents, employees, guests and the general public and draws people to the Chula Vista Bay Front.	important	Change language to delete "site" and add "Chula Vista Bayfront"
~~87.~~	5-3		1-3		Optimize ecosystem services in the built environment by designing for low impact development (LID) conservation of natural resources and ecosystem benefits (Port of San Diego Climate Action Plan 2013). [there are two footnote references to McDonough – is this intentional?]		Comment noted. 2 separate footnotes, both numbered 1

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~~88.~~	5-4	II. B.	Between lines 3&4		Add a subheading under II. B. stating something like: When greywater is used for irrigation, the soil in the area being irrigated will be periodically monitored for buildups of undesirable conditions or materials such as salinity, acidity or alkalinity, nutrients, surfactants, etc.	Very important	Change language to add "When greywater is used for irrigation, the soil in the area being irrigated will be periodically monitored."
~~89.~~	5-7	I.A	8-10		Extent the green line to include the text in A to indicate how the blue text will be implemented		Change language to add "allow for" and delete "dedicate". Add green line
~~90.~~	5-14	Add line 6			Collaborative efforts will be made to work with Coastal Commission and Port and City to effect an immaterial amendment to reduce minimum path widths from 12 to 6 feet for meandering paths in Sweetwater and Otay districts.		No change Future review as part of adaptive management.

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~~91.~~	5-17		6-7		Much of the land designated for Buffer Areas or parks, especially in the Otay District, are populated with high concentrations of invasive, noxious, non-native plant species, and may require a multi-year program of eradication prior to restoration or improvement. Greenline lines 6-8	Very Important	Add footnote: "The management actions in 5.4.1, are priority actions that will be a focus for early grant requests. The Port/City shall revegetate all areas of the SP-1 Buffer, except areas with existing sensitive habitat, surrounding Parcel S-1 as habitat mitigation related to that project. In the event that grant funding commitments are not secured prior to the issuance of a building permit in either the Sweetwater District (including the park) or the Otay District, O&M, Port Environmental fund, or other funding will be used to ensure completion of these actions in the adjacent buffer area prior to issuance of the Certificate of Occupancy. ~~No change.~~ ~~Seek grant funding to implement.~~

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~~92.~~	5-18		1-3		Created wetlands for stormwater treatment that exclusively use native plant species that provide habitat value to wildlife and incorporate such wetland into the landscape design of open space. Native species should be defined as native to southwest coastal San Diego..	Very important	No change. Consider in design review and will seek grant funding to implement.
~~93.~~	5-18, 121	5.4-3, III	Between lines 6&7		Add a third subheading, something like: "III. Include features that will allow removal of sediments, litter, and invasive species in ways that minimize the temporary reduction of the wetlands ability to improve water quality or support native wildlife.	Very important	Change language to add "Include features that will allow removal of sediments and litter to improve water quality or support native wildlife."
~~94.~~	5-18, 121	5.4-5, IV	Between lines 6&7		Add a fourth subheading, something like: IV. Work with the agencies to develop a design and maintenance plan that will allow the agencies to issue permits for long term maintenance of the created wetlands. This should assure that the created wetlands will be able to provide optimum functioning for water quality and habitat long into the future.	Extremely important	No change. ACOE and RWQCB wetland permits include long term maintenance requirements.
~~95.~~	5-19	5.4-5	12		Delete the words: "With the exception of European honeybees,". because they are not native pollinators.		Change language to delete "With the exception of European honeybees"
~~96.~~	5-19	5.4-6	23		Add the word fauna as in: "about the local flora, ***fauna***, and ethnobotany."		Change language to add "fauna".
~~97.~~	5-19		31-32		Edible gardens within the residential area are encouraged for individual and community use.		Change language to delete "food" and add "edible"
~~98.~~	5-19		36-37		Interpret vegetable [edible] gardens as a sustainable alternative to food transported long distances.		Change language to delete "food" and add "edible" for first part of sentence.

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~~99.~~	5-19		40-41		Incorporate bird-nesting boxes and bat houses, where feasible, to encourage native insect-eating species in the edible gardens (and throughout the CVBMP footprint).	important	Language changed to delete “food” and add “edible” No change - Bat houses not incorporated due to potential issues for public safety.

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~~100~~	5-19	Line 3			Remove sentences 2 and 3 and move footnote into text and add: San Diego salt grass, seashore paspalum (non-native, non-invasive), and other native grasses selected for bio-swales.	Important	~~No change~~ Change language to delete lines 1-4 and add "Turf Grass Use. Grass selection will be based on proposed uses and functions of the grass. Mowed turf grass is native or other drought tolerant type, and provides functional gathering spaces. Meadow turf (mow free) composed of native species may also be used, where appropriate. A.Native species that withstand mowing are cool season grasses. Native bent grass (Agrostis pallens) is the first choice for California native lawn areas in low-impact areas. It is extremely drought tolerant, withstands low mowing, and provides an effective weed barrier. With occasional summer irrigation, it maintains a deep green color.

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							B.The high-traffic areas may use dwarf Bermuda grass, such as Tifway. C. Bio-swales may include San Diego salt grass, seashore paspalum (non-native, non-invasive), and other native grasses.
~~101~~	5-20	5.5-2, V	36		The goal for this section is "Promoting Wildlife", but very little is said about wildlife in this section. So please add another heading, something like: "V. Emphasize plants that provide support value for a variety of wildlife species, especially those that will be interesting and educational to park visitors."	important	Change language to add "V. Emphasize plants that provide support value for a variety of wildlife species, especially those that will be interesting and educational to park visitors."
~~102~~	5-20	I	7-10		Given that parks and open space represent the only limited areas where habitat migration may be possible, implementing this strategy would demonstrate a real commitment to the overall, core goal of promoting wildlife identified in this section.		Comment noted.
~~103~~	5-22	VII	3-4		Where appropriate and previously planned, design specific areas for more intensive use. Provide for more intensive management of these areas.	important	No change Comment unclear
~~104~~	5-22				Greenline 9-14 to design for children and to maximize natural experience in Sweetwater and Otay parks		Change language to add green line

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~~105~~	5-23	II	24-25		Avoid drip irrigation on drought tolerant plants because such technology hydrates concentrated areas leaving interspaces completely dry.		Change language to delete “as this” “wets a” “and often leaves the” and add “because such” “hydrates” “leaving”
~~106~~	5-23	5.6-1, I. C			Add a subsection something like: “C. Include in the garden areas information and displays demonstrating the environmental and health benefits of benign pest control measures such as IPM.	important	Change language to add “C. Include in the garden areas information and displays demonstrating the environmental and health benefits of benign pest control measures such as IPM.”
~~107~~	5-23	objective			Invasive Species Management. An invasive plant management plan is in place that reinforces strict adherence to pesticide label instructions and restrictions for chemicals carrying a caution warning label, DELETE “and bans the use of pesticides with warning or danger safety labels.”	important	Change language to delete “and bans the use of pesticides with warning or danger safety labels”
~~108~~	5-23				Greenline lines 11-14 related to existing IPM policies of the Port and City		Change language to delete “individual” and add green line
~~109~~	ADD in 5-18	Line18			Where possible, drought-tolerant landscaping will emulate the habitat structure and specific components of coastal sage scrub, coastal strand and maritime succulent scrub.		Change language to add “Where possible, drought-tolerant landscaping will emulate the habitat structure and specific components of coastal sage scrub, coastal strand and maritime succulent scrub.”

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~~110~~	6-0		9		Add line. "Education is a key element in both appreciating the natural environment and supporting ongoing conservation efforts."		Change language to add "Education is a key element in both appreciating the natural environment and supporting ongoing conservation efforts."
~~111~~	6-0		1		Remove word "varied" from sentence		Change language to delete "varied"
~~112~~	6-1	I	15-16		Education and stewardship that will reach diverse audiences and provide a range of experiences designed to inspire a commitment to conservation.		Change language to delete "and education to inspire stewardship" and add "designed to inspire a commitment to conservation"
~~113~~	6-1	II	26		Change the word "Post" to "Pre"		Change language to delete "post" and add "pre"
~~114~~	6-1	III	28-29		Education that emphasizes both local and global connections to create a model of sustainable living and ecosystem connectivity.		Changed language to delete "exhibits" and add "emphasizes both local and"
~~115~~	6-2		9		Add a new bullet that reads: "Community organizations and other Non – Profit organizations"		Changed language to add "Community and other Non – Profit organizations"
~~116~~	6-2	III	18		Edit sentence so it reads: "Elected officials, local politicians, government directors and other personnel, and governmental staff and personnel."		Changed language to add "and other personnel, and governmental staff"

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~~117~~	6-3	VIII	18-19		Edit Sentence: "Ensure adequate orientation information is provided within the built environment (e.g., hotels and convention center) within CVBMP site (e.g., maps, pamphlets, signage, QR codes)"		Changed language to add "Ensure adequate orientation information is provided within the built environment (e.g., hotels and convention center) within CVBMP site (e.g., maps, pamphlets, signage, QR codes)" And delete "Ensure adequate orientation information is provided at the site (e.g., auditorium, maps)."
~~118~~	6-4	XIV	18		Edit Sentence: Change the word "phone" to "computer or phone application"		Changed language to add "computer or"
~~119~~	6-5	III	14		Make this a green line and add additional text after existing sentence so entire bullet reads: "Coordinate activities with hotels and the on-site conference center that includes establishing displays and making materials available (brochures, maps, environmental concierge, etc. and incorporate use of produced Bayfront video) to educate guests on the Chula Vista Bayfront and wildlife areas. This will help instill the uniqueness of the location and to create environmental awareness and respect of the Chula Vista Bayfront."		Change language to add ""Coordinate activities with hotels and the on-site conference center that may include establishing displays and making materials available (brochures, maps, concierge, etc. and incorporate use of produced Bayfront video) to educate guests on the Chula Vista Bayfront and wildlife areas."

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~~120~~	6-5	V	15		Change "clapper rail" to "Ridgway's rail"		Change language to "Ridgway's rail formerly known as the clapper"
~~121~~	6-5	VII	18-21		Post a visible community bird, wildlife and butterfly list to show what has been observed. Have a place where people can post what they have seen lately, such as an interpretive center, on a bulletin board, or online. Highlight existing migration routes and consider creating animal way stations (e.g., for butterflies).		Change language to add "wildlife"
~~122~~	6-5	VIII	(added)		Post a visible community board for fisherman that includes date, species, length, weight and location of daily catch and method (bait, lure, fly etc.). Create application that allows reporting to appropriate wildlife agency.		Change language to add "Post a visible community board for fisherman that includes date, species, length, weight and location of daily catch and method (bait, lure, fly etc.). Create application that allows reporting to appropriate wildlife agency."
~~123~~	6-5	I	12		Remove the word "tie-in and"		Change language to delete "tie-in and"
~~124~~	6-5	VI	17		Add "open space and" before protected habitat		Change language to add "open space and"
~~125~~	6-6	VI			Discourage illicit activity through wildlife friendly lighting and enforcement of closing hours.		Change language to add "wildlife friendly lighting".

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~~126~~	6-6		23-27		*Ecological and Cultural Evolution of the Landscape.* Inform residents, visitors, and employees of the evolution of the landscapes of Chula Vista. Engage the community and visitors on the historical and cultural connection of native tribes with the natural resources.		Changed language to add "*Ecological and Cultural Evolution of the Landscape.* Inform residents, visitors, and employees of the evolution of the landscapes of Chula Vista. Engage the community and visitors on the historical and cultural connection of native tribes with the natural resources."
~~127~~	6-6	II	28-30		"consider re-creating a hands on interactive setting that would depict the Kumeyaay use of natural resources" NEW [we know a village was never located in this area and the Kumeyaay have expressed in the past not wanting to display a village in the incorrect area]	NEW	Changed language to delete "Collaborate with the Kumeyaay Nation tribal representatives to provide educational resources, such as cultural demonstrations" and add "consider re-creating a hands on interactive setting that would depict the Kumeyaay use of natural resources."
~~128~~	6-6	III	32-33		Describe what has brought people to the Chula Vista area historically and currently.		Changed language to delete "and how they tie together"

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~~129~~	6.7	II	27		Insert "sustainable practices" into the text, full text with insert reads: "Provide education on how sustainable practices and lifestyle changes can help reduce our carbon footprint. Examples could include things to do at home, products to buy or avoid, as well as area-specific actions, such as taking the local bus or using the bike paths."		Changed language to add " sustainable practices"
~~130~~	6-7	IV	50-53		Consider creating an interpretive video or story of the CVBMP planning process, including how a collaborative effort brought together diverse interests to plan and develop the Bayfront in a manner where the Harbor, Otay, and Sweetwater Districts coexist for the long-term sustainability of local and regional wildlife.		No change Same as existing language
~~131~~	6.8	IV	6		Insert "sustainability" into the second sentence of the text, full text with insert reads: "Emphasize how good planning principles can help achieve multiple perceived competing goals. Provide a model of sustainability, conservation, and development for others to follow."		Changed language to add " sustainability"

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~~132~~	7-22	II	Needs line #s		II. A and B should be III and IV as in all three things are required eventually and not subsets of II. B. Should be a separate commitment and should state that Predator management WILL be implemented as needed and as required by the controlling documents and as stated elsewhere in the document. The whole item should read: *II. The Port/City shall assign personnel resources to implement the NRMP, at a minimum, equivalent to one full time (average 40 hours a week) employee whose duties will include, among others, Program coordination and management, designated to track and coordinate implementation of the NRMP.* *III. The Ranger/Docent responsibilities proposed for CVBMP education, out-reach will be initiated as project-related revenues are identified in accordance with Section 3.4 of the Settlement Agreement.* *IV. Predator management, including management of natural and domestic predator control and trash management to avoid attracting predators will be implemented if and as needed.* *Comprehensive predator management will be contracted as is currently done by the Port with a qualified entity and/or agency. Private property owners will be required to grant property access as needed.* *V. The Port/City will dedicate staff resources as needed to apply for and secure grant funding for NRMP and restoration projects.*	High Priority Major Issue	Change language to add "II. The Port/City shall assign personnel resources to implement the NRMP, at a minimum equivalent to one full time (average 40 hours per week) employee whose duties will include, among other, Program coordination and management, designated to track and coordinate implementation of the NRMP." Change language to delete "A." and add "III." Change language to delete "B. Predator Management, such as feral cat control and trash management to avoid attracting predators, maybe implemented" and add "IV. Predator management, including management of natural and domestic predator control and trash management"

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134							Management to avoid attracting predators will be implemented if and as needed. Comprehensive predator management will be implemented as is currently done by the Port with a qualified entity and/or agency. V. The Port/City will dedicate staff resources as needed to apply for and secure grant funding for NRMP and restoration projects to meet the obligations in the controlling documents and to support qualifying projects."

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~~133~~	Various related to monitoring				Overall Comment. The document contains a number of general statements about monitoring. For example, 1.4.5 states, *"Pilot projects should be supported by monitoring in an adaptive framework, designed to determine whether project outcomes are benefiting the NRMP's goals and objectives, and whether they are achieved efficiently and equitably. Monitoring will benefit accountability among partners in NRMP implementation."* The WAG recognizes the value in monitoring efforts to inform management decisions. Given the number of strategies and scope of this project, clearly identifying the objectives, data needs, sampling design (and statistical approach if applicable), trade-offs, etc. will be crucial to ensure the resources dedicated to monitoring are used wisely. Chapter 7includes useful information, including identifying existing, relevant data sets, to assist in accomplishing this goal. But additional planning will still be needed to ensure monitoring efforts achieve the desired outcome.		Comment noted

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~~134~~	7-10			7-1, 7-2	Table 7-1 and 7-2 should be green line with the following language added: *Within 18 months of the adoption of the NRMP (or prior to the first CO issued for any project whichever comes first) the Port/City will contract with a qualified contractor to develop an implementation monitoring plan for Table 7-1 and 7-2 to specify how monitoring, reporting, and evaluation will occur, to be used to determine the need for future potential actions. The follow-on study also needs to identify the variables to be used to identify and quantify ecosystem services and address issue raised in comment 18 of this matrix..*	High Priority Major Issue	Change language to add a green line and "A key component of the Natural Resources Management Plan, is that it utilizes an adaptive approach to management of resources. As such, the long-term monitoring that guides management actions must be targeted to identify impacts, if any, that are a result of the development and must also be adaptive in structure. Therefore, the long-term monitoring program should be focused on identifying and monitoring metrics associated with linkages between the development and the adjacent natural resources within buffers, restored habitat and WHA's. Adaptive management would then utilize monitoring results to promote beneficial linkages and

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~~135~~							to minimize or eliminate negative linkages. Therefore, a monitoring plan shall be developed which focuses on encroachment of invasive species; human activity in buffers and WHA's; nuisance animals; and the effectiveness of human use of bay front; trash collection; building construction; landscaping and stormwater treatment facilities. Sixty (60) days following the signing of an option to lease or similar document for development in the Sweetwater (including the park) or Otay Districts or the development on H-3, H-23, H-13 or H-14 whichever is first, the Port/City will contract with a qualified contractor or use other comparable resources to develop a draft monitoring plan, including baseline conditions for entire bayfront, identify data gaps, and implementation schedule based on the

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138							conditions for entire bayfront, identify data gaps, and implementation schedule based on the information in Tables 7-1 and monitoring of the status of the natural resources and natural resource indicators included in 7-2. The plan will be adopted, including a monitoring framework for the entire Bayfront and will be implemented at the onset of site alteration of the project triggering the development of the plan."
~~136~~					The above activities should list the funding source as JPA O&M.	Important	Change language to add "funding source as JPA O&M"
~~137~~	7-13		10-11		Spotted sand bass and yellowfin croaker are important living marine resources, and NOAA/NMFS has broad authority for protecting these types of resources (e.g., under the Fish and Wildlife Coordination Act). However, as we interpret the term, "NOAA managed fishery resources", these two species do not qualify as such since they are not managed under a Federal Fishery Management Plan. Therefore, we recommend identifying them as "NOAA trust resources" instead. Just fyi, California scorpionfish is a federally managed fishery resource as it's covered under the Pacific Coast Groundfish Fishery Management Plan.		Change language to deleted "managed fishery resources" and add "trust resources"

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~~138~~	7-12			Table 7-2	NMFS supports the eelgrass extent indicator and use of the baywide eelgrass surveys. The NRMP should reflect that interpretation of the trend assessment language, which notes the current extent will be compared to the maximum extent. As long as this comparison with the maximum extent is used solely to identify a positive or negative trend (e.g., 85% of maximum this year, 78% of maximum last year), and a given year's results are not expected to meet or exceed the maximum extent, this should be fine. We just don't want to establish an indicator in which results that are within the normal range of eelgrass habitat fluctuations are interpreted as failing to meet the identified target.		Comment noted
~~139~~	7-25	II			Eelgrass is also highly effective at carbon sequestration and should be noted here in addition to salt marsh habitat.		Change language to add "eelgrass and"
~~140~~	Appdx A				Move Appendix A to page ii, after TOC.		Change Move Appendix A after the Table of Contents
~~141~~	New Appdx letter				Give implementation table its own appendix letter.		Change Implementation Table to be own Appendix
~~142~~	C-6		9-25		Green sea turtles should be included in the list of "Important Species and Habitats" in section C.2.1. Please consider incorporating the following language: "*San Diego Bay serves as important habitat for a resident population of up to approximately 60 juvenile and adult ESA-listed green sea turtles (Eguchi et al. 2010).*" Reference information: Eguchi, T., J.A. Seminoff, R.A. LeRoux, P.H. Dutton, D.L. Dutton. 2010. Abundance and survival rates of green turtles in an urban environment: coexistence of humans and an endangered species. Marine Biology 157:1869-1877.		Change language to add "San Diego Bay serves as important habitat for a resident population of up to approximately 60 juvenile and adult ESA-listed green sea turtles (Eguchi et al. 2010)."

South Bay WAG Consensus Comments MATRIX

<table>
<tr><th>NO.</th><th>PAGE NO.</th><th>ROMAN NUMERAL</th><th>LINE NO.</th><th>FIGURE / TABLE NO.</th><th>RECOMMENDED CHANGES
(Exact wording of suggested change)</th><th>Priority</th><th>HOW COMMENT WAS INCORPORATED
(If not incorporated, why?)</th></tr>
<tr><td>~~143~~</td><td>App D, Page D-2</td><td>D.1.1</td><td>14-16</td><td></td><td>The referenced San Diego Bay Sea Level Rise Adaptation Strategy document presented SLR projections for the Bay and flooding maps for portions of the Bay – include those in this document and replace them when new maps become available. Also, this document should consider including mapping of SLR (under low and high emission scenarios) from the Climate Central Surging Seas report (www.climatecentral.org).</td><td></td><td>Change language to add “The Port/City will utilize as appropriate the California Coastal Commission’s Sea Level Rise Guidance document”</td></tr>
<tr><td>~~144~~</td><td>Appendix D, page D-1</td><td>D.1.1</td><td>27</td><td></td><td>This appendix on sea level rise should cite and rely on SLR projections (42-167 cm by 2100) provided by the National Research Council (2012) and included in the CA Coastal Commission’s Sea Level Rise Policy Guidance document (2015). The SLR Policy Guidance document uses the most current/updated and widely accepted SLR projections presently available; all Port of San Diego planning documents and specific projects (including this NRMP) should comport with the state’s document.</td><td></td><td>Change language to add “The Port/City will utilize as appropriate the California Coastal Commission’s Sea Level Rise Policy Guidance document”</td></tr>
<tr><td>148</td><td>Appendix D, page D-3</td><td>D.1.1</td><td></td><td></td><td>Insert maps of current elevations for the Bayfront</td><td></td><td>Change language to add existing elevation maps for the Bayfront.</td></tr>
<tr><td>149</td><td>Appendix D,</td><td>D.1.1</td><td></td><td></td><td>National Research Council (NRC 2012)
<table><tr><td>-</td><td>2030</td><td>2050</td><td>2100</td></tr><tr><td>Low end of range</td><td>2 in.</td><td>5 in.</td><td>17 in. (1.4 ft)</td></tr><tr><td>Mid-range</td><td>6 in.</td><td>11 in.</td><td>37 in. (3.1 ft)</td></tr><tr><td>High end of range</td><td>12 in.</td><td>24 in.</td><td>66 in. (5.5 ft)</td></tr></table></td><td></td><td>Change language to add</td></tr>
</table>

Attachment C to Agenda Item No. 2016-0170

Appendix C
Comment Matrix

COMMENT INCORPORATOR Julie K. Danielson, community resident and Realtor	**DATE** **December 3, 2015 (Response to comments 4/19/16)**
COMMENTOR **Julie K. Danielson**	**ORGANIZATION OF COMMENTOR** Julie K. Danielson, Realtor. MBA. CIPS.
TITLE OF DOCUMENT Chula Vista Bayfront Master Plan Natural Resources Management Plan - Draft	**DATE OF DOCUMENT** November - 2015

NO.	PAGE NO.	ROMAN NUMERAL	LINE NO.	FIGURE/ TABLE NO.	NAME OF COMMENTOR	RECOMMENDED CHANGES *(Exact wording of suggested change)*	INCORP? *(Yes/No)*	HOW COMMENT WAS INCORPORATED *(If not incorporated, why?)*
1.	1-8		42	1.5.2	Danielson	Cultural Land Use History		
2.	1-10		19	1.5.2	Danielson	Paragraph add in below Salt works: During 1916, in response to the munitions needs generated by WWI, Hercules Powder Company opened a kelp processing plant at the edge of the San Diego bay at Sweetwater Marsh in Chula Vista, California. The company had been borne out of divested assets of the Du Pont Family Company by U.S. District Court decree in 1912 (Dyer and Sicilia 1990:50). The history of the Hercules facility, which became known as Gunpowder Point, is embedded in the search to develop chemicals needed for munitions in the new warfare environment of WWI. Seen as the first modern technological war, WWI forced American chemical companies to find new local sources for producing chemicals previously imported from Europe. Hercules, in particular, focused on increasing production for its smokeless gunpowder and TNT. Of local importance, "production of some military explosives…required Hercules to pioneer methods for producing key intermediate ingredients and solvents" including the processing of kelp for potash and acetone at Sweetwater Marsh (Dyer and Sicilia 1990:85), These pioneering efforts can still be seen today in the remains of nine structural ruins known to be associated with the Hercules plant at Gunpowder Point. These nine ruins were identified on the 1926 San Born Fire Insurance Map. According to the US Department of the Interior, Fish and Wildlife Service letter dated July 24, 2015 and evidenced by a Historical Resource Evaluation Report #P-37-030176 eight of the nine remaining ruins are eligible to National Register of Historic Places based on their historic associations with a unique war-time industry. (Source: Lou Ann Speulda-Drews/ Historian 2008 and 2015)		The former Hercules Powder Company is located on National Wildlife Refuge land and is not within the jurisdiction of the City of Chula Vista or the Port of San Diego.
3.	C-13		1	C.4	Danielson	Cultural Land Use History of the CVBMP Area		

Attachment D to Agenda Item No. 2016-0170

Appendix D
Hunter Comments on Implementation Table

COMMENT INCORPORATOR	**DATE Dec 3 (Response to comments 4/19/16)**
COMMENTOR Hunter	**ORGANIZATION OF COMMENTOR** Environmental Health Coalition
TITLE OF DOCUMENT Chula Vista Bayfront Master Plan Natural Resources Management Plan - Draft	**DATE OF DOCUMENT** November - 2015

NO.	PAGE NO.	ROMAN NUMERAL	LINE NO.	FIGURE / TABLE NO.	NAME OF COMMENTOR	RECOMMENDED CHANGES *(Exact wording of suggested change)*	INCORP?	HOW COMMENT inc
1.						6-4		No change
2.						6-3		No Change
3.						3-5		Lines updated
4.						5-1		No change
5.						89 - should be core to educate marina owners and used on pollution prevention		No change
6.						166. 167- no collecting or hunting should be core		No change
7.						171, 177- 180- Core for Bird Flushing		See pg. 4-9 4.3-2 I and 4-10 4.3-2 III
8.						224- core to manage feral animals		See pg. 4-20 VI A.
9.						233- core to educate visitors on predator control and management		No change, already core
10.						255- We should collect monofilament, core		See 4.7-IV, pg.4-23
11.						266-268-Core for Trash Plan and should be funded by Port and City or JPA		No change, already core,
12.						267 -268		see pg. 4-19, lines 4-7 green line
13.						280- downward lights should be core		No change, see pg. 4-26 4.8 I H.

Appendix D
Hunter Comments on Implementation Table

14.						327- we should educate about birds		No change, already core, see pg. 4-33 4.8-3 III A.
15.						384- restoring buffers prior to district development		No Change Seek grant funding
16.						412-413- park design for human experience		No change, already core
17.						421-422- should be core related to water efficient irrigation		Seek grant funding
18.						489, 490,492 should be core for monitoring		See pg. 7-4 7.3-1 III
19.						515-517- Please edits as we suggested		No change, already core
20.						530, 531,534- Core related to SLR		See comment re: Port/City to utilize California Coastal Commission Sea Level Rise guidance document
21.						541- Core related to seeking grant funding		No change
22.						548 required by law, should be core		No change, see pg. 7-26 7.5-4 I
23.						549- is required and should be core, funding is JPA and Project funding per the settlement agreement		No change, see pg. 7-26 7.54 I
24.	I					Appendix- should include maps or links to where SLR can be evaluated.		No change
25.	"					13, 14 and 54- Port needs to fund		No change, Project Proponent could include the Port
26.	"					66- Remove- not a habitat issues		No change

Appendix D
Hunter Comments on Implementation Table

27.	"					78- Paid for by O&M		Change language to add "VPA O&M" and delete "Project Proponent"
28.	"					133- should be funded by project proponent cleanup of any haz mats		Changed language to add "Project Proponent"
29.	"					224- Port should prepare a Trash Plan		No change
30.	"					225- Feral Cats should be core		Change language to add "core"
31.	"					255- We should collect monofilament		Repeat, see pg. 4.7-1 V pg. 4-23

DRAFT

RESOLUTION 20xx-xxx

RESOLUTION APPROVING THE CHULA VISTA BAYFRONT NATURAL RESOURCES MANAGEMENT PLAN, A COORDINATED EFFORT BETWEEN THE SAN DIEGO UNIFIED PORT DISTRICT, THE CITY OF CHULA VISTA AND THE WILDLIFE ADVISORY GROUP

WHEREAS, the San Diego Unified Port District (District) is a public corporation created by the legislature in 1962 pursuant to Harbors and Navigation Code Appendix 1, (Port Act); and

WHEREAS, On May 4, 2010, the District, the City of Chula Vista (City), the Bayfront Coalition (Coalition), and the Redevelopment Agency for the City of Chula Vista (RDA) entered into the Chula Vista Master Plan Settlement Agreement (Settlement Agreement); and

WHEREAS, the Settlement Agreement requires that the District, the City, and RDA cause to be prepared a Natural Resources Management Plan (NRMP) for the Chula Vista Bayfront; and

WHEREAS, the Settlement Agreement requires the creation of a Wildlife Advisory Group (WAG) to advise the District and the City on the development and implementation of the NRMP; and

WHEREAS, the NRMP is required to meet specific management objectives to protect habitats and enhance the fish and wildlife populations of the Chula Vista Bayfront development; and

WHEREAS, the NRMP provides guidance for the implementation of the requirements in the Controlling Documents, which consist of the Settlement Agreement, Coastal Commission Development Policies, and the Mitigation Monitoring and Reporting Program for the Chula Vista Bayfront and also outlines strategies that may be considered for future grant opportunities; and

WHEREAS, the Settlement Agreement also requires the WAG to advise the District and the City on wildlife management issues and restoration plans related to the future development of the Chula Vista Bayfront; and

WHEREAS, the Settlement Agreement requires the District and City to provide administrative and staff support to the WAG, as necessary, to perform the functions and achieve the goals described in the Settlement Agreement; and

WHEREAS, since the WAG's first meeting on May 4, 2011, the group has met over thirty times; and

WHEREAS, over the course of these meetings, the WAG developed goals and objectives for the NRMP; and

WHEREAS, the NRMP promotes and enhances natural resources in the bay-estuarine, urban setting for a sustainable future that sets far-reaching goals for living with climate change, and envisions a thriving, healthy ecosystem that fosters the human experience of nature; and

WHEREAS, the NRMP is an important environmental guidance and implementation document, applicable to all development within the Chula Vista Bayfront project area; and

WHEREAS, all projects including both public and private will be evaluated by the District and City relative to furthering the goals, objectives, standards and strategies of the NRMP; and

WHEREAS, the NRMP is designed to offer varied opportunities for human encounters with nature that are engaging, tranquil, support human and ecological health and well-being, and are accessible to all; and

WHEREAS, once completed, the Chula Vista Bayfront will be a destination for global travelers as well as local residents and visitors, reflect strong planning and design principles for sustainability of resources, economic feasibility, and community benefit; and

WHEREAS, the NRMP was prepared in consultation with District and City staff and six separate WAG ad hoc committees in addition to several WAG meetings; and

WHEREAS, the NRMP was written to achieve the management objectives of the Settlement Agreement; and

WHEREAS, the NRMP includes establishing fenced buffer areas with specific types of fencing; prohibiting activities near and adjacent to buffer areas; enforcing leashing of cats and dogs at all times; buildings and structures designed to prevent bird strikes and predators from perching; establishing design guidelines for walkways, pathways, lighting, noise, landscaping, stormwater management, roads, and footpaths; providing year-round predator control, increased enforcement, signage, volunteer events and interpretive walks to educate residents and visitors; implementing integrated pest management; limiting boating impacts; reviewing alternatives for conducting restoration of existing wetlands; public park restrictions; and implementing water quality improvement projects; and

WHEREAS, the first draft of the NRMP was available for public comment on July 1, 2013; and

WHEREAS, during public comment the WAG provided approximately 300 comments which were reviewed and District and City staff; and

WHEREAS, District and City staff worked with a WAG ad-hoc committee on a nearly weekly basis to revise the NRMP and to resolve as many outstanding issues as possible prior to the second public review of the NRMP; and

WHEREAS, on November 2, 2015, the second draft of the NRMP was available for a 45 day public review via the Districts website; and

WHEREAS, the WAG specifically requested that the review period include two WAG meetings; and

WHEREAS, the WAG met on December 3 and 10, 2015 to obtain consensus on 143 comments from WAG members which were submitted on December 16, 2015; and

WHEREAS, other public comments on the draft plan included 3 comments from a Chula Vista resident and 31 comments on the implementation table from the Chair of the WAG; and

WHEREAS, District and City staff and the WAG ad-hoc committee met several times to review the response to comments on the second draft of the NRMP and the responses to comments were provided to the WAG on February 29 and April 25, 2016; and

WHEREAS, the NRMP was revised to incorporate responses to the comments; and

WHEREAS, the WAG met on May 5, 2016 and voted to approve the NRMP and recommend forwarding the NRMP to the District and City Boards for approval; and

WHEREAS, the Settlement Agreement requires that the District and City approve the Natural Resources Management Plan and District staff recommends that the Board approve the Chula Vista Bayfront Natural Resource Management Plan and, pursuant to the Settlement Agreement, direct District staff to prepare written notice of such approval to each party who signed the Settlement Agreement.

NOW, THEREFORE, BE IT RESOLVED that the Board of Port Commissioners of the San Diego Unified Port District does hereby approve the Chula Vista Bayfront Natural Resources Management Plan, and the Executive Director or her designee is hereby directed to provide written notice of such approval to each party of the Chula Vista Master Plan Settlement Agreement.

APPROVED AS TO FORM AND LEGALITY:
GENERAL COUNSEL

_____
By: Assistant/Deputy

PASSED AND ADOPTED by the Board of Port Commissioners of the San Diego Unified Port District, this 10th day of May, 2016, by the following vote:

DRAFT

RESOLUTION 20xx-xxx

RESOLUTION APPROVING THE CHULA VISTA BAYFRONT NATURAL RESOURCES MANAGEMENT PLAN, A COORDINATED EFFORT BETWEEN THE SAN DIEGO UNIFIED PORT DISTRICT, THE CITY OF CHULA VISTA AND THE WILDLIFE ADVISORY GROUP

WHEREAS, the San Diego Unified Port District (District) is a public corporation created by the legislature in 1962 pursuant to Harbors and Navigation Code Appendix 1, (Port Act); and

WHEREAS, On May 4, 2010, the District, the City of Chula Vista (City), the Bayfront Coalition (Coalition), and the Redevelopment Agency for the City of Chula Vista (RDA) entered into the Chula Vista Master Plan Settlement Agreement (Settlement Agreement); and

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WHEREAS, the NRMP provides guidance for the implementation of the requirements in the Controlling Documents, which consist of the Settlement Agreement, Coastal Commission Development Policies, and the Mitigation Monitoring and Reporting Program for the Chula Vista Bayfront and also outlines strategies that may be considered for future grant opportunities; and

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WHEREAS, since the WAG's first meeting on May 4, 2011, the group has met over thirty times; and

WHEREAS, over the course of these meetings, the WAG developed goals and objectives for the NRMP; and

WHEREAS, the NRMP promotes and enhances natural resources in the bay-estuarine, urban setting for a sustainable future that sets far-reaching goals for living with climate change, and envisions a thriving, healthy ecosystem that fosters the human experience of nature; and

WHEREAS, the NRMP is an important environmental guidance and implementation document, applicable to all development within the Chula Vista Bayfront project area; and

WHEREAS, all projects including both public and private will be evaluated by the District and City relative to furthering the goals, objectives, standards and strategies of the NRMP; and

WHEREAS, the NRMP is designed to offer varied opportunities for human encounters with nature that are engaging, tranquil, support human and ecological health and well-being, and are accessible to all; and

WHEREAS, once completed, the Chula Vista Bayfront will be a destination for global travelers as well as local residents and visitors, reflect strong planning and design principles for sustainability of resources, economic feasibility, and community benefit; and

WHEREAS, the NRMP was prepared in consultation with District and City staff and six separate WAG ad hoc committees in addition to several WAG meetings; and

WHEREAS, the NRMP was written to achieve the management objectives of the Settlement Agreement; and

WHEREAS, the NRMP includes establishing fenced buffer areas with specific types of fencing; prohibiting activities near and adjacent to buffer areas; enforcing leashing of cats and dogs at all times; buildings and structures designed to prevent bird strikes and predators from perching; establishing design guidelines for walkways, pathways, lighting, noise, landscaping, stormwater management, roads, and footpaths; providing year-round predator control, increased enforcement, signage, volunteer events and interpretive walks to educate residents and visitors; implementing integrated pest management; limiting boating impacts; reviewing alternatives for conducting restoration of existing wetlands; public park restrictions; and implementing water quality improvement projects; and

WHEREAS, the Settlement Agreement states as a management objective that, the District, City, and RDA are not required to expend funds for NRMP implementation until project-related revenues are identified and impacts initiated; and

WHEREAS, the first draft of the NRMP was available for public comment on July 1, 2013; and

WHEREAS, during public comment the WAG provided approximately 300 comments which were reviewed and District and City staff; and

WHEREAS, District and City staff worked with a WAG ad-hoc committee on a nearly weekly basis to revise the NRMP and to resolve as many outstanding issues as possible prior to the second public review of the NRMP; and

WHEREAS, on November 2, 2015, the second draft of the NRMP was available for a 45 day public review via the Districts website; and

WHEREAS, the WAG specifically requested that the review period include two WAG meetings; and

WHEREAS, the WAG met on December 3 and 10, 2015 to obtain consensus on 143 comments from WAG members which were submitted on December 16, 2015; and

WHEREAS, other public comments on the draft plan included 3 comments from a Chula Vista resident and 31 comments on the implementation table from the Chair of the WAG; and

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WHEREAS, the NRMP was revised to incorporate responses to the comments; and

WHEREAS, the WAG met on May 5, 2016 and voted to approve the NRMP and recommend forwarding the NRMP to the District and City Boards for approval; and

WHEREAS, the Settlement Agreement requires that the District and City approve the Natural Resources Management Plan and District staff recommends that the Board approve the Chula Vista Bayfront Natural Resource Management Plan and, pursuant to the Settlement Agreement, direct District staff to prepare

written notice of such approval to each party who signed the Settlement Agreement.

NOW, THEREFORE, BE IT RESOLVED that the Board of Port Commissioners of the San Diego Unified Port District does hereby approve the Chula Vista Bayfront Natural Resources Management Plan, and the Executive Director or her designee is hereby directed to provide written notice of such approval to each party of the Chula Vista Master Plan Settlement Agreement.

APPROVED AS TO FORM AND LEGALITY:
GENERAL COUNSEL

_____
By: Assistant/Deputy

PASSED AND ADOPTED by the Board of Port Commissioners of the San Diego Unified Port District, this 10th day of May, 2016, by the following vote:

Julie Waterman

From: Laura Cuthill
Sent: Monday, May 09, 2016 3:46 PM
To: ELG
Cc: Tim Deuel; Laura Nicholson; Julie Waterman; Eileen Maher
Subject: Agenda Related Comment Item 20: NRMP- Letter of Support for Chula Vista Bayfront NRMP from South Bay Wildlife Advisory Group
Attachments: Final_WAG_NRMP_support letter_May_9_2016.pdf
Importance: High

AGENDA RELATED
MAY 10 2016
20 2016-0170

Passing along an agenda related public comment.

Regards,
Laura

From: Laura Hunter [mailto:earthlover@sbcglobal.net]
Sent: Monday, May 09, 2016 1:02 PM
To: Mary Salas; Pamela Bensoussan; Patricia Aguilar; jmcann@chulavistaca.gov; smeisen@chulavistaca.gov; Ann Moore; Bob Nelson; Dan Malcolm; Garry Bonelli; Marshall Merrifield; Rafael Castellanos; Robert Valderrama
Cc: Randa Coniglio; Eileen Maher; Bill Mcminn; Gary Halbert; spower@chulavistaca.gov; Adam Meyer; Linda Scott
Subject: Letter of Support for Chula Vista Bayfront NRMP from South Bay Wildlife Advisory Group
Importance: High

Dear Commissioners and Council members and staff,
Please find attached the letter documenting the unanimous vote of support taken by the South Bay Wildlife Advisory Group on May 5th recommending adoption of the NRMP for the Bayfront.
We look forward to our upcoming meetings. Please contact me or Allison Rolfe with any questions.
Thanks to **everyone** involved for their considerable work on this!
Laura Hunter and Allison Rolfe

May 9, 2016

Chairman and Board of Port Commissioners
Mayor and City Council members
Via Email

RE: South Bay Wildlife Advisory Group SUPPORT for Natural Resources Management Plan for the Chula Vista Bayfront.

Dear Port Commissioners and Chula Vista City Council Members:

We are pleased to report the members of the South Bay Wildlife Advisory Group (WAG) voted unanimously at our May 5, 2016 meeting to recommend adoption of the Natural Resources Management Plan (NRMP) as amended for the Chula Vista Bayfront.

This is the culmination of several years of dedicated effort by the members of the WAG, Port and City staff, and consultants. It represents a critically important milestone in the creation of a comprehensive plan for the Chula Vista Bayfront – a plan that allows for development while simultaneously ensuring protection of the natural resources that make the area so special.

As an adaptive management plan the NRMP is, by design, a 'living document' and the cornerstone of actions that will be taken in the future. In order for its goals to be effectively met, the continued active engagement and commitment of all parties as development plans move forward will be necessary.

We are looking forward to a continued collaborative approach that has been the hallmark of this project to date.

We urge your adoption of the NRMP so that implementation can begin. The tenets in this plan will ensure the successful completion of this landmark project and effort.

Thank you for your support and please contact either of us with any questions.

Sincerely,

Laura Hunter
Chair

Allison Rolfe
Vice-Chair