Appendix H

Environmental Analysis and Checklist

For

Toxic Pollutants in Sediment TMDLs
Mouths of Chollas, Paleta, & Switzer Creeks

Table of Contents

H1. California Environmental Quality Act Requirements

The California Regional Water Quality Control Board, San Diego Region (San Diego Water Board) must comply with the California Environmental Quality Act (CEQA, Pub Res. Code section 21000, et seq.) when amending the *Water Quality Control Plan for the San Diego Basin* (Basin Plan). The current project proposes to amend the Basin Plan by incorporating Total Maximum Daily Loads (TMDLs) for toxic pollutants in sediment at the mouths of Paleta, Chollas, and Switzer Creeks in San Diego Bay, along with an implementation plan to achieve the TMDLs. Under CEQA, the San Diego Water Board is the Lead Agency for evaluating the environmental impacts of the proposed project and of any reasonably foreseeable methods of compliance with the proposed TMDLs.

The adoption of a Basin Plan amendment is an activity subject to CEQA requirements because Basin Plan amendments constitute rules or regulations requiring the installation of pollution control equipment, establishing a performance standard, or establishing a treatment requirement.[1] TMDL Basin Plan amendments normally contain a quantifiable numeric target that interprets the applicable water quality objective. TMDLs also include wasteload allocations for point sources, and load allocations for nonpoint sources and natural background. The quantifiable target together with the allocations may be considered a performance standard.[2] Sections H.1.1 and H.1.2 below describe in detail the statutory requirements and scope of this environmental analysis required by CEQA for Basin Plan amendments.

H1.1 Exemption from Requirement to Prepare Standard CEQA Documents

CEQA authorizes the Secretary for Natural Resources Agency to certify certain state regulatory programs as exempt from the requirement to prepare an Environmental Impact Report (EIR), Negative Declaration, or Initial Study. The State Water Board's and the San Diego Water Board's Basin Plan amendment process is a certified regulatory program and is therefore exempt from CEQA's requirements to prepare such documents.[3]

[1] 14 CCR section 15187 (a) and Public Resources Code sections 21159-21159.4.
[2] The term "performance standard" is defined in the rulemaking provisions of the Administrative Procedure Act [Government Code sections 11340-l 1359]. A "performance standard" is a regulation that describes an objective with the criteria stated for achieving the objective [Government Code section 11342(d)].
[3] 14 CCR section 15251(g) and Public Resources Code section 21080.5.

The State Water Board's regulations for CEQA compliance[4] describe the environmental documents ("substitute environmental documentation") [5] required for Basin Plan amendment actions. These documents consist of a written report that contains the environmental analysis of the project and a completed environmental checklist that identifies any adverse environmental impacts, plus any other documents considered by the Board at adoption or approval.

For this project, these documents are the Technical Report entitled *Total Maximum Daily Loads for Toxic Pollutants in Sediment at San Diego Bay Shorelines – Mouths of Paleta Creek, Chollas Creek, and Switzer Creek* (Technical Report), the draft Basin Plan amendment in Appendix B, and the environmental analyses contained in this Appendix that includes a completed environmental checklist in Section H.3. These components fulfill the requirements of CEQA for preparation of environmental documents for this Basin Plan amendment.

H1.2 Scope of Environmental Analysis

CEQA has specific provisions that establish the scope of the environmental analysis required for the adoption of the Basin Plan amendment. The environmental analysis includes a description of the proposed project, an analysis of reasonable alternatives to the proposed project and mitigation measures to avoid or reduce adverse environmental impacts, and an analysis of reasonably foreseeable methods of compliance responsible parties may undertake in order to comply with the load allocations and wasteload allocations and achieve the TMDLs.

Specifically, the State Water Board's CEQA Implementation Regulations for Certified Regulatory Programs[6] require Substitute Environmental Documentation (SED) to include at least the following:

1. A brief description of the proposed project and its environmental setting. In this case, the proposed project is the Basin Plan amendment adopting TMDLs for Toxic Pollutants in Sediment at the mouths of Paleta, Chollas, and Switzer Creeks. See Section H2 of this appendix.

[4] 23 CCR section 3720 et seq. "Regulations for Implementation of the Environmental Quality Act of 1970."
[5] 23 CCR section 3777
[6] Ibid.

2. An analysis of reasonably foreseeable methods of compliance with the implementation plan associated with the TMDL and included in the Basin Plan amendment. This analysis includes:

    a. Identification of reasonably foreseeable methods of compliance with the project (Section H3);

    b. A completed Environmental Checklist, with analysis of reasonably foreseeable significant adverse environmental impacts associated with those methods of compliance (Sections H3 and H5);

    c. An analysis of reasonably foreseeable alternative methods of compliance that would have less significant adverse environmental impacts (Section H3); and

    d. An analysis of reasonably foreseeable mitigation measures that would minimize any unavoidable significant adverse environmental impacts of the reasonably foreseeable methods of compliance (Section H3).

3. Identification of significant or potentially significant adverse environmental impacts of the proposed project (Sections H3 and H5).

4. Evaluation of reasonable alternatives to the proposed project and mitigation measures to avoid or reduce any significant or potentially significant adverse environmental impacts (Section H4).

Additionally, the environmental analysis takes into account a reasonable range of:[7]

- Environmental factors
- Economic factors
- Technical factors
- Population
- Geographic areas
- Specific sites

The Basin Plan amendment project is analyzed on a programmatic basis. The CEQA statute states that the agency is not required to conduct a "project level analysis."[8] Project level analyses must be performed by the agencies permitting or undertaking specific projects that will implement the TMDLs.[9]

[7] 23 CCR section 3777(c); 14 CCR sections 15187(d) and 21159(c)
[8] Public Resources Code section 21159(d)
[9] Public Resources Code section 21159.2

Accordingly, the SED identifies, and analyzes, potential approaches to mitigation of possible environmental impacts of implementation, as well as reasonably foreseeable alternative means of compliance that would avoid, eliminate, or reduce possible impacts. Mitigation actions identified in the programmatic SED must be included in any project-level review,[10] although other mitigation actions may be appropriate for consideration at the project level. The San Diego Water Board intends this analysis to serve as a program level environmental review.[11]

H2. Project Description

H2.1 Purpose and Objectives of the Basin Plan Amendment Project

The San Diego Water Board's objective in adopting the TMDLs is to eliminate water quality problems caused by presence of toxic pollutants in sediment at the mouths of Paleta, Chollas, and Switzer Creeks and to restore the marine habitat, contact water recreation, and commercial and sport fishing beneficial use to this part of San Diego Bay.

The San Diego Water Board proposes an amendment to the Basin Plan to incorporate TMDL to reduce the amount of toxic pollutants in sediment at the creek mouths, specifically chlordane, total polycyclic aromatic hydrocarbons (PAHs), and total polychlorinated biphenyls (PCBs). The purpose of the Basin Plan amendment project is to restore the marine habitat, contact water recreation, and commercial and sport fishing beneficial use by attaining the Sediment Quality Objectives (SQOs) for the protection of benthic communities and human health, which was adopted by the State Water Board in 2008 and approved by the U.S. Environmental Protection Agency in 2009. This project will require dischargers of specified toxic pollutants to meet wasteload allocations (WLAs) in the watershed and concentration-based TMDLs in the creek mouth sediments and to demonstrate attainment of the SQOs in the creek mouth sediments, as stated in the Technical Report Section 2.3.2. The TMDLs for toxic pollutants in sediment and their derivation are also discussed in the Technical Report. The WLAs and their derivation and the concentration-based TMDLs are discussed in Section 8 of the Technical Report. The Implementation Plan and compliance schedule are discussed in Section 10 of the Technical Report. Dischargers may meet their WLAs over a phased compliance schedule that should result in attainment of water quality standards.

The TMDLs will be implemented primarily through permits issued to dischargers of urban runoff via federal National Pollutant Discharge Elimination System (NPDES) permits and waste discharge requirements and through the removal of contaminated sediment and sediment toxicity at the affected sites under Clean Water Act section 404 permits from the U.S. Army Corps of Engineers and section 401 Water Quality

[10] Public Resources Code sections 21068.5 and 21094(f); 14 CCR section 15152
[11] 14 CCR section 15152; 14 CCR section 15168

Certification by the San Diego Water Board. The dischargers, or Responsible Parties, responsible for taking actions to reduce storm water pollutant loads to the creek mouth areas and/or implement TMDL requirements are the cities of San Diego, La Mesa, Lemon Grove, and National City; the County of San Diego; the San Diego Unified Port District (Port of San Diego); the California Department of Transportation (Caltrans); the U.S. Navy (Naval Base San Diego); National Steel and Shipbuilding Company (NASSCO Shipyard); and owners/operators of industrial sites, construction sites, and regulated small municipal separate storm sewer systems (MS4s).

The adoption of a TMDL is not discretionary; rather, it is compelled by section 303(d) of the federal Clean Water Act, [12] which requires the states to assess surface waters and develop a list of "water quality limited segments" that are not meeting water quality standards (i.e., the "303(d) List"). States are required to establish TMDLs for these waterbodies, and indeed all waters within its boundaries, in order to assure protection and propagation of a balanced indigenous population of fish, shellfish, and wildlife.[13]

TMDLs are generally established in California through the basin planning process, i.e., an amendment to the Basin Plan that incorporates a new or revised program of implementation to meet water quality standards.[14] Once a Basin Plan amendment has been adopted by the Regional Water Board and approved by the State Water Board, it is submitted to the state Office of Administrative Law and finally to the U.S. Environmental Protection Agency (U.S. EPA) for approval. U.S. EPA also approve or amends the identification of impaired waters (303(d) List) as well as the establishment of loads (TMDLs, WLAs, and LAs) necessary to implement the applicable water quality standard. In the absence of a timely state-prepared list or TMDL, U.S. EPA is required to establish its own list or TMDL.[15]

H2.2 Environmental Setting

The Paleta, Chollas, and Switzer Creek watersheds are adjacent watersheds in the Pueblo San Diego Hydrologic Unit, which are located east of downtown San Diego and drain to San Diego Bay. Actions to achieve the TMDL for toxic pollutants in sediment at the mouths of these creeks will be implemented throughout the three watersheds (see Figure 2.1 in the Technical Report).

The watersheds are highly urbanized, with commercial and industrial land uses dominating the shoreline around the Bay. Much bayside property is owned and operated by the U.S. Navy and the Port of San Diego. Industries located along the Bay may be divided into three general categories: maritime, including boatyards and shipyards; aerospace; and various other industrial facilities.

[12] CWA section 303(d)(1)(C)
[13] CWA section 303(d)(3)
[14] Water Code section 13242
[15] CWA section 303(d)(2)

The San Diego Water Board identified the creek mouth areas in this project as San Diego Bay toxic hotspots and subsequently listed them as impaired for sediment toxicity and degraded benthic communities on the CWA section 303(d) List. The sediment in these areas is contaminated with organic pollutants and metals as a result of runoff from urban and industrial land uses. These contaminants have the potential to adversely affect biological resources.

All three creek mouth areas are located along artificial shorelines on the north side of the South Central (Paleta and Chollas creek mouths) and North Central (Switzer Creek mouth) regions of San Diego Bay. San Diego Bay, home to the largest naval complex in the world and California's second largest city, is designated as a State Estuary.[16] The Bay receives fresh water flows and urban runoff from a watershed of 415 square miles (1,930 square kilometers [km^2]) where 50 percent of the county's population lives or works. At the same time, it supports a many-tiered and complex food web and thriving fish and wildlife populations. The proportion of migrants on the Pacific Flyway or marine species navigating ocean currents that enter the Bay to breed, raise young, or rest is high considering the Bay's relatively small size (10,532 acres of water and 4,419 acres of tidelands) (U.S. Navy and Port of San Diego 2011).

Greater San Diego Bay, which includes the National Wildlife Refuge in the south bay, is impacted by pollution at the mouths of the three creeks because fish and wildlife species live and move throughout the estuary. The Bay provides habitat to federally and state endangered or threatened species (U.S. Navy and Port of San Diego 2011):

Species	Listing Designation[17]
Salt marsh bird's-beak	FE, SE
California least tern	FE, SE
Light-footed clapper rail	FE, SE
Western snowy plover	FT, CA SSC
East Pacific green sea turtle	FT

The bottlenose dolphin, harbor seal, and California sea lion use San Diego Bay on a regular basis and are protected under the federal Marine Mammal Protection Act. The East Pacific green sea turtle, a federally endangered marine reptile, is known to reside in San Diego Bay, which is the only area on the western coast of the United States where this species congregates (LSA Associates, Inc. 2011). Additionally, San Diego Bay provides essential fish habitat for six species managed by the Coastal Pelagic Species (CP) and the Pacific Coast Groundfish (GF) Fishery Management Plans, which include northern anchovy (CP), Pacific sardine (CP), Pacific mackerel (CP), jack mackerel (CP), California scorpionfish (GF), and English sole (GF) (LSA Associates, Inc. 2011). See Technical Report Section 2.3.1 for the Bay's designated/beneficial uses.

[16] Public Resource Code, Division 18, section 28003
[17] FE – federally listed as endangered; FT – federally listed as threatened; SE – state-listed as endangered; CA SSC – state species of special concern (DFG 2011; DFG 2012)

Largier et al. (1996, 1997) describes the South Central Bay as the Seasonally Hypersaline Region and the North Central Bay as the Thermal Region. The former is known to have abundant populations of slough anchovy, topsmelt, and spotted sand bass. The Thermal Region has young-of-year topsmelt and a surfperch nursery. Both regions have abundance, distribution, and diversity of invertebrate and algal species. (U.S. Navy and Port of San Diego 2011)

Figure H2-1. Management units based on Largier (1996, 1997). (U.S. Navy and Port of San Diego 2011)

The creek mouth areas are highly disturbed environments, subject to frequent ship propeller wash from boat activity and seasonal freshwater flows and sediment deposition during wet-weather events. The U.S. Navy uses Paleta Creek mouth for berthing of ships along quay walls and Chollas creek mouth for small craft docking and berthing of ships along quay walls. NASSCO Shipyard also berths ships at a pier in

Chollas Creek mouth. The Port of San Diego berths ships at the Tenth Avenue Marine Terminal in the Switzer Creek mouth area. As a result, Paleta, Chollas, and Switzer Creek mouth areas are maintained at operational depths: -20 to -37 feet Mean Lower Low Water (MLLW), -20 to -30 feet MLLW, and -35 feet MLLW, respectively. The depths at the outlets of Paleta and Chollas creeks are about -2 feet MLLW and then rapidly drop to -16 feet MLLW at Paleta Creek and -8 feet MLLW at Chollas Creek. The open water areas of the project footprint can be as deep as -42 feet MLLW in the Paleta Creek mouth area and -33 feet MLLW in the Chollas Creek mouth area.

The marine habitat present within the creek mouth areas consists of unvegetated subtidal soft bottom habitat, pier pilings, dock structures, quay walls, and open water. While not the intended use, the artificial hard substrates such as pier pilings, dock structures, and quay walls/bulkheads are habitat for many forms of marine life, such as encrusting and motile invertebrates (U.S. Navy and Port of San Diego 2011). All of these habitats support marine invertebrates and fish. Additionally, benthic organisms that populate the unvegetated subtidal soft bottom habitat (primarily polychaete worms, molluscs, and crustaceans) are a food source for fish and birds.

Table 2-1 in the Technical Report lists the acreage and percentage of each watershed draining to the impaired shoreline segments and the land uses located in those watershed areas based on the San Diego Regional Planning Agency (SANDAG) 2009 land use dataset. Figure 2-2 of the Technical Report presents the land use coverage for the three watersheds along with the delineated subwatersheds. The land uses incorporating the largest acreage (and percent of area) in the three watersheds include: low density residential, followed by roads, high density residential, commercial, institutional, and open space/recreation. Much of the high density residential land use is located in the northern portion of the Switzer Creek watershed. Industrial land uses are mainly concentrated at the mouths of the creeks.

The historic channels and floodplains of Paleta and Chollas creeks have been altered substantially over decades of development and human activity. Residential development, business complexes, roads and freeways have segmented the creeks' geography to the extent that almost all of their surrounding open space has been lost (City of San Diego 2002b). Paleta Creek is almost entirely concrete channeled or contained in an underground culvert (Janda-Timba 2009). Chollas Creek has little native vegetation and much of its length is armored or comprised of concrete channels and culverts (City of San Diego 2002a). Some restoration of soft channel bed and surrounding habitat has been completed on the South Branch of Chollas Creek.

A portion of Switzer Creek's upper watershed is open space within Balboa Park, along Florida Canyon; however, the headwaters in Switzer Canyon are confined by urban development (Figure H2-2). Just south of Balboa Park, the creek is piped underground. From this point, all drainage from this watershed is conveyed to San Diego Bay via a storm sewer – a 10-foot diameter reinforced concrete pipe traversing the Centre City business district to the outfall at Tenth Avenue Marine Terminal (Janda-Timba 2009).

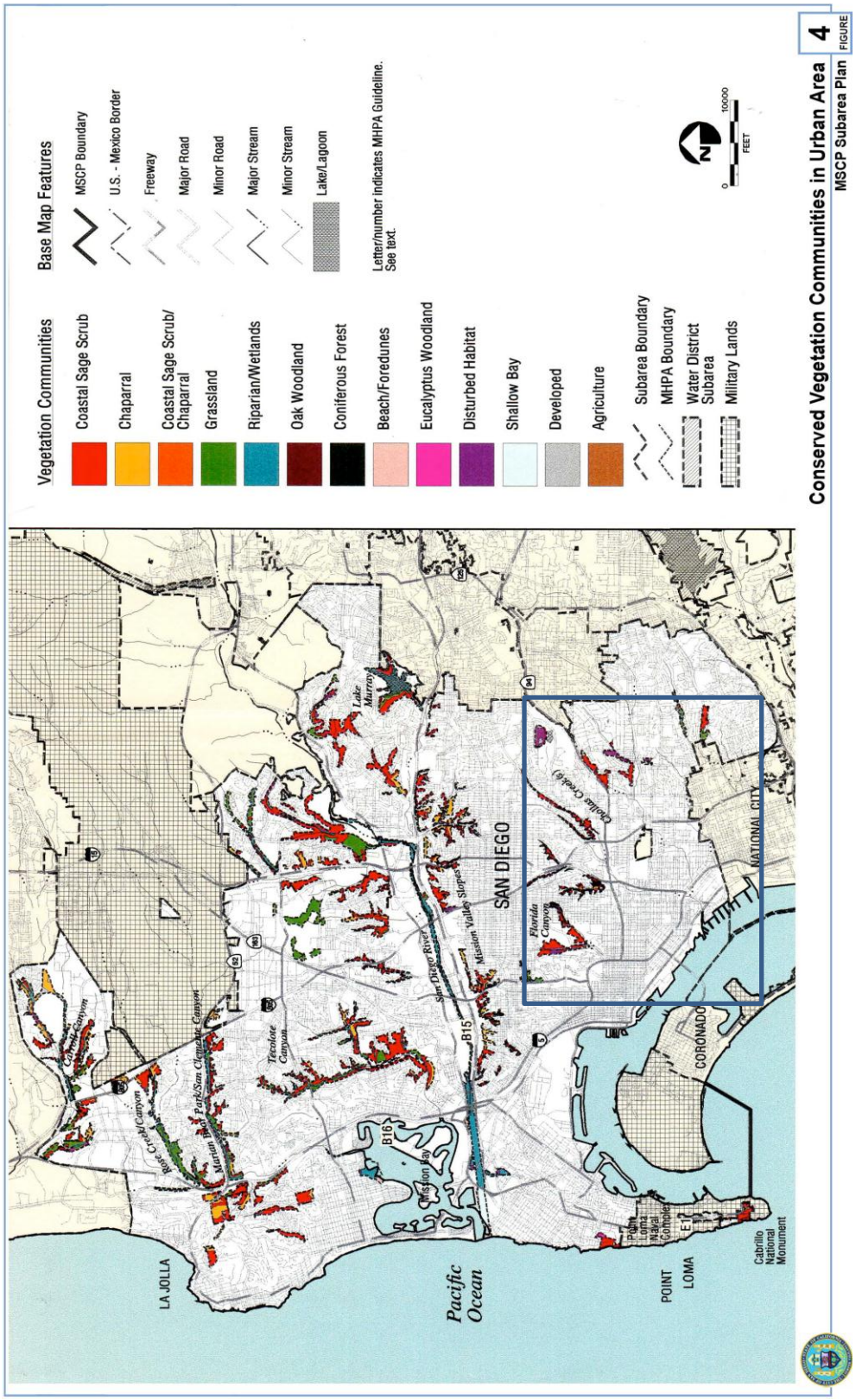

Figure H2-2. Small Canyon Systems in Urban San Diego
(City of San Diego 1997)

Flows from the three creeks are highly variable with the highest flow rates associated with storm events. During the summer, the creeks typically have only standing pools of water with no surface flow for extended periods of time.

In small canyon systems in the upper watershed, including Juniper Canyon, Manzanita Canyon, Florida Canyon, Switzer Canyon, and other segments along Chollas Creek, the creeks are completely surrounded by urban development (illustrated in Figure H2-2). The San Diego Multiple Species Conservation Program identified a mix of habitats in these areas, including coastal sage scrub, grasslands, riparian/wetlands, chaparral, and oak woodland. These lands, which contribute to the public's experience of nature and the local native environment, are managed according to existing Natural Resource Management Plans, Landscape Maintenance Districts, as conditions of permit approval, or are currently unmanaged (City of San Diego 1997).

The small canyon systems provide habitat to the following species (City of San Diego 1997):

Species	Listing Designation[18]
Orcutt's brodiaea	
wartstemmed ceanothus	
short-leaved dudleya	SE
San Diego button-celery	FE, SE
San Diego barrel cactus	
willowy monardella	FE, SE
San Diego goldenstar	
snake cholla	
California gnatcatcher	FT, CA SSC
least Bell's vireo	FE, SE
California least tern	FE, SE
Belding's savannah sparrow	SE
coastal cactus wren	CA SSC
western snowy plover	FT, CA SSC
light-footed clapper rail	FE, SE
mule deer	
orange-throated whiptail	

Many of the native plant communities within these creeks have been impacted or replaced by non-native and/or invasive species (such as *Arundo donax*). These types of plants can produce habitats that are much less desirable than the native plant species with regard not only to providing a structure to hide or perch, but also as a food source. Non-native and/ or invasive species also may grow so abundantly that they

[18] FE – federally listed as endangered; FT – federally listed as threatened; SE – state-listed as endangered; CA SSC – state species of special concern (DFG 2011; DFG 2012)

reduce the capacity of the stream channels, which may lead to more frequent or more severe flooding.

Neither the surface water nor groundwater resources in these watersheds are used for municipal or domestic drinking water supplies. In fact, the San Diego Water Board has exempted the groundwater from the MUN beneficial use designation under the terms and conditions of the State Water Board's *Sources of Drinking Water Policy*.[19] The predominant land uses in these watersheds are residential, industrial, commercial/institutional, roadways/highways, and open space. More information on the watershed characteristics is found in the Technical Report, section 2.1. It is worth noting that Chollas Creek is known to have a number of paleontological sites (see cultural resources discussion in section H3.2) (City of San Diego 2002a).

H2.3 Existing Regional, Local, and Specific Plans

Existing management plans that apply to the three watershed areas covered by this Basin Plan amendment are discussed below. These management plans either directly support or are generally consistent with the goal of this Basin Plan amendment – restoration of the water quality and beneficial uses of the three creek mouth areas within the San Diego Bay.

San Diego Bay Integrated Natural Resources Management Plan
The Integrated Natural Resources Management Plan (INRMP) is a long-term, collaborative strategy for managing the Bay's natural resources. It is the primary means by which the U.S. Navy and Port of San Diego (Port) jointly plan natural resources work in San Diego Bay (U.S. Navy and Port of San Diego 2011). The INRMP is intended to be an agent of natural resources stewardship and agency partnership. By understanding and considering the interconnections among all of the living resources and human uses of the Bay, across ownership and jurisdictional boundaries, San Diego Bay is viewed as a fragile ecosystem that requires management to maintain sustainable native populations and natural biodiversity.

The INRMP identifies a progression towards a bay that supports shorelines and waters richer and more abundant in native life. It also describes a future bay that, while used for thriving urban, commercial, and military needs, has greater opportunities for public access, recreation, education and enjoyment of the myriad benefits of a healthy ecosystem. The goal of the INRMP is to ensure the long-term health, restoration, and protection of San Diego Bay's ecosystem in concert with the Bay's economic, Naval, navigational, recreational, and fisheries needs. This management plan is consistent with the goal of this Basin Plan amendment.

[19] State Water Board Resolution No. 88-63

San Diego Bay Watershed Urban Runoff Management Plan

The San Diego Bay Watershed Urban Runoff Management Plan 2008 (WURMP) was prepared by the Port of San Diego, as the lead jurisdiction, in collaboration with the cities of Chula Vista, Coronado, Imperial Beach, La Mesa, Lemon Grove, National City, and San Diego, the County of San Diego, and San Diego County Regional Airport Authority. The WURMP meets the requirements of the NPDES Municipal Storm Water Permit for San Diego Copermittees (San Diego Water Board Order No. 2007-01; "Order"). The Order requires development and implementation of WURMPs for each of nine watershed management areas within San Diego County, including the three watershed areas addressed by this Basin Plan amendment.

The WURMP's primary goal is to cooperatively and through collaborative strategic planning decrease the sources and reduce the discharge of pollutants from municipal separate storm sewer systems (MS4s) that have been identified as causing high priority water quality problems. The WURMP identifies five primary objectives to strive towards this goal: (1) develop and expand methods to assess and improve water quality within the watershed; (2) implement activities to address the San Diego Bay Watershed Management Area high priority water quality problems; (3) integrate watershed principles into land use planning; (4) enhance public understanding of sources of water pollution within the watershed; and (5) encourage and enhance stakeholder involvement within the watershed. To help reach these goals and objectives, the San Diego Bay Watershed Workgroup will work to identify, implement, and assess appropriate watershed water quality, education, and public participation activities, as well as land use planning watershed-based mechanisms, to properly target high priority water quality problems and their sources.

To help reach these goals and objectives, the WURMP identifies and prioritizes water quality related issues within the watershed that can be potentially attributed (wholly or partially) to discharges from the municipal storm drain systems and may be addressed through a cross-jurisdictional approach. Additionally, activities to abate sources of pollution and restore and protect beneficial uses are also identified. Activities are generally directed towards load reduction and source abatement to address previously adopted TMDLs in Chollas Creek (i.e., Diazinon, dissolved metals, and bacteria). A number of the activities may be expanded to address organic pollutants (e.g., targeted automotive facility inspection and infiltration/biofiltration/filtration projects).

The WURMP was designed as an iterative process of watershed assessment, priority setting, monitoring, and implementation. At the conclusion of each yearly cycle, the process begins anew, allowing participants to respond to changing conditions or adjust strategies that have not performed as anticipated. This framework establishes mechanisms for the participants to evaluate priorities, improve coordination, assess program goals, and allocate finite resources in a cost-effective manner.

Multiple Species Conservation Program Plan

Portions of the three watersheds lie within the San Diego Multiple Species Conservation Program (MSCP) Plan. The cities of San Diego and La Mesa implement their respective portions of the MSCP Plan through subarea plans, which describe specific implementing mechanisms for the MSCP. The City of Lemon Grove did not develop a subarea plan and relies on existing policies to manage the remaining natural areas within its jurisdiction.

The MSCP is a comprehensive, long-term habitat conservation plan that addresses the needs of multiple covered species (e.g., species that are federally listed as threatened, state-listed as endangered, and/ or state-listed as species of special concern) and the preservation of natural vegetation communities in San Diego County. The MSCP addresses the potential impacts of urban growth, natural habitat loss, and species endangerment; and includes a plan to mitigate for the potential loss of the multiple covered species and their habitat due to the direct impacts of future development of both public and private lands within the MSCP area (City of San Diego, 1997).

The MSCP plan is consistent with the goal of this Basin Plan amendment in general. Potential implementation projects resulting from this Basin Plan amendment - BMP installation projects that involve minor construction and earth moving activities, in particular, may have the potential to affect the habitats of some covered species. This plan guides the local permitting required for construction of such projects.

Chollas Creek Enhancement Program Plan

Adopted by the San Diego City Council in 2002, the Chollas Creek Enhancement Program plan provides a community vision for development, existing City policies, design/development guidelines, and a strategy for implementation (City of San Diego 2002a). The vision for the Chollas Creek area is multi-faceted including: maintaining the natural areas in an undisturbed fashion, promoting cohesive new development that integrates buildings, open space, and the creek into successful and useable areas for the community, and restoring channeled creeks in urbanized areas to more natural and safe conditions.

One of the main objectives of the Community Vision for Chollas Creek Park is to foster the restoration and rehabilitation of the Creek's remaining wetlands by using existing wetland remnants as the source for wetland mitigation and enhancement for projects that disrupt wetland environments within the communities of Mid-City, Encanto Neighborhoods, Southeastern San Diego, and Barrio Logan, all within the Chollas Creek geographic area and hydrological basin.

The long-term goal of the watershed restoration projects included in this program plan is the establishment of a self-sustainable ecosystem that is in equilibrium with the surrounding landscape.

The boundaries of Chollas Creek Enhancement Program encompass the Chollas Creek channel, floodway and floodplain fringe including the first legal parcel abutting the Creek's floodway (channel). The Enhancement Program was partially funded by a grant from the California Coastal Conservancy which financed an environmental consultant contract to analyze and develop recommendations for wetland conservation, restoration, and rehabilitation. This plan supports the goal of this Basin Plan amendment.

Chollas Creek South Branch Implementation Program Plan
The Chollas Creek South Branch was identified as the first phase of implementation of the Chollas Creek Enhancement Program (City of San Diego 2002b). The purpose of the Implementation Program and Wetlands Management Plan is to serve as a baseline planning document for enhancing water quality and the quality of wetland resources associated with this urban creek. The primary reason is to document and preserve the few remaining wetlands within the creek's reach while allowing for development of the area. In addition, this document identifies areas where existing wetlands may be enhanced, where new wetlands may be created, and where wetlands resources may be linked to the community.

The following objectives are identified in the Wetlands Management Plan, which is consistent with the goal of this Basin Plan amendment:

- Improve aquatic habitat including surface water quality;
- Identify remaining functional wetlands habitats and their restoration opportunities;
- Reduce flood inundation risk and associated damages;
- Reduce invasive species;
- Improve recreation opportunities; and
- Create linkages between the creek and the surrounding communities.

Local General Plans and Community Plans
The County of San Diego and Cities of La Mesa, Lemon Grove, San Diego, and National City each have their own General Plans that establish policies of acceptable land uses and practices in their jurisdictions. General Plans form the framework for the growth and land development for each community.

<u>City of San Diego</u>
The City of San Diego's General Plan establishes citywide policies for growth and development. Individual communities develop community plans that provide tailored policies and long-range physical development guidance and are incorporated in the city's General Plan. The Community Plans provide refinement of the General Plan's citywide policies, designate land uses, and offer additional location-based recommendations. Chollas, Switzer, and a portion of Paleta creeks watersheds contain portions of the following communities within the City of San Diego:

Paleta Creek Watershed	Chollas Creek Watershed	Switzer Creek Watershed
City of San Diego	City of San Diego	City of San Diego
City of National City	City of La Mesa	Port of San Diego
	City of Lemon Grove	
	County of San Diego	
	Port of San Diego	

Port of San Diego

The Port of San Diego implements the Port Master Plan, which guides the Port Commissioners' policy decisions, including land use designations. The plan is certified by the California Coastal Commission as the Port's Local Coastal Plan. This allows the Port to directly issue coastal development permits to projects within its jurisdiction. The Port's regulatory requirements are codified in the San Diego Unified Port District Code.

H2.4 Regulatory Authorities

H2.4.1 Federal Regulatory Agencies

U. S. Environmental Protection Agency

The U.S. EPA is responsible for implementing the Clean Water Act. U.S. EPA must approve all TMDLs after (1) adoption by the Regional Water Quality Control Board; (2) approval by the State Water Resources Control Board; and (3) approval by the state Office of Administrative Law (OAL).

U.S. EPA staff comments on all stages of TMDL development.

U.S. Army Corps of Engineers

The U.S. Army Corps of Engineers (ACOE) administers and enforces Clean Water Act section 404, Rivers and Harbors Act section 10, and the Marine Protection, Research, and Sanctuaries Act section 103. ACOE is responsible for regulating construction, excavation, and deposition in navigable waters and for issuing section 404 permits for dredged or fill material into waters of the United States and into wetlands in compliance with U.S. EPA regulations. Potential implementation projects resulting from this Basin Plan amendment, such as sediment dredging and capping at the three creek-mouth areas will be subject to the 404 permit and/or Rivers and Harbors Act section 10 requirements issued by the ACOE.

U.S. Fish and Wildlife Service

The U.S. Fish and Wildlife Service (U.S. FWS) enforces the Fish and Wildlife Coordination Act, the Federal Endangered Species Act (FESA), the Migratory Bird Treaty Act, and the Bald and Golden Eagle Protection Act. U.S. FWS regulates, monitors, and implements programs for protecting the ecosystems upon which freshwater and estuarine fishes, wildlife, and habitat of listed species depend. U.S. FWS reviews and comments on federal actions that affect many habitat-related issues, including wetlands and waters considered under Clean Water Act section 404 and Rivers and Harbors Act section 10 permit applications. With National Marine Fisheries

Service (NMFS), and as requested by U.S. EPA, the agency also conducts FESA section 7 Consultation for possible impacts to listed species with federal status. U.S. FWS would review and comment on potential implementation projects that occur in waters of the U.S., such as sediment dredging and capping in the creek mouth areas, as required by CWA section 404.

National Marine Fisheries Service

NMFS enforces the Fish and Wildlife Coordination Act, FESA, the Magnuson-Stevens Fishery Conservation and Management Act, and the Marine Mammal Protection Act. NMFS is responsible for maintaining and conserving fisheries, rebuilding overfished stocks, and determining whether projects or activities adversely impact Essential Fish Habitat (EFH) zones. EFH has been designated over all tidal marine waters in southern California. Federal action agencies which fund, permit, or carry out activities that may adversely impact EFH are required to consult with the NMFS regarding the potential effects of their actions on EFH and respond in writing to the NMFS's recommendations. NMFS reviews and comments on federal actions that affect marine fishery resources and many habitat-related issues, including Clean Water Act section 404 and Rivers and Harbors Act section 10 permit applications. With the U.S. FWS and as requested by U.S. EPA, NMFS conducts FESA section 7 Consultations for potential impacts to migratory and endangered fish species. NMFS would review and comment on potential implementation projects that occur in waters of the U.S., such as sediment dredging and capping in the creek mouth areas, as required by CWA section 404.

U.S. Coast Guard

U.S. Coast Guard enforces the Ports and Waterways Safety Act, the Oil Pollution Act, the Fish and Wildlife Coordination Act, the Rivers and Harbors Act section 10, the Clean Water Act, and the Marine Protection, Research, and Sanctuaries Act. The U.S. Coast Guard is responsible for maritime safety and law enforcement and environmental protection. The U.S. Coast Guard also ensures cleanup of marine oil spills and other pollutants. The U.S. Coast Guard reviews and comments on navigational issues, which includes structures affecting navigation, ACOE section 404 dredge and fill permits, and new pilings. U.S. Coast Guard would review and comment on potential implementation projects that occur in waters of the U.S., such as sediment dredging and capping in the creek mouth areas, as required by CWA section 404.

H2.4.2 California State Regulatory Agencies

State Water Resources Control Board and the San Diego Regional Water Quality Control Board (Water Boards)

The primary responsibility for water quality protection in California rests with the State Water Resources Control Board (State Water Board) and the nine Regional Water Quality Control Boards (Regional Water Boards). The State Water Board and Regional Water Boards share responsibility for regulating storm water discharges. The State Water Board issues statewide NPDES permits for Caltrans (Order No. 99-06-DWQ); for industrial discharges (Industrial General Permit Order No. 97-03-DWQ); for construction that disturbs more than one acre (Construction General Permit Order No. 2009-0009-

DWQ); and for small MS4s under a General Permit for the Discharge of Storm Water from Small MS4s (Order No. 2003-0005-DWQ).

The Porter-Cologne Water Quality Control Act of 1969 requires that water quality control plans in California, including basin plans and basin plan amendments, incorporate a plan of implementation.

California's Antidegradation Policy (State Water Board Resolution No. 68-16, "Statement of Policy with Respect to Maintaining High Quality Water" in California), protects surface and ground waters from degradation (SWRCB 1968). Any actions that can adversely affect water quality in all surface and ground waters must be consistent with the maximum benefit to the people of the state, must not unreasonably affect present and anticipated beneficial use of such water, and must not result in water quality less than that prescribed in water quality plans and policies. Furthermore, any actions that can adversely affect surface waters are subject to the federal Anti-degradation Policy (40 CFR 131.12).

The Water Quality Control Plan for the San Diego Basin (Basin Plan), in which these toxic pollutant TMDLs for San Diego Bay creek mouth sediments will be incorporated, is the master planning document for water quality in San Diego. Basin Plan provisions, including TMDL implementation plans, are carried out and enforced by the San Diego Water Board through its various permitting authorities, orders, and prohibitions.

The San Diego Water Board regulates storm water discharges from the NPDES Phase I MS4s (medium and large MS4s serving populations of 100,000 or more) that discharge to the Paleta, Chollas, and Switzer Creek watersheds and San Diego Bay. These permits require the municipalities to develop and implement comprehensive storm water management plans, which provide the framework for local government storm water programs. CEQA does not require that aspects of existing NPDES permits and associated storm water management programs be reviewed within the CEQA analysis of this Basin Plan amendment.

NPDES municipal storm water permits generally have five-year update cycles. Following adoption of the TMDL, the San Diego Water Board will incorporate the TMDL's WLAs and associated milestone requirements into the permits and require the copermittees to amend their storm water management plans accordingly. While Caltrans is a Responsible Party to this TMDL and is required to comply with the Basin Plan once this TMDL is incorporated, the statewide NPDES General Permit regulating discharges from Caltrans will also be amended to include similar planning and WLA requirements.

Potential implementation projects resulting from this Basin Plan amendment, such as sediment dredging and capping at the three creek-mouth areas will be subject to federal 404 permit requirements issued by the ACOE. CWA section 401 requires that any person applying for a federal permit, which may result in a discharge of pollutants into

waters of the United States, obtain a water quality certification that the specific activity complies with all applicable state water quality standards, limitations, requirements, and restrictions. The San Diego Water Board will review a section 401 Certification application to determine whether the project will comply with the applicable provisions of sections 301 ("Effluent Limitations"), 302 ("Water Quality Related Effluent Limitations"), 303 ("Water Quality Standards and Implementation Plans"), 306 ("National Standards of Performance"), and 307 ("Toxic and Pretreatment Effluent Standards") of the Clean Water Act and may either certify the project or deny certification, with or without prejudice. To ensure that water quality standards, limitations, requirements, and restrictions are met, the San Diego Water Board will require conditions on the certification of a project to ensure that water quality standards, limitations, requirements, and restrictions are met and mitigate for any impacts.

California Department of Fish and Wildlife

The California Department of Fish and Wildlife (DFW), formerly the Department of Fish and Game, issues permits for incidental takes of state listed species under sections 2081(b) and (c) of the California Endangered Species Act and provides section 2081 consultation for effects to listed species.

If DFW determines that an activity may substantially adversely affect fish and wildlife resources, the applicant must prepare a Stream Alteration Agreement that includes reasonable conditions necessary to protect those resources. Compliance with CEQA is also required. DFW may comment on this environmental impact analysis (for potential implementation projects of this Basin Plan amendment) pursuant to CEQA to address issues with a potential to adversely affect avian and marine species.

California Coastal Commission

The Coastal Commission, in partnership with coastal cities and counties, plans and regulates the use of land and water in the coastal zone. Development activities, which are broadly defined by the California Coastal Act to include (among others) construction of buildings, divisions of land, and activities that change the intensity of use of land or public access to coastal waters, generally require a coastal development permit from either the Coastal Commission or the local government. Likewise, coastal development permits will be required for the sediment dredging and capping projects that involve drying sediments onshore at staging areas along the coast of San Diego Bay.

California State Lands Commission

The California State Lands Commission (CSLC) manages nearly 4 million acres of “sovereign lands,” which includes the beds of (1) more than 120 rivers, streams, and sloughs; (2) nearly 40 non-tidal navigable lakes; (3) tidal navigable bays and lagoons; and (4) tidal and submerged lands adjacent to the entire coast and offshore islands of California from the mean high tide line to 3 nautical miles offshore. Sovereign lands can only be used for public purposes consistent with provisions of the Public Trust such as fishing, water-dependent commerce and navigation, ecological preservation, and scientific study (CSLC, 2010).

CSLC's jurisdiction within San Diego Bay includes the main shipping channel, extending to a line along the pierhead/bulkhead line (U.S Navy and Port of San Diego 2011, Map 3-3). While the three creek mouth areas within San Diego Bay are not within the CSLC's jurisdiction, potential sediment dredging and capping activities associated with this Basin Plan amendment may affect the "sovereign lands." CSLC will be notified and given an opportunity to comment on this project.

H2.4.3 Local Regulatory Agencies

Local municipalities in each of the three watersheds addressed by this Basin Plan amendment will be responsible for implementing components of the TMDL implementation plan including mitigation requirements noted in Section H3.2.

The Cities of San Diego, La Mesa, Lemon Grove, and National City, the County of San Diego, and the Port of San Diego have ordinances that require permits for construction and grading activities. Their regulations cover development plans and community plans. Based on the requirements of the General Plans, or other appropriate plans, responsible departments at each municipality issue a variety of permits to enforce the municipalities' ordinances in aspects of Biological Mitigation; Resource Protection; Zoning; Watershed Protection, Storm Water Management, and Discharge Control; Noise; Flood Damage Protection; Habitat Loss Permit; Grading, Clearing, and Watercourses Ordinances; etc.

City of San Diego

The City of San Diego's General Plan establishes the citywide policies for growth and development. The City of San Diego's Community Plans provide refinement of the General Plan's citywide policies, designates land uses, and offers additional location-based recommendations. Chollas, Switzer, and a portion of Paleta creeks watersheds contain portions of the following communities within the City of San Diego:

Paleta Creek Watershed	Chollas Creek Watershed	Switzer Creek Watershed
Encanto Neighborhoods	City Heights	Greater North Park
Southeastern San Diego	Eastern Area	Greater Golden Hills
Barrio Logan	Encanto Neighborhoods	Centre City
	Southeastern San Diego	
	Barrio Logan.	

The City of San Diego implements and enforces the Elements of the General Plan (Land Use and Community Planning; Mobility; Economic Prosperity; Public Facilities, Services and Safety; Urban Design; Recreation; Historic Preservation; Conservation; Noise; and Housing) and Community Plans through its various departments including, but not limited to: Development Services, Environmental Services, Public Utilities, Park & Recreation, Public Works, and Transportation & Storm Water.

City of La Mesa
The City of La Mesa's Community Development Department implements and enforces the City's General Plan, Specific Plans, and Zoning Ordinances. The General Plan includes the following elements: Land Use, Circulation, Conservation and Open Space, Historic Preservation, Noise, Safety, Public Services and Facilities, and Housing.

City of Lemon Grove
The City of Lemon Grove's Development Services Department implements and enforces the General Plan and Zoning Ordinances. The General Plan includes the following elements: Community Development, Mobility, Bicycle Facilities, Public Facilities, Safety, Noise, Conservation and Recreation, and Housing.

National City
National City's Development Services Department implements and enforces the General Plan, Land Use Code, Local Coastal Program Land Use Plan, Downtown Specific Plan. The General Plan contains land use and development policies that serve as the foundation for all planning decisions. The General Plan includes the following elements: Land Use and Community Character, Circulation, Housing, Safety, Noise and Nuisance, Open Space and Agriculture,[20] Conservation and Sustainability, Health and Environmental Justice, and Education and Community Participation. The Land Use Code implements the broad policies of the General Plan by specifying the kinds and types of uses permitted on each parcel of land, the intensity of development allowed, and standards for development.

County of San Diego
Within the County of San Diego, the Land Use and Environmental Group coordinates the County's efforts in land use, environmental protection and preservation, recreation, and infrastructure development and maintenance. The Land Use and Environmental Group consist of seven departments: Air Pollution Control District; Agriculture, Weights and Measures; Environmental Health; Farm and Home Advisor; Parks and Recreation; Planning and Land Use; and Public Works. These departments issue a variety of permits to enforce County Ordinances including, but not limited to: Biological Mitigation; Resource Protection; Zoning; Watershed Protection, Storm Water Management, and Discharge Control; Noise; Flood Damage Protection; Habitat Loss Permit; Grading, Clearing, and Watercourses Ordinances.

Air Pollution Control District
The County of San Diego Air Pollution Control District evaluates and issues construction and operating permits to ensure proposed new or modified commercial and industrial equipment and operations comply with air pollution control laws.

[20] The National City General Plan Open Space and Agriculture Element defines "agriculture" as urban agriculture and community gardens, which includes planning for the development of community gardens, fruit-tree planting in the public right-of-way, and private gardens for personal food production.

Planning and Land Use
The County of San Diego Department of Planning and Land Use (DPLU) issues various permits including building and discretionary permits. DPLU is home to the Green Building Program and Multiple Species Conservation Program. In general, DPLU helps create and maintain the general plan; maintain and improve the zoning ordinance; and advise the Board of Supervisors and San Diego County Planning Commission on land use projects.

Public Works
The County of San Diego Public Works Department issues a variety of permits including: construction, drainage easement encroachment, encroachment, excavation, grading, moving, planting, and traffic control permits. The Public Works Department is responsible for: County-maintained roads; traffic engineering; land development civil engineering review; design engineering and construction management; land surveying and map processing; cartographic services; watershed quality and flood protection; County Airports; solid waste planning and diversion; inactive landfills; wastewater systems management; and special districts, such as the Flood Control District.

Port of San Diego
The Port of San Diego is a public benefit corporation and special government entity. Created in 1963 by an act of the California legislature, the Port manages San Diego harbor and administers the public lands along San Diego Bay. It is responsible for the protection and enhancement of 2,508 acres of tideland and 2,860 acres of water (U.S. Navy and Port of San Diego 2011).

The Port's mission is to protect the Tidelands Trust resources, balance economic benefits, community services, environmental stewardship, and public safety on behalf of the citizens of California. The Port's environmental stewardship programs encompass wildlife and natural resources management, storm water runoff programs, integrated pest management, environmental education programs, and environmental partnerships with public and private entities. (U.S. Navy and Port of San Diego 2011)

The Port holds and manages trust property through the implementation and enforcement of the San Diego Unified Port District Code within its jurisdiction. The Port District Code includes rules and regulations governing property management operations, marine operations, airport operations, general operations, engineering, police measures, debarment, and storm water control. The Environmental Services Department oversees the Port's environmental programs and the Land Use and Planning Department conducts environmental reviews of development projects. The Port is identified as a responsible party in the Basin Plan amendment.

H2.5 Public Participation and Consultation

CEQA's requirement for "Early Public Consultation" was met by holding a CEQA Scoping Meeting.[21] Notice of the CEQA Scoping Meeting for this project was issued on August 26, 2008 for the October 14, 2008 CEQA Scoping Meeting. The notice was posted on the San Diego Water Board website and published in the San Diego Union Tribune on ~~January 13, 2011~~August 30, 2008. The CEQA scoping meeting was held at the office of the San Diego Water Board and was attended by representatives of the cities of San Diego, La Mesa, Lemon Grove, and National City, Port of San Diego, Caltrans, U.S. Navy, County of San Diego, NASSCO Shipyard, several small MS4 facilities, and members of the public and environmental community. Comments received during the meeting have been incorporated into the SED.

A Notice of Filing and the availability of the SED for this project were posted on the San Diego Water Board website and noticed in the San Diego Union Tribune on February 19, 2013. The formal public comment period was from Tuesday, February 19, 2013 through Monday, April 8, 2013, for a total of 48 days. Concurrently, a Notice of Public Hearing was issued for a public hearing before the San Diego Water Board to consider the adoption of the proposed Basin Plan Amendment on June 12, 2013.

The Notice of Filing serves as the notification to Responsible Agencies requesting consultation on the project, Trustee Agencies with potentially affected resources, and other state, federal, and local agencies with authority or jurisdiction over potentially affected resources. As Trustee Agencies with resources affected by the project, the California Coastal Commission, California State Lands Commission, and California Department of Fish and Wildlife were provided the Notice of Filing by mail on Tuesday, February 19, 2013.[22] The California Air Resources Board, the San Diego Air Pollution Control District, U.S. FWS, and local tribes were also provided this notice.

H3. Reasonably Foreseeable Methods of Compliance and Environmental Impacts Analysis

As stated previously, the environmental analysis must include an analysis of the reasonably foreseeable environmental impacts of the reasonably foreseeable methods of compliance and the reasonably foreseeable feasible mitigation measures to avoid or reduce any significant adverse environmental impacts. This section discusses compliance method alternatives and analyses for the environmental impacts and foreseeable mitigation measures as they pertain to the questions in the Environmental Checklist.

[21] 14 CCR section 15083
[22] 14 CCR section 15086

H3.1 Reasonably Foreseeable Methods of Compliance with the Basin Plan Amendment

The Basin Plan amendment implementation plan requires that actions be taken to achieve the mass-based WLAs and concentration-based TMDLs for toxic pollutants in sediment at the three creek mouths. The proposed Basin Plan amendment would affect the immediate three creek mouth areas in San Diego Bay and their associated watersheds.

The amendment does not prescribe specific projects through which dischargers and discharge categories are to meet the WLAs. Rather, it directs responsible parties to develop load reduction plans and implement actions that will control and/or reduce pollutant loading to San Diego Bay. Additionally, the amendment requires that responsible parties take actions to remediate contaminated sediment in the creek mouth areas to attain concentration-based TMDLs and restore beneficial uses.

Accordingly, adoption of the proposed Basin Plan amendment; however, will result in future actions by landowners, municipalities, and other agencies to comply with the requirements of the Basin Plan amendment. Some of these actions could result in physical changes to the environment. The environmental impacts of such physical changes are evaluated below to the extent that they are reasonably foreseeable.

Until the parties that are responsible for complying with a Water Board permit, order, or other requirements derived from this Basin Plan amendment propose specific projects, many physical changes cannot be anticipated. That said, it is reasonably foreseeable that a range of actions will be implemented by responsible parties as a result of this Basin Plan amendment. Installation and, in some cases, operation of BMPs could result in a physical change of the environment. The range of BMPs will likely include a variety of permanent structural BMPs, temporary structural BMPs, and non-structural BMPs. The nature of foreseeable physical change in the environment considered in this analysis is presented in Table H3-1 and discussed below. Sediment remediation activities are also evaluated. These actions are considered in the following analysis in general programmatic terms.

Table H3-1. Range of Reasonably Foreseeable Methods and Alternative Methods of Compliance

Reasonably Foreseeable Actions	Potential Environmental Changes Subject to Review
Structural Controls	
Install permanent treatment control BMPs Examples: infiltration/retention facilities, vegetated/bio- swales, buffer strips, and/or storm drain inserts	Minor construction, earthmoving, decrease in sediment contribution to receiving water, and/or reduce peak storm flows in channels
Install temporary erosion/sediment control BMPs (during construction of development/redevelopment sites) Examples: straw/fiber rolls, silt fencing, geotextile covers/mats, and/or storm drain inlet protection	Decrease in sediment contribution to receiving water
Non-structural BMPs	
Operate/use source control BMPs Examples: additional street sweeping and/or good housekeeping practices	Decrease in sediment contribution to receiving water
Sediment Remediation	
Removal of Contaminated Sediment Examples: dredging and/or capping (includes sediment dredging operations, dredge material dewatering, transportation/disposal, and/or capping operations)	Environmental cleanup dredging and/or capping activities

- **Minor construction**. Minor construction, such as small-scale digging, demolition, and/or surface improvement may be performed during installation of permanent, structural BMPs. Examples may include: a) construction and maintenance of retention or infiltration facilities to capture sediment and reduce surface runoff during storms; b) construction of vegetated/bio- swales or buffer strips to deposit sediment entrained in surface runoff; and c) retrofit of storm drain inlets with inserts to remove sediment and filter pollutants. Minor construction may also be needed as part of the maintenance of some BMPs.

- **Earthmoving operations**. Earthmoving operations may include clearing, grading, and/or excavation during some permanent, structural BMP installations. For example, construction of retention/infiltration basins or swales may require excavation and re-grading to contour a basin or shallow channel.

- **Decrease sediment contribution to receiving water**. The intended purpose of implementing structural and non-structural BMPs is to control, reduce, and/or remove organic pollutants associated with sediment from being washed into the receiving water and deposited in a creek and San Diego Bay. Permanent structural BMPs, such as storm water infiltration trenches, treat runoff through filtration and retention of water prior to discharge to a conveyance system or receiving water. Temporary structural BMPs, such as fiber rolls, silt fencing, or geotextile covers, can be used to stabilize disturbed soil areas and reduce or prevent erosion of soils that may have been contaminated with pollutants (e.g., legacy pesticide treatment). Non-structural BMPs like street sweeping can clean and remove debris, sediment, and urban pollutants that accumulate on street surfaces before they are washed into the conveyance system and discharged into the receiving water. Additionally, good housekeeping practices, as a form of source control, can prevent pollutants from leaving an industrial or construction site and being discharged into the receiving water, effectively reducing pollutant loading.

- **Reduce peak flows in channels**. Implementation of BMPs, such as retention and infiltration facilities can result in decreased wet-weather flows in channels due to reductions in peak discharge and a decreased in runoff volume from impermeable areas. A decrease in wet-weather flows reduces erosion and the transport of sediment and pollutants to the creek mouth areas in the Bay.

- **Environmental cleanup dredging and/or capping activities**. Remedial actions to remove contaminated sediment are expected to include environmental cleanup dredging, application of clean sand cover, or containment capping. Typically, environmental dredging requires the mechanical dredging of sediment, dewatering, stockpiling, and transport of dredge materials to an appropriate disposal facility. Capping dredged areas with a layer of clean sand may be used to ensure that clean material is available to support beneficial uses. An engineered containment cap is another alternative that may be considered to isolate contaminated sediment that cannot be removed from the open water environment.

These examples of possible, technologically feasible actions are not intended to be exhaustive or exclusive. Other conceivable actions that could be taken as a result of the Basin Plan amendment require speculation, and therefore, cannot be evaluated. For example, although the implementation plan recognizes coordinated planning efforts among local, state, and federal government agencies to enhance water quality within these watersheds, actual outcomes and specific actions resulting from the proposed partnership are too speculative to determine at this time. Also, as discussed above, even in cases where some physical changes are foreseeable, the exact nature of these

changes is speculative pending specific project proposals that will be ultimately put forth by those subject to requirements derived from the Basin Plan amendment. Under CEQA, the permitting agencies for such future projects will be the Lead Agencies, and those agencies must perform CEQA review as required.

The Water Board is required to include an analysis of reasonably foreseeable alternative means of compliance when adopting new rules or regulations, which would avoid or eliminate the identified impacts.[23] The responsible parties can implement the structural and non-structural BMPs and sediment remediation actions described in Section H3.1. Or, the responsible parties can implement other structural and non-structural BMPs to control and prevent pollution and perform other sediment remediation actions to remove contaminated sediment, in order to meet and comply with the TMDLs' required load reductions and concentration targets.

For project-related activity in the watershed, the alternative means of compliance with the TMDLs consists of utilizing different combinations of structural and non-structural BMPs to achieve the purpose of the TMDLs. Because there are innumerable ways to combine BMPs, all of the possible alternative means of compliance cannot be discussed here. However, because most of the adverse environmental effects are associated with the construction and installation of structural BMPs, to avoid or eliminate impacts, compliance alternatives should minimize structural BMPs, maximize non-structural BMPs, and site, size, and design structural BMPs in ways to minimize environmental effects. Additionally, structural BMPs like storm drain inserts that are in-line within the conveyance system in developed areas would have fewer environmental effects than construction within the corridor along natural areas.

For example, in residential and commercial areas where chlordane loading is higher than in high-density urban or highway areas, the dischargers might be able to reduce loading through nonstructural BMPs like increased street sweeping and storm drain inserts, development and enforcement of municipal ordinances prohibiting discharge of sediment to storm water and storm water drainage pathways. This compliance alternative would be environmentally superior to constructing detention basins and treatment works in residential areas.

For sediment remediation activities, the alternative means of compliance with the TMDLs consists of removing or isolating the contaminated sediment from the environment. Dredging is the likely alternative compared to capping because all three creek mouth areas are subject to frequent boat usage and movement that could potentially interfere with the integrity of a cap. Additionally, the creek mouth areas are periodically dredged to maintain operational depths by removing the watershed sedimentation. There are, however, alternatives for use within the dredging operations that could lessen environmental impacts, such as the type of dredge used and the operational methods used to conduct the dredging processing. For example, the use of environmental clamshell buckets to minimize disturbance and distribution of

[23] 14 CCR section 15187(c)(3) and 23 CCR section 3777(b)(4)(C).

contamination from the site and a nearby staging area will reduce the amount of emissions generated by the equipment.

H3.2 Environmental Checklist

This section contains the Lead Agency's analysis of reasonably foreseeable adverse environmental effects of the proposed Basin Plan amendment in each category in the environmental checklist.[24] The proposed amendment does not define the specific actions that responsible parties would take to achieve water quality objectives. The San Diego Water Board is precluded from specifying methods of compliance with its regulations,[25] and accordingly, actual environmental impacts will necessarily depend upon compliance strategies selected by the responsible parties.

This analysis considers a reasonable range of compliance measures, as described in Section H3.1, above, and takes into account environmental and technical factors, population and geographic areas, and specific sites.

	Potentially Significant Impact	Less Than Significant with Mitigation	Less Than Significant Impact	No Impact
I. AESTHETICS: Would the project:				
a) Have a substantial adverse effect on a scenic vista	☐	☐	☐	☒
b) Substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within a state scenic highway	☐	☐	☐	☒
c) Substantially degrade the existing visual character or quality of the site and its surroundings?	☐	☐	☒	☐
d) Create a new source of substantial light or glare which would adversely affect day or nighttime views in the area?	☐	☐	☐	☒

Discussion:

a) Potential implementation projects resulting from this Basin Plan amendment that include minor construction, earthmoving, dredging, or capping activities would not affect the scenic vista of San Diego Bay from Point Loma or Coronado. The three watersheds are adjacent to the Centre City skyline and have an urban character. The waterfront of these watersheds is industrial. Any physical changes to the aesthetic environment as a result of the Basin Plan amendment would either be small in scale compared to the viewshed, short-term in nature until vegetation re-establishes in any disturbed areas, or

[24] Appendix A to 23CCR sections 3720-3781
[25] Water Code section 13360

similar to the urban and industrial character, which would not detract from the view causing an impact.

b) Potential implementation projects that include minor construction, earthmoving, dredging, or capping activities would not substantially affect the scenic resources of San Diego Bay, such as detracting from the existing visual character or quality of any scenic vantage points,[26] identified by the Cities of San Diego (2008) and National City, or view from the Coronado Bridge and Silver Strand Boulevard, officially designated State Scenic Highways (Caltrans 2012). The watersheds are fully developed and have an urban and industrial character. Reasonably foreseeable structural BMPs would be low to the ground and not cause obstruction of scenic vantage points. Any physical changes to the aesthetic environment as a result of the Basin Plan amendment would be small in small in scale within the surrounding environment, short-term in nature until re-vegetation of any disturbed areas, or similar to the urban and industrial character of the surrounding environment.

c) Construction activity during installation of structural BMPs may create an aesthetically offensive view during construction, but this would be temporary until construction is completed and re-vegetated areas become established. The watersheds are fully developed and have an urban and industrial character. Because the local communities are already developed, reasonably foreseeable structural BMPs would be small in scale, height, and bulk and would not significantly degrade the local visual character. Specific implementation projects will be subject to the local development review process and compliance with local ordinances that would ensure that consistency with the local character of the community is maintained. Structural BMPs, such as swales and buffer zones, can be designed to provide aesthetically pleasing wildlife habitat, recreational areas, and green spaces.

Furthermore, one of the goals/objectives for urban habitat lands in the City of San Diego MSCP Subarea Plan is to afford visual enjoyment and psychological relief from urbanization, while supporting habitat for the maintenance of both common and rare species. Therefore, City of San Diego regulations, which afford protection to Multiple Species Conservation Plan areas, such as steep hillsides in small canyons, also afford protection of aesthetic and visual value in that area. These regulations include the City's Resource Protection Ordinance; the Environmentally Sensitive Lands Ordinance; and the Steep Hillside Guidelines.

For these reasons, the Water Board finds that implementation of the TMDL will cause a less than significant impact on the existing visual character or quality of the site and its surroundings.

[26] City of San Diego, Draft General Plan Final PEIR, Section 3.16, Table 3.16-1 Community Plan Identified Public Vantage Points; National City General Plan, Land Use and Community Character Element, Figure LU-5.

d) Actions and projects that implement the Basin Plan amendment would not foreseeably include new lighting or installation of large structures that could generate reflected sunlight or glare. Adoption of the Basin Plan amendment would not result in adverse light and glare impacts.

	Potentially Significant Impact	Less Than Significant with Mitigation	Less Than Significant Impact	No Impact
II. AGRICULTURE AND FOREST RESOURCES: In determining whether impacts to agricultural resources are significant environmental effects, lead agencies may refer to the California Agricultural Land Evaluation and Site Assessment Model (1997) prepared by the California Dept. of Conservation as an optional model to use in assessing impacts on agriculture and farmland. In determining whether impacts to forest resources, including timberland, are significant environmental effects, lead agencies may refer to information compiled by the California Department of Forestry and Fire Protection regarding the state's inventory of forest land, including the Forest and Range Assessment Project and the Forest Legacy Assessment Project; and the forest carbon measurement methodology provided in Forest Protocols adopted by the California Air Resources Board. Would the project:				
a) Convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance (Farmland), as shown on the maps prepared pursuant to the Farmland Mapping and Monitoring Program of the California Resources Agency, to non-agricultural use?	☐	☐	☐	☒
b) Conflict with existing zoning for agricultural use, or a Williamson Act contract?	☐	☐	☐	☒
c) Conflict with existing zoning for, or cause rezoning of, forest land (as defined in Public Resources Code section 12220(g)), timberland (as defined by Public Resources Code section 4526), or timberland zoned Timberland Production (as defined by Government Code section 51104(g))?	☐	☐	☐	☒
d) Result in the loss of forest land or conversion of forest land to non-forest use?	☐	☐	☐	☒
e) Involve other changes in the existing environment which, due to their location or nature, could result in conversion of Farmland, to non-agricultural use or conversion of forest land to non-forest use?	☐	☐	☐	☒

Discussion:

a) According to the California Department of Conservation's (DOC) Farmland Mapping and Monitoring Program, the Paleta, Chollas, and Switzer Creek watersheds do not have any Prime Farmland, Unique Farmland, or Farmland of Statewide Importance acreage in the Cities of San Diego, La Mesa, Lemon Grove, or National City (DOC, 2010). Therefore, adoption of the Basin Plan amendment will not result in conversion of prime farmland, unique farmland, or farmland of statewide importance to non-agricultural use and will not cause an impact.

b) According to the DOC's San Diego County Williamson Act Lands 2008 Map, there are no Williamson Act lands designated in the Paleta, Chollas, and Switzer Creek watersheds (DOC, 2009). The City of San Diego does not have any exclusively zoned agricultural zoning in the Paleta, Chollas, or Switzer creek watersheds.[27] Neither of the cities of La Mesa or Lemon Grove has specific zoning for agriculture in the Chollas Creek watershed.[28] National City does not have any exclusively zoned agricultural zoning in Paleta Creek watershed.[29] The County's property in the Chollas Creek watershed is a cemetery that has a land use designation of Public/Semi-Public Facilities.[30] Implementation of the Basin Plan amendment, regardless of which method of compliance is ultimately chosen, will not conflict with existing zoning for agricultural use, or a Williamson Act Contract.

c) Potential implementation projects resulting from this Basin Plan amendment will not conflict with existing zoning for, or cause rezoning of, forest land, timberland, or timberland zoned Timberland Production because forest land or timberland do not exist in any of the Paleta, Chollas, and Switzer Creek watersheds (Shih, 2002, Table 7).[31] Therefore, no impacts will occur.

d) Potential implementation projects will not result in the loss of forest land or conversion of forest land to non-forest use because forest land does not exist in the Paleta, Chollas, and Switzer creek watersheds.[32] Therefore, no impacts will occur.

e) Potential implementation projects will not result in a conversion of farmland to non-agricultural use or of forest land to non-forest use because neither farmland nor forest land exist in these watersheds. Therefore, no impacts will occur.

[27] City of San Diego General Plan, Land Use and Community Planning Element, Figure LU-2
[28] City of La Mesa General Plan, Land Use and Urban Design Element; City of Lemon Grove General Plan, Community Development Element and City of Lemon Grove Zoning Map.
[29] National City, Land Use Code, Title 18 Zoning Ordinance
[30] County of San Diego County General Plan Land Use Map
[31] City of San Diego General Plan, Land Use and Community Planning Element, Figure LU-2; City of La Mesa General Plan, Land Use and Urban Design Element; City of Lemon Grove General Plan, Community Development Element and City of Lemon Grove Zoning Map; National City, Land Use Code, Title 18 Zoning Ordinance; and County of San Diego County General Plan Land Use Map.
[32] Ibid.

	Potentially Significant Impact	Less Than Significant with Mitigation	Less Than Significant Impact	No Impact
III. AIR QUALITY: Where available, the significance criteria established by the applicable air quality management or air pollution control district may be relied upon to make the following determinations. Would the project:				
a) Conflict with or obstruct implementation of the applicable air quality plan?	☐	☐	☐	☒
b) Violate any air quality standard or contribute substantially to an existing or projected air quality violation?	☒	☐	☐	☐
c) Result in a cumulatively considerable net increase of any criteria pollutant for which the project region is non- attainment under an applicable federal or state ambient air quality standard (including releasing emissions which exceed quantitative thresholds for ozone precursors)?	☐	☐	☒	☐
d) Expose sensitive receptors to substantial pollutant concentrations?	☐	☐	☒	☐
e) Create objectionable odors affecting a substantial number of people?	☐	☐	☒	☐

Discussion:

a) The County of San Diego Air Pollution Control District (San Diego APCD) develops plans that include the San Diego Regional Air Quality Strategy (RAQS), addressing State requirements, and the San Diego portion of the California Air Resources Board State Implementation Plan (SIP), addressing federal requirements. The RAQS is based on local General Plans including the City of San Diego and National City General Plans. Constituents of concern within these plans are ozone, carbon monoxide, nitrogen dioxide, sulfur dioxide and particulate matter. The project does not obstruct implementation of the RAQS, there is no impact.

b) Potential implementation projects resulting from this Basin Plan amendment include short-term projects that would not cause any significant changes in population or employment or generate significant ongoing traffic-related emissions. Potential implementation projects would also not involve the construction of any permanent emissions sources. For these reasons, no permanent change in air emissions would occur that would cause a significant change in air quality over the long-term.

Potential implementation projects that include minor construction, earthmoving, dredging, or capping activities would result in temporary production of emissions. Regulated air quality pollutants that are in emissions from minor construction include carbon monoxide, ozone, nitrogen dioxide, sulfur dioxide, and particulates.

Currently the County is not in compliance with the State's ozone and particulate matter standards.[33] The San Diego APCD has established trigger levels[34] for screening projects to determine if an Air Quality Impact Assessment (AQIA) is needed. These trigger levels are used as screening criteria for potential impact significance.

In particular, dredging operations may result in short-term production of emissions that could exceed the daily threshold for NO_x, a precursor to ozone formation (LSA Associates, Inc. 2011, Appendix G). While the extent of dredging activities cannot be determined at this time, the extent of dredging is very likely to be less extensive than dredging operations for the Shipyard Sediment Remediation Project because the creek mouth areas are smaller in size. The Air Quality Analysis for the Shipyard Sediment Remediation Project estimated that dredging and staging of the dredged materials had the potential to exceed the San Diego Emissions threshold of 250 pounds per day. Compliance with the San Diego APCD Rules and additional practices, such as properly maintaining equipment, turning off equipment promptly when not in use, utilizing alternate fuel construction equipment (i.e., compressed natural gas, liquid petroleum gas, and unleaded gasoline), or utilizing low NO_x diesel fuel, can be used to effectively minimize short-term air pollutant emissions. Utilization of the San Diego APCD rules and other minimization practices would reduce the generation of NO_x to less than the threshold of significance.

Fine particulate matter less than 10 micrometer in diameter (PM_{10}) is also a pollutant of concern with respect to construction. PM_{10} emissions can result from a variety of construction activities, including excavation, grading, demolition, vehicle travel, and vehicle and equipment exhaust. Given the limited duration and scale of reasonably foreseeable construction activities associated with potential implementation projects, PM_{10} standards would not be "substantially" violated, if at all. Additionally, all potential implementation projects are required by law to comply with the San Diego APCD construction requirements. The San Diego APCD requirements include requiring activities to be timed so as not to interfere with peak-hour traffic and to minimize obstruction of through traffic lanes, limit on-site vehicle speeds to 15 miles per hour, watering work areas to prevent airborne dust, avoiding earthmoving activities during periods of high winds, and ensuring that material transported off-site is sufficiently wet or securely covered to prevent dust generation during transport. In complying with the San Diego APCD requirements, use of these standard practices would reduce emissions.

Minor long-term increases in traffic caused by non-structural BMPs (such as street sweeping) and maintenance of structural BMPs are potential sources of incrementally increased ozone and particulate matter. Street sweeping is already conducted in the

[33] Shipyard Sediment Project Air Quality Analysis (LSA Associates, Inc. 2011, Appendix G). However, the CA Air Resources Board adopted a San Diego County Maintenance Plan for Ozone on December 6, 2012, which is pending U.S. EPA approval. If approved by the U.S. EPA, the status of San Diego County could be redesignated as in attainment with the federal 1997 8-hour standard for ozone.
[34] Regulation II, Rule 20.2 Table 20-1-1 "AQIA Trigger Levels."

Cities of San Diego[35] and National City[36] on established schedules ranging from daily to every other month by road segment. Therefore, increased street sweeping and other vehicle trips associated with potential implementation projects is considered to be limited and not likely to cause a significant long-term increase in emissions. Practices are available to reduce potential impacts to ambient air quality due to increased traffic including use of construction, maintenance, and street sweeper vehicles with lower-emission engines, use of soot reduction traps or diesel particulate filters, use of emulsified diesel fuel, use of vacuum-assisted street sweepers to eliminate potential re-suspension of sediments during sweeping activity, design of structural devices to minimize the frequency of maintenance trips, and proper maintenance of vehicles so they operate cleanly and efficiently. Increases in traffic over existing levels is anticipated to be limited and practices are available that will minimize impacts from any increases in traffic, therefore long-term increases in emission associated with increased traffic is considered less than significant.

Implementation projects may generate short-term emissions during construction of structural BMPs, dredging, and implementation of non-structural BMPs. Any additional emissions of particulate matter or mono-nitrogen oxides (NO_x), a precursor to ozone, would impact the ability to meet the ozone standards.

Therefore, in consideration of all of the foregoing, short-term impacts from implementation projects resulting from this Basin Plan amendment may potentially result in violation of air quality standards or contribute substantially to an air quality violation. Temporary construction-related air quality impacts during dredging operations may be potentially significant unless mitigation is incorporated. However, there are mitigation measures available to reduce potentially significant environmental impacts to less than significant levels. Implementation of these mitigation measures are within the jurisdiction of the responsible parties.[37] These parties have the ability to implement these mitigation measures, can and should implement these mitigation measures, and are required under CEQA to implement mitigation measures unless mitigation measures are deemed infeasible through specific considerations.[38]

c) The cumulative study area for air quality impacts is the San Diego Air Basin (SDAB) including all of San Diego County. Potential implementation projects will result in the temporary production of emissions, including NO_x. As a precursor to ozone, the produced NO_x will contribute to the existing nonattainment status for ozone in the SDAB during the construction activity, but will cease with the completion of the activity. Therefore, the temporary emissions generated by the implementation projects in conjunction with other possible projects (see section H5.1) will not cause a considerable net increase of NO_x and will be less than significant.

[35] http://www.sandiego.gov/stormwater/services/streetsweeping.shtml
[36] http://www.ci.national-city.ca.us/index.aspx?page=229
[37] 14 CCR section 15091(a)(2)
[38] 14 CCR section 15091(a)(3)

d) The pollutant most likely to impact sensitive populations is carbon monoxide (CO). Under certain extreme meteorological conditions, CO concentrations near a congested road or intersection may reach unhealthy levels that could impact sensitive receptors, such as residents, schoolchildren, the elderly, or hospital patients. Because the Basin Plan amendment would not involve the construction of any permanent emissions sources but rather involves short-term and discrete construction activities, impact to sensitive receptors are expected to be minimal. While the exact quantity of temporary CO emissions resulting from potential implementation projects cannot be estimated at this time, the emissions are anticipated to be less than the AQIA triggers and are considered less than significant. As temporary emissions of CO are less than significant and no permanent increases in CO contributions would occur, potential implementation projects would not expose sensitive receptors to substantial pollutant concentrations and a less than significant air quality impact would result.

e) Vehicle exhaust from construction equipment used during construction of potential implementation projects, including BMP installations and dredging/capping activities, could potentially create objectionable odors in the vicinity of construction activities. However, these odors would be limited to the time of equipment operation and duration of the project. Impacts from BMP installation projects would be short-term and small in scale, and therefore, would be less than significant. Additionally, the responsible parties implementing projects to comply with this Basin Plan amendment will be subject to discretionary review for required permitting and project specific environmental review.

In the certified Program EIR for the adjacent Shipyard Sediment Remediation Project, LSA Associates, Inc. (2011) identified that dredging activities have the potential to produce temporary odors during dewatering of dredge material at staging locations. While the dredge material is drying, the decomposition of organic matter as it is exposed to air may generate unpleasant odors, potentially impacting sensitive receptors within the vicinity. However, determining the level of impact is speculative as the locations of potential staging areas and sensitive receptors are unknown and cannot be evaluated at this time. Additionally, project-specific environmental analysis will be required for proposed sediment remediation projects needed to comply with this Basin Plan amendment, which can assess the level of impact and the need for mitigating significant impacts, if any.

The Basin Plan amendment would not involve the construction of any permanent sources of odor and therefore would not create objectionable odors affecting a substantial number of people. Therefore, odor impacts resulting from the Basin Plan amendment would be less than significant.

	Potentially Significant Impact	Less Than Significant with Mitigation	Less Than Significant Impact	No Impact
IV. BIOLOGICAL RESOURCES: Would the project:				
a) Have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special status species in local or regional plans, policies, or regulations, or by the California Department of Fish and Game or U.S. Fish and Wildlife Service?	☒	☐	☐	☐
b) Have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, and regulations or by the California Department of Fish and Game or US Fish and Wildlife Service?	☒	☐	☐	☐
c) Have a substantial adverse effect on federally protected wetlands as defined by Section 404 of the Clean Water Act (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means?	☐	☐	☐	☒
d) Interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites?	☐	☐	☒	☐
e) Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance?	☐	☐	☐	☒
f) Conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan?	☐	☐	☐	☒

Discussion:

a) In San Diego County, the Multiple Species Conservation Program (MSCP) Plan is the comprehensive, long-term habitat conservation plan that addresses the needs of multiple covered species and the preservation of natural vegetation communities. The MSCP addresses the potential impacts of urban growth, natural habitat loss, and species endangerment; and includes a plan to mitigate for the potential loss of the multiple covered species and their habitat due to the direct impacts of future development of both public and private lands within the MSCP area (City of San Diego, 1997). The MSCP identifies covered and special status species in the small canyon systems of the upper watersheds. Additionally, San Diego Bay provides both terrestrial and marine habitat for several special status species.

The Basin Plan amendment was developed specifically to benefit, enhance, restore and protect biological resources, including fish, wildlife, rare, threatened, and endangered species, and habitat. Nonetheless, potential projects proposed by responsible parties to comply with the Basin Plan amendment may result in direct or indirect impacts to

biological resources. As an example, levels of noise, turbidity, and turbidity-associated toxicant concentrations in water column may temporarily increase as a result of the potential sediment dredging projects. These increases may lead to temporary disturbance of foraging areas of special status birds and marine animals and cause potentially adverse impacts in the vicinity of the three creek mouth areas. For example, removal of benthic invertebrates contained in the subtidal soft bottom of the three creek mouth areas during dredging operations has the potential to temporarily affect the foraging habitat for the federally endangered East Pacific green sea turtle until the populations of benthic invertebrates could be recolonized (Lemons et al. 2011). The impacts would be temporary in nature.

For the purposes of this analysis, it is assumed that impacts to biological resources may occur with future actions. Environmental analyses would be required for any discretionary actions needed to comply with this Basin Plan amendment. Such proposals would require identification of project-specific mitigation measures, such as design features and scheduling considerations, at that time, which are consistent with MSCP subarea plans, the City of San Diego's Biology Guidelines and Environmentally Sensitive Lands Regulations, and U.S. Navy's environmental planning requirements under National Environmental Protection Act (City of La Mesa 1998; City of San Diego 1997 and 2009; U.S. Navy 2007).[39]

Additionally, some proposed projects that could affect sensitive species would be subject to review and approval by the San Diego Water Board. The San Diego Water Board, in the course of carrying out its statutory duties to protect water quality and beneficial uses, which includes preservation of habitat for rare, threatened, and endangered species, aquatic life, and wildlife, as set forth in the Basin Plan, will either not approve compliance projects with significant adverse impacts on special status species and habitats or will require avoidance or mitigation measures to reduce impacts to less than significant levels. It is not reasonably foreseeable that the San Diego Water Board would approve earthmoving work that would disrupt or destroy habitat of a known special status species. Furthermore, it is the San Diego Water Board's standard practice to work with the proponents of compliance projects to come up with actions that not only meet and further the proposed Basin Plan amendment's requirements and goals, but also all other components of the Basin Plan, such as protection of rare and endangered species and habitat. For example, where avoidance of impacts is not possible, the San Diego Water Board requires mitigation measures for work it approves that may impact special status species, riparian habitats, or other sensitive natural communities. These include but are not limited to requiring pre-construction surveys; construction buffers and setbacks; restrictions on construction during sensitive periods of time; employment of on-site biologists to oversee work; avoidance of construction in known sensitive habitat areas or relocation and restoration of sensitive habitats; and deployment of silt curtains around dredging operations to reduce turbidity and protect animals from harm.

[39] San Diego Municipal Code, Chapter 14, Article 3, Division 1 Environmentally Sensitive Lands Regulations

In sum, through the course of the San Diego Water Board discharging its mandate to protect beneficial uses, including protection of habitats that support rare, threatened, and endangered species, preserve or enhance freshwater, estuarine, and marine ecosystems, preserve or enhance wildlife habitat, and preservation of biological habitats of special concern (i.e., San Diego Bay), impacts to special status species and their habitats would be avoided or mitigated to less than significant levels.

If, however, impacts to the special status species and their habitats occur outside the San Diego Water Board's jurisdiction (e.g., in areas with no proximity or relation to waters of the state), then impacts must be addressed through other local, state, and federal regulatory programs. For example, for projects that fill CWA section 404 wetlands, the Army Corps of Engineers explicitly conditions its permits to require that impacts to federally listed species be less than significant. State and federal laws prohibit the take of special status species and their habitats except where incidental take permits have been issued. When issuing incidental take permits, state and federal agencies must ensure that the impacts of the take are minimized and mitigated to the maximum extent possible and ensure that the take will not appreciably reduce the likelihood of the survival and recovery of the species.

Additionally, in accordance with the Endangered Species Act, an informal section 7 consultation with U.S. FWS and NMFS could be implemented to determine what effect the proposed project will have on the California least tern, explore means to modify the proposed project to reduce or remove adverse effects to the California least tern, determine the need to enter into formal section 7 consultation, and explore the design or modification of the proposed project plans to benefit the California least tern. Based on the results of the informal consultation with U.S. FWS/NMFS, either concurrence that the project will not adversely affect the California least tern will be received or formal consultation will be required if concurrence is not received. If formal consultation is requested by U.S. FWS/NMFS, a biological assessment will be required to be submitted documenting the presence of the California least tern near the proposed project area and a description of the effects of the proposed project. U.S. FWS and NMFS will formulate a Biological Opinion and Incidental Take Statement and conclude the formal consultation.

Considering the above information, impacts, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special status species in local or regional plans, policies, or regulations, or by DFW or U.S. FWS will be potentially significant; however, mitigation measures exist which will reduce such impacts. Implementation of these mitigation measures are within the jurisdiction of the responsible parties.[40] These parties have the ability to implement these mitigation measures, can and should implement these mitigation measures, and are required

[40] 14 CCR section 15091(a)(2)

under CEQA to implement mitigation measures unless mitigation measures are deemed infeasible through specific considerations.[41]

b) Potential implementation projects resulting from this Basin Plan amendment that involve the installation and implementation of BMPs are not expected to lead to a loss of habitat or be of sufficient size to create any additional, substantial barriers in the already fractured wildlife corridors. While installation and implementation of BMPs is not expected to adversely affect riparian habitat or other sensitive natural communities directly, changes in dry-weather flow may potentially result in adverse impacts to habitat. Project-level environmental analyses would be required for any discretionary actions needed to comply with this Basin Plan amendment. Such proposals would require identification of project-specific mitigation measures at that time.

Projects proposed to comply with the Basin Plan amendment involving grading or construction in a riparian corridor are subject to review and approval by the San Diego Water Board. As described in section a) above, the San Diego Water Board, in the course of discharging its statutory duties to protect water quality and their beneficial uses will either not approve compliance projects with significant adverse impacts on riparian habitats and sensitive natural communities, or would require mitigation measures to reduce impacts to less than significant levels. Furthermore, it is the San Diego Water Board's standard practice to work with DFW, U.S. FWS, and proponents of compliance projects to come up with actions that not only meet and further the project objective, but also have minimal impacts. Mitigation measures routinely required by the San Diego Water Board include (but are not limited to) requiring pre-construction surveys; construction buffers and setbacks; restrictions on construction during sensitive periods of time; employment of on-site biologists to oversee work; and avoidance of construction in known sensitive habitat areas or relocation and restoration of sensitive habitats, but only if avoidance is impossible.

However, if impacts to sensitive natural communities occur outside the San Diego Water Board's jurisdiction, such as in upland communities, then impacts will be addressed by other local, state, and federal regulatory programs, as described in section a), above.

c) The tidally influenced portions of both Chollas and Paleta creeks are considered wetlands, as defined by CWA section 404. Potential implementation projects that include minor construction and earthmoving would not occur within the channels themselves, but within and/or along the conveyance system that discharges to them. Therefore, there would be no impact from BMP installation activities to wetlands as a result of direct removal, filling, or hydrological interruption.

The dredging and capping projects would occur in the Bay. Sediment remediation of the tidally influenced portions of these creeks is speculative at this time and is not being considered.

[41] 14 CCR section 15091(a)(3)

d) San Diego Bay provides habitat for resident and migratory birds, including waterfowl and seabirds, marine fish and mammals, and sea turtles. To the extent that the small canyon systems and urban and industrial landscapes provide roosting, nesting, and/or foraging opportunities for wildlife in these watersheds and creek mouths, it is possible that the noise and human activity of minor construction, earthmoving, dredging, and capping activities and prey base disruption from dredging operations could disturb wildlife.

Due to the intensity of urban development and land use in these watersheds, it is reasonable to assume that any birds nesting in the vicinity would be accustomed to various urban, industrial, maritime, and/or shipyard-related activities. Increased noise and human disturbance resulting from potential implementation projects would likely have the effect of avoidance of project-related activities that are in progress. Other foraging sites are available within San Diego Bay. Potential projects are relatively small in scale as compared to the larger watersheds and greater San Diego Bay and impacts are expected to be short-term.

Noise generated from potential dredging operations has the potential to disturb marine mammals, if present during such activities, which may cause them to modify their behavior and could be considered harassment under the Marine Mammal Protection Act. The Port of Los Angeles Channel Deepening Project EIR/EIS found that underwater noise from the clamshell dredging associated with that project would be below the NMFS-designated harassment threshold for pinnipeds (LSA Associates, Inc. 2011). This would imply that clamshell and dredging effects for marine mammals near the project sites in San Diego Bay would also be less than significant.

There should be no long-term reductions in the amount of benthic soft bottom habitat or populations of benthic invertebrates within these creek mouth areas as a consequence of dredging and capping activities. These areas are typical of other bay environments in Southern California, which are dominated by species adapted to constant environmental stresses. Benthic communities at dredged sites have been found to begin recolonization within the first couple of months and to re-establish sediment structure and benthic communities similar to undisturbed areas or pre-dredge conditions within 6 months to a year (Guerra-Garcia et al. 2003; Ceia et al. 2011). It is likely that the sediments will be coarser and, because of the dredging, the sediment will contain a lower concentration of contaminants, which will enhance the benthic community. Therefore, disturbance in the prey base for benthic foraging species and other impacts related to benthic communities are anticipated to be less than significant.

These projects, located on the periphery of San Diego Bay, are not anticipated to curtail the movement of species past the site or throughout the Bay. Therefore, potential implementation projects are not expected to substantially interfere with the movement of any native resident or migratory fish or wildlife species, with established native resident

or migratory wildlife corridors, or impacts to use of native wildlife nursery sites. The impacts will be less than significant.

e) The Basin Plan amendment itself does not conflict with any local policies or ordinances protecting biological resources. Therefore, no impacts will occur.

f) The Basin Plan amendment will not conflict with any habitat conservation plan or natural community conservation plan. The MSCP Plan and associated subarea plans for the Cities of San Diego and La Mesa are the primary conservation plans that apply in these three watersheds (City of San Diego 1997; City of San Diego 1998; City of La Mesa 1998). The MSCP addresses the potential impacts of urban growth, natural habitat loss, and species endangerment; and includes a plan to mitigate for the potential loss of the multiple covered species and their habitat due to the direct impacts of future development of both public and private lands within the MSCP area (City of San Diego, 1997).

The Basin Plan amendment itself does not conflict with any adopted Habitat Conservation Plan, Natural Community Plan, or other approved local, regional or state habitat conservation plan. No impacts will occur.

	Potentially Significant Impact	Less Than Significant with Mitigation	Less Than Significant Impact	No Impact
V. CULTURAL RESOURCES: Would the project:				
a) Cause a substantial adverse change in the significance of a historical resource as defined in §15064.5?	☒	☐	☐	☐
b) Cause a substantial adverse change in the significance of an archaeological resource pursuant to §15064.5?	☒	☐	☐	☐
c) Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature?	☒	☐	☐	☐
d) Disturb any human remains, including those interred outside of formal cemeteries?	☐	☐	☐	☒

Discussion:

a) Archaeological and historical resources, known collectively as cultural resources, are the tangible or intangible remains left by ancestral peoples who inhabited the San Diego region (County of San Diego 2007c). Cultural resources, which include but are not limited to sites listed or eligible for listing in the California or local register of historical resources, are found throughout the County of San Diego (the County). As of September 2006, more than 23,000 sites were recorded in the County (County of San Diego 2007c). Many sites of cultural significance exist within the watershed areas of

Paleta, Chollas, and Switzer Creeks. Some examples include: significant Native American habitation sites have been identified in the Chollas Canyon (Sunshine Beradini Park, Chollas Police Campus, and along the Auburn Creek); the former Chollas Coach trail along Federal Blvd., an early transportation route to the city of San Diego; and Balboa park's El Prado, the first site designated (in 1967) as a historical resource by the City of San Diego, which is located near the upper watershed of Switzer Creek.

According to Robbins-Wade (2011), the potential for encountering cultural resources at many sections along the channels of Chollas Creek is estimated to be "high" for the storm water maintenance activities that would occur at those sections. Buried historic material may be expected in areas of Chollas Valley (Robbins-Wade 2011). Similarly, potential implementation projects that include structural BMP installations that occur in the vicinity (e.g., within 300 feet) of the channels of Chollas Creek may take place on or close to sites of cultural importance and have the potential to cause negative impacts on the integrity of these sites. However, the exact level of impact on the cultural resources from these BMP installation projects cannot be estimated at this time since the locations and activity details of the projects are not known. Project-level impact analysis will be required to be performed at a future time, and applicable mitigation measures would be identified and required at that time. State and local regulations currently require protection of archeological and historical resources from damage. Examples of these regulations are introduced as follows:

- California Public Resources Code section 21083.2 requires that if a project will cause damage to a unique archaeological resource, the lead agency for the project level environmental review may require reasonable efforts to be made to permit any or all of these resources to be preserved in place or left in an undisturbed state. Examples of that treatment, in no order of preference, may include, but are not limited to, any of the following: 1) planning construction to avoid archaeological sites, 2) deeding archaeological sites into permanent conservation easements, 3) capping or covering archaeological sites with a layer of soil before building on the sites, and/or 4) planning parks, green space, or other open space to incorporate archaeological sites.

- The San Diego County's Resource Protection Ordinance (RPO) requires that resources be evaluated with a Resource Protection Study and a finding that the use or development permitted by the application is consistent with the provisions of the RPO prior to approval of any of the following types of discretionary applications, which are not limited to: tentative maps, revised tentative maps, rezones, major use permit modifications, certificates of compliance, site plans, administrative permits, vacations of open space easements. The RPO prohibits development, trenching, grading, clearing, and grubbing, or any other activity or use that may result in damage to significant prehistoric or historic site lands,

except for scientific investigations with an approved research design prepared by an archaeologist certified by the Society of Professional Archaeologists.[42]

- Projects occurring within the City of San Diego are subject to the City of San Diego's Historical Resources Regulations,[43] which are intended to assure that development occurs in a manner that protects the overall quality of historical resources. Further, it is the intent of these regulations to protect the educational, cultural, economic, and general welfare of the public, while employing regulations that are consistent with sound historical preservation principles and the rights of private property owners.[44]

Additionally, the cities' and county's General Plans contain policies that protect historic resources including the Conservation Element of the San Diego County General Plan, the Historical Preservation Element of the City of San Diego's General Plan, the Conservation and Recreation Element of the City of Lemon Grove's General Plan, the Cultural and Paleontological Resources Section of the Open Space and Agriculture Element of the National City's General Plan, and the Historical Preservation Chapter (Chapter 25) of the City of La Mesa 's Municipal Code. Furthermore, California Public Resources Code section 5024.5 requires that all state agencies consult with the Office of Historic Preservation when any proposed project may adversely affect any historical resources on state-owned property (including state parks), and section 5024 requires that all state agencies inventory, register, preserve, and maintain all historical resources within their jurisdiction.

Based on above information, BMP installation projects and implementation would have a potentially significant impact on historic resources; however, significant regulatory framework exists that will ensure that mitigation measures will reduce impacts to less than significant levels when incorporated. Implementation of these mitigation measures is within the jurisdiction of the local regulatory agencies listed in this document (Section H2.4.3).[45] These agencies have the ability to implement these mitigation measures, can and should implement these mitigation measures and are required under CEQA to implement mitigation measures unless mitigation measures are deemed infeasible through specific considerations.[46]

Potential implementation projects that include dredging and capping of contaminated sediments would occur within the San Diego Bay. These projects would not entail grading undisturbed areas. The areas subject to sediment remediation consist of recently deposited material and undisturbed subtidal material below the depth that would be expected to include cultural resources. Therefore, dredging and capping

[42] San Diego County Code, Resource Protection Ordinance, Title 8, sections 86.601-86.608
[43] City of San Diego Municipal Code, Chapter 14, Article 3, Division 2 Historical Resources Regulations
[44] City of San Diego General Plan, Historic Preservation Element
[45] 14 CCR section 15091(a)(2)
[46] 14 CCR section 15091(a)(3)

projects that would result from this Basin Plan amendment would have no impact on historical or archaeological resources pursuant to Section 15064.5.

b) BMP installation projects and implementation would also have a potentially significant impact on archaeological resources for the same reasons discussed in a); however, significant regulatory framework exists that will ensure that mitigation measures will reduce impacts to less than significant levels when incorporated, see discussion in a). Implementation of these mitigation measures is within the jurisdiction of the local regulatory agencies listed in this document (Section H2.4.3).[47] These agencies have the ability to implement these mitigation measures, can and should implement these mitigation measures and are required under CEQA to implement mitigation measures unless mitigation measures are deemed infeasible through specific considerations.[48]

c) The watershed areas of Paleta, Chollas, and Switzer Creeks are located within the Coastal Plain Region of the Peninsular Ranges Province. Many sedimentary rock units containing paleontological resources are contained within these watershed areas, including Unnamed Quaternary River Terrace deposits, marine terrace deposits of the Bay Point Formation and the Lindavista Formation, and marine deposits of the San Diego Formation. As a result, the paleontological resource sensitivity ratings for these geologic units have been designated as “high” (City of San Diego 2008, Chapter 3.11). In general, formations with high resource potential are considered to have the highest potential to produce unique invertebrate fossil assemblages or unique vertebrate fossil remains and are, therefore, highly sensitive.

Most areas in the Paleta, Chollas, and Switzer Creeks watersheds are almost entirely developed. At some places in these watershed areas, the underlying bedrocks are closer to ground surface due to historical grading activities. Potential projects of structural BMP installation that may result from this Basin Plan amendment involve minor construction and earthmoving work. Although of small-scale, these BMP construction projects have the potential to encounter and impact paleontological resources if these projects are carried out in areas where paleontological resource sensitive geologic units are close to the surface (e.g., within the flood plain of the Chollas Creek where a number of paleontological sites have previously been identified). The level of impact on the paleontological resources cannot be determined at this time since the locations and activity details of the projects are unknown. Project-specific environmental analyses will be required for future projects needed to comply with this Basin Plan amendment, which will assess the level of impact and the need for mitigating significant impacts, if any.

Any project that is implemented will have to comply with local regulations and standards, such as the County of San Diego Grading Ordinance and the Conservation Element of the San Diego County General Plan. The Grading Ordinance provides for the requirement that a paleontological monitor be present at the discretion of the

[47] 14 CCR section 15091(a)(2)
[48] 14 CCR section 15091(a)(3)

County.[49] In addition, the suspension of grading operation is required upon the discovery of fossils greater than twelve inches in any dimension. The ordinance also requires notification of the County Official (e.g. Permit Compliance Coordinator). The ordinance gives the County Official the authority to determine the appropriate resource recovery operations, which the permittee shall carry out prior to the County Official's authorization to resume normal grading operations.

For projects occurring within the City of San Diego, resources are identified and protected through the environmental review process for discretionary projects. Through the City of San Diego's environmental process and prior to issuance of a Notice to Proceed (NTP) for any construction permits, including but not limited to, the first Grading Permit, Demolition Plans/Permits and Building Plans/Permits, the environmental review manager environmental designee must verify that the requirements for paleontological monitoring are noted on the appropriate construction documents.

Based on above information, BMP installation projects that include minor construction and earthmoving have the potential to impact paleontological resources; however, significant regulatory framework exists that will ensure that mitigation measures will reduce impacts to less than significant levels when incorporated. Implementation of these mitigation measures is within the jurisdiction of the local regulatory agencies listed in this document (Section H2.4.3).[50] These agencies have the ability to implement these mitigation measures, can and should implement these mitigation measures and are required under CEQA to implement mitigation measures unless mitigation measures are deemed infeasible through specific considerations. [51]

Potential implementation projects of sediment dredging and capping that would occur within the San Diego Bay are not expected to cause significant adverse impacts to the underlying paleontological resources. Any contaminated sediments that need to be removed in those dredging projects were deposited along the bay floor quite recently (approximately the past 80 years maximum), and are highly unlikely to contain paleontological resources.

d) Potential implementation projects involving dredging and capping contaminated sediments that result from this Basin Plan amendment would occur within the San Diego Bay. No evidence in the historical record indicates that human remains would be buried at the areas to be dredged, which consist of recently deposited material and undisturbed subtidal material below the depth that would include cultural resources. It is highly unlikely that human remains would be encountered during implementation of these dredging and capping projects and there would be no impact.

[49] County of San Diego Grading Ordinance, Title 8, Division 7, section 87.430.
[50] 14 CCR section 15091(a)(2)
[51] 14 CCR section 15091(a)(3)

Potential implementation projects of BMP installation would be small in scale, and earthmoving activities would likely occur in areas already disturbed by recent human activities (i.e., existing roads, and housing and industrial developments) – not at or in areas where human remains might exist, such as the Mt. Hope Cemetery. Additionally, no human remains of Native Americans have been reportedly found in these watershed areas, including the Chollas Valley where Kumeyaay Indians and their ancestors once settled.

Considering the above information, any reasonably foreseeable proposed projects that would occur as a result of the Basin Plan amendment would not adversely affect human remains.

	Potentially Significant Impact	Less Than Significant with Mitigation	Less Than Significant Impact	No Impact
VI. GEOLOGY AND SOILS: Would the project:				
a) Expose people or structures to potential substantial adverse effects, including the risk of loss, injury, or death involving:	☐	☐	☒	☐
i) Rupture of a known earthquake fault, as delineated on the most recent Alquist-Priolo Earthquake Fault Zoning Map issued by the State Geologist for the area or based on other substantial evidence of a known fault? Refer to Division of Mines and Geology Special Publication 42?	☐	☐	☒	☐
ii) Strong seismic ground shaking?	☐	☐	☒	☐
iii) Seismic-related ground failure, including liquefaction?	☐	☐	☒	☐
iv) Landslides?	☐	☐	☒	☐
b) Result in substantial soil erosion or the loss of topsoil?	☐	☐	☒	☐
c) Be located on a geologic unit or soil that is unstable, or that would become unstable as a result of the project, and potentially result in on- or off-site landslide, lateral spreading, subsidence, liquefaction or collapse?	☐	☐	☒	☐
d) Be located on expansive soil, as defined in Table 18-1-B of the Uniform Building Code (1994), creating substantial risks to life or property?	☐	☐	☐	☒
e) Have soils incapable of adequately supporting the use of septic tanks or alternative waste water disposal systems where sewers are not available for the disposal of waste water?	☐	☐	☐	☒

Discussion:

a) According to the Point Loma Quadrangle Map delineated in compliance with the Alquist-Priolo Earthquake Fault Zoning Act, an active fault extends from the southern

end of Balboa Park toward the Coronado Bridge just west of interstate 5 (DOC 2003). The Rose Canyon fault zone is an active offshore/onshore fault capable of generating an earthquake of magnitude 6.2 to 7.0 on the Richter scale. The fault zone lies partially offshore as part of the Newport/Inglewood fault zone and parallels the San Diego north county coastline within approximately two to six miles until coming ashore near La Jolla Shores. The onshore segment trends through Rose Canyon, through Old Town San Diego, and appears to die out in San Diego Bay (City of San Diego 2008, Chapter 3.4). Evidence of faulting in San Diego Bay is thought to be associated with this fault (County of San Diego 1991). The fault zone is composed of a number of fault segments, including the Rose Canyon, Mount Soledad, and Country Club faults. Hazards associated with seismic activity in the City of San Diego include groundshaking, ground displacement, seismically induced settlement/subsidence, liquefaction, soil lurching, tsunamis, and seiches. In addition, portions of the project area are susceptible to landslides due to factors including steep slopes greater than 25 percent or potential for soil slip (County of San Diego 2007b, Figure 5).

While geologic hazards exist in the project area, a project is considered to have a significant impact if it involves the construction of habitable structures within the project area or could pose an adverse risk to people or existing structures if the project were to fail. Potential implementation projects resulting from this Basin Plan amendment would not involve the construction of habitable structures. Local grading ordinances include requirements which would minimize the likelihood that any potential mitigation projects would pose adverse risk to people or existing structures during construction or if destroyed:

> *San Diego County Grading Ordinance* Chapter 4 includes requirements for the maximum slope allowed for cut and fill slopes, the requirement for drainage terraces on cut or fill slopes exceeding 40 feet in height, expansive soil requirements for cuts and fills, minimum setback requirements for buildings from cut or fill slopes, and reporting requirements including a soil engineer's report and a final engineering geology report by an engineering geologist, which includes specific approval of the grading as affected by geological factors.[52]
>
> *Grading Ordinances* for Cities of La Mesa, Lemon Grove, San Diego, and National City include requirements of the maximum slope allowed for cut and fill slopes to minimize erosion and landslide risk.[53]

Therefore, although there are geologic hazards within the project area, the project will not result in construction of habitable structures or pose significant increased risk of damage to existing structures.

[52] San Diego County Code of Regulatory Ordinances, Title 8, Division 7, Section 87.101

[53] La Mesa Municipal Code, Title 14, Section 14.05.010; Lemon Grove Municipal Code, Title 18, Section 18.08.010; San Diego Municipal Code, Chapter 14, Article 2, Division 1, Section 142.0101; National City Municipal Code, Title 15, Section 15.70.005

b) Specific projects involving earthmoving or construction activities to comply with requirements of the Basin Plan amendment are reasonably foreseeable. Such activities would not result in substantial soil erosion or the loss of topsoil. To meet the proposed Basin Plan amendment targets, construction of BMPs must be designed to reduce overall soil erosion. However, temporary earthmoving operations could result in short-term, limited erosion. Construction of these facilities affecting an area of one acre or more would require a general construction NPDES permit from the State Water Board, and implementation of a storm water pollution prevention plan to control sediment erosion and runoff. These projects will be subject to the review and inspection by the San Diego Water Board, and will require implementation of routine and standard erosion control best management practices and proper construction site management. Other smaller grading projects would be subject to non-discretionary requirements of the County grading ordinance, which would reduce potential impacts from grading. Therefore, the Basin Plan amendment would not result in substantial soil erosion, and its impacts would be less-than-significant.

c) Because the Basin Plan includes actions to stabilize existing sources of sediment, such as landslides, eroding gullies, and roads, some construction could occur in these unstable areas. The Basin Plan amendment could result in projects near roads, creek crossings, and other features located on steep slopes or unstable terrain. These projects would be designed to increase stability, both onsite and off-site, to reduce erosion and sedimentation. Grading for specific TMDL implementation projects would be designed to minimize any potential for landslides, lateral spreading, subsidence, liquefaction, or collapse and would be subject to the non-discretionary requirements of the Cities' and County's grading ordinances. Therefore, the Basin Plan amendment would not involve activities that would create or trigger landsliding, lateral spreading, subsidence, liquefaction or collapse, and its impacts would be less than significant.

d) The Basin Plan amendment would not involve construction of buildings (as defined in the Uniform Building Code) or any habitable structures. Minor grading and construction could occur in areas with expansive soils but this activity would not create a substantial risk to life or property. Therefore, the Basin Plan amendment would not result in impacts related to expansive soils.

e) The Basin Plan amendment would not require wastewater disposal systems; therefore, affected soils need not be capable of supporting the use of septic tanks or alternative wastewater disposal systems. No impacts from septic tanks or alternative wastewater disposal systems would result from the project.

	Potentially Significant Impact	Less Than Significant with Mitigation	Less Than Significant Impact	No Impact
VII. GREENHOUSE GAS EMISSIONS: Would the project:				
a) Generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment?	☐	☐	☒	☐
b) Conflict with an applicable plan, policy or regulation adopted for the purpose of reducing the emissions of greenhouse gases?	☐	☐	☐	☒

Discussion:

a) Potential implementation projects will result in short-term emissions associated with the use of construction and dredging equipment. There will be no ongoing increase in contribution to global warming because there are no permanent on-site stationary sources, and no ongoing increase in the number of vehicular trips coming to and from the implementation project sites. Therefore, the proposed project's contribution to global climate change in the form of greenhouse gas emissions is less than significant.

b) The Global Warming Solutions Act of 2006 (AB 32) set targets for greenhouse gas emissions in California for the year 2020. In December 2007 the California Air Resources Board approved the 2020 emission limit of 427 million metric tons of CO_2 equivalents, representing a 39 percent reduction from the State's projected 2020 emissions. The California Climate Action Team (CAT) works to coordinate statewide efforts to implement global warming emission reduction programs and the State's Climate Adaptation Strategy.[54] Biodiversity and Habitat Adaptation Strategy 2(e) calls for restoration of aquatic habitats and associated floodplains (NRA 2009). This adaptation strategy recognizes that climate change may increase sedimentation from flooding events. The potential implementation projects will minimize erosion and sedimentation and minimize the potential negative impacts of more frequent and severe flooding events projected due to climate change.

The City of San Diego Climate Action Plan calls for a reduction of greenhouse gases from transportation, energy, and waste (City of San Diego 2005). The National City Climate Action Plan proposes to reduce greenhouse gas emissions through measures to improve energy efficiency, reduce vehicle miles driven, and increase reuse and recycling (DC&E 2011). The Clean Air Program of the Unified Port of San Diego strives to voluntarily reduce air emissions through the identification and evaluation of feasible and effective control measures for each category of Port operations (ENVIRON 2007). Potential control measures presented in the Port's Clean Air Program Draft Report include reducing idling time of heavy duty vehicles, and replacing and retrofitting vehicles to use efficient technology.

[54] http://resources.ca.gov/climate_adaptation/docs/Statewide_Adaptation_Strategy.pdf

The project would generate vehicle trips and emissions on a temporary basis, but would not conflict with the potential measures to bring California to the emission reduction targets based on California CAT strategies, the City of San Diego Climate Action Plan, the City of National City Draft Climate Action Plan, and the Clean Air Program of the Unified Port of San Diego. Since the proposed project would not conflict with the strategies to reduce California's emissions to greenhouse gas emissions targets proposed by Executive Order S-3-05, no greenhouse gas emissions impact would result.

	Potentially Significant Impact	Less Than Significant with Mitigation	Less Than Significant Impact	No Impact
VIII. HAZARDS AND HAZARDOUS MATERIALS: Would the project:				
a) Create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials?	☐	☒	☐	☐
b) Create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment?	☐	☒	☐	☐
c) Emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school?	☐	☒	☐	☐
d) Be located on a site which is included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5 and, as a result, would it create a significant hazard to the public or the environment?	☐	☐	☐	☒
e) For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project result in a safety hazard for people residing or working in the project area?	☐	☐	☐	☒
f) For a project within the vicinity of a private airstrip, would the project result in a safety hazard for people residing or working in the project area?	☐	☐	☐	☒
g) Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan?	☐	☐	☐	☒
h) Expose people or structures to a significant risk of loss, injury or death involving wildland fires, including where wildlands are adjacent to urbanized areas or where residences are intermixed with wildlands?	☐	☐	☐	☒

Discussion:

a) Potential implementation projects resulting from this Basin Plan amendment that include minor construction and earthmoving activities during installation of structural BMPs will not involve the routine transport, use, or disposal of hazardous materials. Similarly, the implementation of non-structural BMPs does not involve handling of hazardous materials as well. As a result, the installation of structural and non-structural BMPs will have no impacts on the public or the environment with respect to routine transport, use, or disposal of hazardous materials.

Potential dredging and capping activities would involve transport and disposal of excavated and dewatered contaminated sediments. Potential risks associated with sediment transport include accidental spillage of sediment and the airborne release of dust and particles, which may include drying agents that are commonly used in sediment drying processes. The environmental impact of dust emission during sediment transport was evaluated in b) of the Air Quality Section of this Environmental Checklist, above, and found to be "less than significant." General industrial practices related to sediment handling and shipment include the generation and implementation of a Sediment Management Plan, or documents serving similar purposes, which specifies procedures for sediment load limits, haul truck operation, driver training, etc., in order to minimize the potential of accidental sediment spill.

Remediation projects such as potential dredging and capping projects in the San Diego Bay require federal and state review pursuant to the federal CWA, the California Water Code (CWC), and California state policies. Through the issuing of CWA section 401 Water Quality Certifications and/or CWC Waste Discharge Requirements, the San Diego Water Board requires that project proponents employ proper measures, including the aforementioned general industrial practices as well as other suitable prevention and mitigation methods, as needed, to manage excavated sediments safely and appropriately. Therefore, any identified substantial impacts due to the accidental spillage of sediments from these potential implementation projects will be mitigated by Water Board-issued permit requirements and be less than significant with mitigation incorporated.

California law makes dischargers responsible for accurate characterization of waste, i.e., the dewatered dredged material, prior to disposal in a landfill facility.[55] The possibility that dredged sediments will meet the criteria for "hazardous waste" or will need to be managed as "hazardous material" cannot be determined at this time. However, federal and state laws regulate the handling and transport of hazardous materials. Enforcement by the Department of Toxic Substance Control and California Highway Patrol will ensure that these materials will not have a negative impact on the public or the environment.[56] Furthermore, project-specific environmental analysis will be required for proposed sediment remediation projects needed to comply with this

[55] 27 CCR section 20200 (c)
[56] 40 CFR Parts 260 to 263 and 22 CCR Division 4.5

Basin Plan amendment, which can assess the level of impact and the need for mitigating significant impacts, if any.

Finally, dredging projects resulting from this Basin Plan amendment are expected to be short-term and small in scale in comparison with other San Diego Bay sediment remediation projects, of which the environmental impact to the public and environment with respect to the transport and disposal of sediments has been found to be less than significant when mitigation measures are incorporated. For this reason, the amount of sediment material that may be transported is anticipated to be substantially less than quantities removed in other bay sediment remediation projects, and the likelihood that the hazard impact created through the short-term transport and disposal of dredged materials would be less than significant.

Considering the above information as a whole, the impact to the public or the environment due to the routine transport, use, or disposal of hazardous materials in potential implementation projects of this Basin Plan amendment will be less than significant with mitigation incorporated.

b) Potential implementation projects that include the installation of structural or non-structural BMPs do not involve the release of hazardous material into the environment. These BMP installation projects would not contain, handle, or store any potential sources of chemicals or compounds that would present a significant risk of accidental explosion or release of hazardous substances. Therefore, no impacts will occur due to the installation of structural or nonstructural BMP projects.

The potential impact from an oil or fuel spill from the dredging equipment to San Diego Bay water may be reduced to a less than significant level through the implementation of appropriate spill prevention mitigation measures. Potential mitigation measures could include careful examination and maintenance of all dredging machinery to ensure that the machinery will operate in a sound and safe condition, use of secondary containment structures around all fuel and oil storage facilities, development and implementation of Best Management Practices Plans that address equipment failure, repair during dredging operation, etc. The San Diego Water Board, through the issuance of 401 Water Quality Certification and/or WDR permits, will require that project proponents incorporate proper prevention and mitigation measures, such as these, to reduce the possibility of accidental oil or fuel spills as well as their associated adverse impacts to the public or the environment.

Whereas the goal of the sediment dredging and capping projects is to remove the mass and volume of toxic pollutants from bay water and to eliminate the toxic risks to the aquatic ecosystem, these activities have the potential to re-suspend contaminated sediments in the vicinity of dredging activities and affect water quality in the Bay. Water quality effects from the dredging can be mitigated through the deployment of silt curtains, which can isolate the work area and prevent mixing with other parts of the water. There is a potential for sediment re-suspension during deployment if the curtain

is extended too close to the bay floor, disturbing sediment as the curtain moves with current flow or is lifted with rising tide. The potential impact from re-suspended sediment, however, would be temporary during dredging operations, and could be further mitigated through other measures such as the employment of small cutterhead dredges designed for minimizing sediment disturbance or similar equipment, proper training of personnel responsible for deployment of silt curtains, etc.

Further, remediation projects such as these, which involve fill or dredging in wetlands or riparian areas, require federal and state review pursuant to the CWA, CWC, and state Policies. The San Diego Water Board will require that project proponents implement standard water quality control best management practices and utilize proper construction site management through its CWA section 401 Water Quality Certification Program as well as through its permitting authority by issuing WDR permits pursuant to the CWC. Therefore, any identified substantial impacts from these potential implementation projects would be mitigated by Water Board-issued permit requirements and be less than significant with mitigation incorporated.

Finally, potential implementation projects that result in a decrease in sediment to the receiving water would be relatively small in scale and be located in existing developed areas or on public lands along water courses, which would not create a significant hazard. Dredging and/or capping projects are expected to be short-term and small in scale in comparison with other bay sediment remediation projects where mitigation measures similar to what was discussed in last paragraph were applied, and the environmental impact to the public and environment has been found to be less than significant. As a result, implementation of the Basin Plan amendment with appropriate mitigation incorporated into proposed sediment remediation projects will have a less than significant impact to the public and environment due to upset or accident conditions involving the release of hazardous materials.

c) Potential implementation projects that include the installation of structural or non-structural BMPs do not emit or handle hazardous materials, substances, or waste. These BMP installation projects would not contain, handle, or store any potential sources of chemicals or compounds that would present a significant risk of accidental explosion or release of hazardous substances. Therefore, no impacts will occur due to the installation of structural or nonstructural BMP projects.

Basin Plan amendment action such as dredging contaminated sediments would be located along the industrial waterfront, in San Diego Bay. Four schools, namely Fairhaven School, Central Texas College, California Surfing Lessons San Diego, and National University Southern, are located within a quarter mile of the creek mouth areas that are proposed for dredging and/or capping. Potential risks to school occupants associated with sediment dredging projects include spillage of sediments during transport and airborne release of particles that may include drying agents. As discussed earlier, dredging projects are required to meet the San Diego APCD requirements with respect to airborne release of dust and particulates. Through CWA

section 401 certification and WDR permit requirements the San Diego Water Board will require that appropriate prevention and mitigation measures be included in proposed dredging projects to minimize the potential of accidental sediment spillage. Additionally, it is anticipated that proposed dredging projects in these creek mouths would be comparable to or less extensive than the dredging operations for the Shipyard Sediment Project (LSA Associates Inc. 2011). As a result, impacts from potential dredging projects to schools in proximity of the creek mouths would be less than significant with mitigation.

d) It is unlikely that potential implementation projects involving installation of structural and nonstructural BMPs would occur directly on sites that are included on the List of hazardous material sites, created pursuant to Government Code Section 65962.5. Additionally, potential implementation projects involving sediment dredging and capping would occur within the San Diego Bay, and not directly on listed sites that are on the active California Department of Toxic Substances Control Hazardous Waste and Substances Sites list. There would be no impact from actions resulting from this Basin Plan amendment that create a significant hazard to the public and the environment.

e) Small portions of the Chollas and Switzer creek watersheds lie within the San Diego International Airport's Airport Influence Area (AIA) (ALUC 2004). Potential implementation projects would not create any hazards resulting from obstruction, tall structures, or incompatible land uses (e.g., hospitals, churches, schools, etc.) are proposed as part of the project. Therefore, actions resulting from this Basin Plan amendment are not likely to result in a hazard to people residing or working in the project area.

f) There are four private heliports within the watershed areas of Paleta, Chollas, and Switzer Creeks: San Diego Police Headquarters, U.S. Naval Hospital SD Heliport, KGTV-10 Parking Lot Heliport, and Paradise Valley Hospital Heliport. The Advisory Circular for Heliport Design recommends helipad protection zones that extend 280 feet from the edge of the Final Approach and Takeoff Area (FAA, 2004). Potential implementation projects are not likely to be within the protection zone of any of the local helipads and will not result in a safety hazard for people residing or working in the project area.

g) The following applicable emergency response plans or emergency evacuation plans are evaluated for potential project consistency.

Unified San Diego County Emergency Services Organization Operational Area Emergency Plan

The Operational Area Emergency Plan is a comprehensive emergency plan that defines responsibilities, establishes an emergency organization, defines lines of communications, and is designed to be part of the statewide Standardized Emergency Management System (County of San Diego, 2010b). It provides guidance for emergency planning and requires subsequent plans to be established by each jurisdiction that has responsibilities in a disaster situation. Potential implementation projects resulting from this Basin Plan amendment will not interfere with this plan because it will not prohibit subsequent plans from being established or prevent the goals and objectives of existing plans from being carried out.

Dam Evacuation Plans

Completed in 1901, Chollas Dam was made of earth and rockfill. It sits on a tributary of Chollas Creek and has a high relative hazard rating (County of San Diego, 2010a, Figure 4.3.2). Potential implementation projects that include dredging and capping of sediments will not be located in the dam inundation area. Projects of structural BMPs installation may be carried out within the dam inundation area, but will not interfere with the Dam Evacuation Plan because the project will not involve building of structures that would contain large concentrations of people or special needs individuals that would limit the ability of the County Office of Emergency Services to implement a dam evacuation plan.

Emergency Air Support

Emergency and fire air support services tend to fly lower to the ground than passenger airplanes for law enforcement activities, to carry out search and rescue missions, to collect water for firefighting, and to evacuate victims from remote areas (County of San Diego, 2007a). Emergency response aircraft require sufficient ground clearance to safely and efficiently function during an emergency response. Potential implementation projects resulting from this Basin Plan amendment would not involve building structures that would create an obstruction that could compromise the safety of emergency response aircraft and their ability to effectively respond in an emergency could result in physical interference in the implementation of an emergency response.

San Diego County Operational Area Oil Spill Contingency Element of the Area Hazardous Materials Plan

This Oil Spill Contingency Element describes the strategy for a coordinated response to a discharge or substantial threat of discharge of oil within, or off the coast of, the San Diego County Operation Area (Operation Area). The threat of release or a release of oil may be from a vessel, offshore facility, or onshore facility operating within the boundaries of the Operation Area (County of San Diego, 2007a). Potential implementation projects resulting from this Basin Plan amendment that include dredging of sediments and capping of dredged area will be located at areas along the coast of San Diego County. These projects would not interfere with implementation of the Oil

Spill Contingency Element since the development and implementation of the Contingency Element could occur independently of the Basin Plan amendment projects.

In general, potential implementation projects that include minor construction for sediment reduction and BMPs installations resulting from the Basin Plan amendment would not interfere with any emergency response plans or emergency evacuation plans. Therefore, no impact would occur.

h) Within the watershed areas of Switzer, Chollas, and Paleta creeks, most areas are developed and have wildfire hazard risk level designations of moderate for urban and wildland fire potential (County of San Diego, 2010a, Figure 4.3.7). Potential implementation projects that include sediment dredging and capping will be located in the Bay and near commercial and industrial areas that are removed from wildlands. BMP-construction projects may be adjacent to wildlands that have the potential to support wildland fires; however, it is not likely that projects will be within the canyons or water body. Therefore, no impact is anticipated.

	Potentially Significant Impact	Less Than Significant with Mitigation	Less Than Significant Impact	No Impact
IX. HYDROLOGY AND WATER QUALITY: Would the project:				
a) Violate any water quality standards or waste discharge requirements?	☐	☐	☐	☒
b) Substantially deplete groundwater supplies or interfere substantially with groundwater recharge such that there would be a net deficit in aquifer volume or a lowering of the local groundwater table level (e.g., the production rate of pre-existing nearby wells would drop to a level which would not support existing land uses or planned uses for which permits have been granted)?	☐	☐	☐	☒
c) Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, in a manner which would result in substantial erosion or siltation on- or off-site?	☐	☐	☒	☐
d) Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, or substantially increase the rate or amount of surface runoff in a manner which would result in flooding on- or off-site?	☐	☐	☐	☒
e) Create or contribute runoff water which would exceed the capacity of existing or planned storm water drainage systems or provide substantial additional sources of polluted runoff?	☐	☐	☒	☐
f) Otherwise substantially degrade water quality?	☐	☐	☐	☒
g) Place housing within a 100-year flood hazard area as mapped on a federal Flood Hazard Boundary or Flood Insurance Rate Map or other flood hazard delineation map?	☐	☐	☐	☒

	Potentially Significant Impact	Less Than Significant with Mitigation	Less Than Significant Impact	No Impact
h) Place within a 100-year flood hazard area structures which would impede or redirect flood flows?	☐	☐	☐	☒
i) Expose people or structures to a significant risk of loss, injury or death involving flooding, including flooding as a result of the failure of a levee or dam?	☐	☐	☒	☐
j) Inundation by seiche, tsunami, or mudflow	☐	☐	☒	☐

Discussion:

a) The San Diego Water Board, in the course of carrying out its statutory duties to protect water quality and beneficial uses, established water quality standards, and issues Waste Discharge Requirements and CWA section 401 water quality certifications for such compliance projects. The Water Board will either not approve compliance projects with significant adverse impacts on water quality or projects that violate its own water quality standards. Therefore, no impact will result.

b) Potential implementation projects resulting from this Basin Plan amendment that involve construction of BMPs, such as retention basins, infiltration basins, or vegetated swales, may increase storm water infiltration and subsequently return groundwater recharge rates to pre-development rates. Potential implementation projects will not necessitate use of groundwater for any purpose. No adverse impact to groundwater recharge would result from the BMP construction and implementation projects.

c) Potential implementation projects resulting from this Basin Plan amendment may involve minor construction or earthmoving activities during the installation of BMPs that are specifically intended to reduce or eliminate soil erosion and sediment runoff and reduce wet-weather flows. The purpose of these types of projects will be to reduce overall soil erosion. Therefore, existing drainage patterns of the site or area by stream course alteration or other means will not be altered, and substantial erosion or siltation will not occur on or off-site.

d) Potential implementation projects resulting from this Basin Plan amendment could involve earthmoving operations that could substantially affect existing drainage patterns, but result in more stable hydrology. For example, some projects may be performed to terrace steep slopes to reduce erosion rates and landslide potential. Additionally, installation of facilities such as retention/infiltration basins or bioswales would modify the drainage; however, the facility would ultimately reduce peak wet-weather flows to a lower-flow condition that would be less erosive than existing conditions. The purpose of these types of projects would be to reduce the volume and velocity of wet-weather peak flows and their associated erosion potential, and to reduce sedimentation in streams, which has the effect of reducing flooding and is environmentally beneficial.

When expressed in permits issued by the Water Board, the numeric target in this TMDL will require responsible parties to implement erosion control measures for compliance purposes. Therefore, potential implementation projects of BMP construction and implementation will not substantially increase the rate or amount of surface runoff in a manner which would result in flooding on- or off-site of project areas. There will be no adverse impact.

e) Activities related to potential implementation projects resulting from this Basin Plan amendment are, by design, intended to decrease peak runoff rates from upland land uses to reduce sediment and associated pollutant input to the San Diego Bay. These potential implementation projects will likely result in a decrease of wet-weather flows and associated pollutant loads to the Bay. Therefore, potential implementation projects resulting from this Basin Plan amendment would not result in creating or contributing additional runoff water that would exceed the capacity of the existing storm water drainage system.

Potential implementation projects that involve minor construction activities and earthmoving operations could result in additional short-term sources of polluted runoff due to accidental release of sediment into the waterway and pollutants such as petroleum products from construction equipment during the construction-phase. Construction projects affecting an area of one acre or more would require a general construction National Pollutant Discharge Elimination System (NPDES) permit from the State Water Board and implementation of a storm water pollution prevention plan to control sediment erosion and runoff. The San Diego Water Board will require proper construction site management and implementation of standard best management practices to control erosion and prevent spills. Additionally, implementation projects will receive local planning and environmental review through mandatory permitting processes that evaluate projects, minimize environmental impacts, and assure project consistency with plans, policies, and ordinances, such as local grading ordinances. Therefore, impacts will be less than significant.

Potential dredging and capping of contaminated sediment associated with this Basin Plan amendment will occur within San Diego Bay. The drying of sediments will likely be performed onshore at places near the Bay. The drying process will be of short-term. With the implementation of appropriate BMPs that will be required in 401 Certification and/or Waste Discharge Requirements issued by the San Diego Water Board to the dredging and capping projects, the drying operation will not likely contribute to a significant increase of surface runoffs. Impacts will be less than significant.

f) The purpose of the Basin Plan amendment is to correct the water quality impairment and restore beneficial uses. Potential implementation projects of BMP installation resulting from this Basin Plan amendment are intended to reduce organic pollutant discharges to the San Diego Bay, thereby decreasing the contaminant loading associated with the sediment deposition in the Bay. These BMP installation projects will not have adverse water quality impacts.

g) The Basin Plan amendment does not require nor will potential implementation projects resulting from this Basin Plan amendment involve the construction of housing. Therefore, no housing would be placed within the 100-year flood hazard zone as a result of the proposed action. No flood hazard impacts would occur.

Impacts to water quality, such as turbidity and turbidity-associated toxicant concentrations in the water column, from dredging and capping operations associated with this Basin Plan amendment will be temporary. In all, any negative impacts of these projects to water quality will not be substantial.

h) The 100-year floodplain is located along the stream drainages channels in the three watersheds (County of San Diego, 2010a, Figure 4.3.4). Potential implementation projects of BMP installation may be performed near or in the floodplain but no structures will be placed that would impede or redirect flood flows. Therefore, no impacts will occur.

i) Completed in 1901, Chollas Dam is made of earth and rockfill. It sits on a tributary of Chollas Creek and has a high relative hazard rating (County of San Diego, 2010a, Figure 4.3.2). Potential implementation projects that include dredging and capping of sediments will not be located in the dam inundation area. Potential implementation projects that include minor construction and earthmoving may be installed within the dam inundation area. As a result, people working on these projects could be exposed to risk if Chollas Dam failed. Any such risk would be very small because of the short-term nature of the construction-phase of such projects. Furthermore, the Basin Plan amendment does not include construction of buildings or housing within the inundation area and will not continuously expose people or structures to a significant risk from flooding. The project's impact would be less than significant.

j) County of San Diego has produced maps illustrating the hazards for coastal storms/erosion/tsunami and rain-induced landslide based on historic disaster information (County of San Diego 2010a, Figure 4.3.1). The projected hazard of the maximum tsunami projected run-up affects the shoreline of San Diego Bay and less than 0.3 miles inland up the Chollas and Paleta creek channels. Only implementation projects that include BMP installations or sediment remediation projects located near or within the creek channels have a potential to be affected by tsunami hazard.

The small canyon systems in the three watersheds of Paleta, Chollas, and Switzer, creeks have steep slopes (+25 percent) (County of San Diego 2010a, Figure 4.3.5). Mudflow hazards are most likely to occur during wet-weather events, particularly during El Niño cycles. Similarly, hazards from landslides are increased during rain events in winter. It is unlikely that BMP construction or sediment remediation activities would occur during wet-weather when the risk would be highest. Lastly, no potential implementation projects would be impacted by seiche inundation. Therefore, impacts

from potential implementation projects would be less than significant with respect to inundation by seiche, tsunami, or mudflow.

	Potentially Significant Impact	Less Than Significant with Mitigation	Less Than Significant Impact	No Impact
X. LAND USE AND PLANNING: Would the project:				
a) Physically divide an established community?	☐	☐	☐	☒
b) Conflict with any applicable land use plan, policy, or regulation of an agency with jurisdiction over the project (including, but not limited to the general plan, specific plan, local coastal program, or zoning ordinance) adopted for the purpose of avoiding or mitigating an environmental effect?	☐	☐	☐	☒
c) Conflict with any applicable habitat conservation plan or natural community conservation plan?	☐	☐	☐	☒

Discussion:

a) Potential implementation projects resulting from this Basin Plan amendment that include minor construction or earthmoving activities would not be of a size or configuration likely to physically divide an established community. Dredging and/ or capping are activities that would not occur within the community but within a water body. Implementation of the Basin Plan amendment will not divide any established community. Therefore, no impact would occur.

b) Potential implementation projects that include earthmoving and/or minor construction activities, activities that result in a decrease in sediment contributions to receiving water, and/or activities that result in a decrease in storm flows in channels would not conflict with any land use plan, policy, or regulation.

Installation of treatment control BMPs, such as infiltration facilities, vegetated swales, or buffer zones placed along the conveyance system and incorporated into redevelopment projects would reduce sediment; improve water quality; reduce peak storm water flows; increase infiltration of surface water; and/or decrease dry-weather flows. These types of BMPs, used in Low Impact Development (LID), are used for the purposes of decreasing storm water runoff from impervious surfaces and reducing pollutants in storm water. LID is already required for land development, including redevelopment projects, and capital improvement projects within the cities, Port of San Diego, and county jurisdictions (City of San Diego, 2011; City of La Mesa 2011; City of National City 2008; Port of San Diego 2011; and County of San Diego, 2011a; Brown and Caldwell,

2011).[57] U.S. Navy policy also requires the use of LID in construction and renovation projects at naval facilities (U.S. Navy 2007, Chapter 9).

Installation of sediment control BMPs and use of source control BMPs would decrease the amount of sediment and pollutants that wash off of impervious surfaces into the receiving water, which will improve water quality. Additionally, the Basin Plan amendment will require sediment remediation of the San Diego Bay shoreline areas at these creek mouths by physically removing or isolating legacy pollutants from the water column, preventing direct contact with the aquatic community, rather than direct contact with benthic communities. Sediment remediation will improve water quality and reduce effects to the biota from direct pollutant uptake or biomagnification in the food web.

These types of BMPs and activities may be used by the jurisdictions to maintain and improve infrastructure, conveyance system, and wetland resources and are consistent with the cities' and county general plan elements and ordinances, the Port of San Diego's master plan and ordinances, and U.S. Navy's policies for environmental, natural, and cultural resource management (U.S. Navy 2007).[58] Projects proposed to comply with Basin Plan amendment requirements would be subject to the review of these agencies and entities, assuring consistency with local land use plans or policies. For all of these reasons, no conflict with any applicable land use plan, policy, or regulation of an agency with jurisdiction over the project is anticipated. Therefore, no impact would occur.

c) The Basin Plan amendment will not conflict with any habitat conservation plan or natural community conservation plan. The MSCP Plan and associated subarea plans for the Cities of San Diego and La Mesa are the primary conservation plans that apply in these three watersheds (City of San Diego 1997; City of San Diego 1998; City of La Mesa 1998). The MSCP addresses the potential impacts of urban growth, natural habitat loss, and species endangerment; and includes a plan to mitigate for the potential loss of the multiple covered species and their habitat due to the direct impacts of future development of both public and private lands within the MSCP area (City of San Diego, 1997).

[57] City of San Diego Municipal Code, Chapter 4, Article 3, Division 3, section 43.0307; La Mesa Municipal Code, Title 7, Chapter 7.18; City of Lemon Grove Municipal Code, Title 8, Chapters 8.48 and 8.52 (SUSMP); National City Municipal Code, Title 14, Chapter 14.22.050 and Ordinance No. 2008-2307; San Diego Unified Port District Code Article 10; and County of San Diego Watershed Protection Ordinance, section 67.806.

[58] City of San Diego General Plan, Conservation and Public Facilities Elements; City of San Diego Municipal Code, Chapter 14, Article 2, Division 2, section 142.0220, and Chapter 14, Article 3, Division 1; City of La Mesa General Plan, Conservation & Open Space Element and Public Services & Facilities Element; City of La Mesa Code of Ordinances, Title 7, Chapters 7.18 and 7.19; City of Lemon Grove General Plan, Conservation and Recreation Element; Lemon Grove Municipal Code, Title 8, Chapters 8.48 and 8.52, and Title 18, Chapter 18.08; National City General Plan, Open Space & Agriculture and Conservation & Sustainability Elements; National City Municipal Code, Title 14, Chapter 14.22 and Title 15; Port of San Diego Master Plan; San Diego Unified Port District Code Article 10; County of San Diego General Plan, Conservation and Open Space Element and Safety Element; and County of San Diego Grading Ordinance, Watershed Protection Ordinance, and Resource Protection Ordinance.

Potential implementation projects resulting from this Basin Plan amendment are expected to be placed along the conveyance system or incorporated into redevelopment projects and would not be in conflict with sensitive biological resource areas. Additionally, such projects would be subject to local agency's discretionary project review in accordance with the jurisdiction's plans, policies, and ordinances, ensuring that MSCP areas are protected. Therefore, no impact will occur.

	Potentially Significant Impact	Less Than Significant with Mitigation	Less Than Significant Impact	No Impact
XI. MINERAL RESOURCES: Would the project:				
a) Result in the loss of availability of a known mineral resource that would be of value to the region and the residents of the state?	☐	☐	☐	☒
b) Result in the loss of availability of a locally-important mineral resource recovery site delineated on a local general plan, specific plan or other land use plan?	☐	☐	☐	☒

Discussion:

a) Other than the land area near the headwaters of Chollas Creek's north branch, which is categorized as containing known mineral deposits, the three watersheds are categorized as containing unknown mineral deposits (County of San Diego 2008, Figures 2). However, Basin Plan amendment-related excavation and construction would be relatively small in scale, be located in existing developed areas or on public lands, and would not involve the construction of new buildings that would encroach upon existing or potential future mining sites. The project will not result in the loss of availability of any known mineral resources that would be of value to the region or the residents of the State.

b) Basin Plan amendment-related excavation and construction may occur in the vicinity of existing sand and gravel mining operations (County of San Diego 2008, Figure 3); however, projects would be relatively small in scale and would not result in the loss of availability of mineral resources of local importance.

	Potentially Significant Impact	Less Than Significant with Mitigation	Less Than Significant Impact	No Impact
XII. NOISE: Would the project result in:				
a) Exposure of persons to or generation of noise levels in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies?	☐	☐	☒	☐
b) Exposure of persons to or generation of excessive groundborne vibration or groundborne noise levels?	☐	☐	☐	☒
c) A substantial permanent increase in ambient noise levels in the project vicinity above levels existing without the project?	☐	☐	☒	☐
d) A substantial temporary or periodic increase in ambient noise levels in the project vicinity above levels existing without the project?	☐	☐	☒	☐
e) For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project expose people residing or working in the project area to excessive noise levels?	☐	☐	☒	☐
f) For a project within the vicinity of a private airstrip, would the project expose people residing or working in the project area to excessive noise levels?	☐	☐	☒	☐

Discussion:

a) Potential implementation projects resulting from this Basin Plan amendment that include construction, earthmoving, or dredging could temporarily generate noise during the construction phase of those projects. Applicable and appropriate measures to reduce noise, such as conducting work only during daytime hours, will be evaluated when specific projects are determined, depending upon proximity of construction activities to sensitive receptors. In general, potential dredging and sediment reduction installation activities would occur in discrete, localized areas throughout the watershed and would be located in outdoor and open space areas. Construction noise levels would be temporary in nature and similar to typical construction site projects. Potential projects will not generate construction noise that exceeds local noise ordinances for discretionary projects.[59] For this reason, a less than significant impact would occur.

b) The possibility that potential projects would include blasting or boring activity causing excessive groundborne vibration or groundborne noise levels is speculative and need not be considered in this analysis. Therefore, there would be no impacts from groundborne vibration and noise.

[59] City of San Diego Municipal Code, Chapter 5, Article 9.5; La Mesa Municipal Code, Title 10, Chapter 10.80; Lemon Grove Municipal Code, Title 9, Chapter 9.24, National City Municipal Code, Title 12; County of San Diego Noise Ordinance, Title 3, Division 6, Chapter 4, sections 36.404 and 36.409.

c) Non-structural BMPs could result in increases in existing noise levels due to increased traffic from street sweepers and/or maintenance vehicles which may increase the noise level temporarily as vehicles pass through an area. However, the increase in noise levels would be no greater than typical infrastructure maintenance activities currently performed by municipalities and is therefore, less than significant.

d) To comply with requirements derived from the Basin Plan amendment, potential implementation projects involving dredging, earthmoving, or construction could result in a temporary increase in ambient noise levels. As discussed in part a, above, potential projects will not generate construction noise in exceedance of local noise ordinances; therefore, the potential implementation projects are not anticipated to result in a substantial temporary or periodic increase in ambient noise. For this reason, a less than significant impact would occur.

e) As previously mentioned in e) of the Hazards and Hazardous Materials Section of this analysis, portions of the project area are included within the Airport Influence Area of the SDIA as defined in the ALUCP (ALUC 2004). Installation of structural BMPs may be conducted in the vicinity of noise sensitive land uses; however, they will typically be sited in outdoor and open space areas, away from noise sensitive uses. Construction noise levels would be temporary in nature and similar to typical construction site projects. Non-structural BMPs, such as street sweeping, may occur within the Airport Influence Area; however, the frequency of street sweeping is not expected to increase noise levels significantly over current levels. Therefore, exposure to excessive sound levels of people living and working in the vicinity of airports is considered to be less than significant.

f) As previously mentioned in f) of Hazards and Hazardous Materials Section of this analysis, there are four private heliports within the three watershed areas. As discussed above, noise produced during implementation of potential projects would be temporary in nature and similar to typical construction projects or comparable to existing levels and would not be anticipated to result in a significant increase to the sound levels in the vicinity of these heliports. Therefore, exposure to excessive sound levels in the vicinity of private air strips is considered to be less than significant.

	Potentially Significant Impact	Less Than Significant with Mitigation	Less Than Significant Impact	No Impact
XIII. POPULATION AND HOUSING: Would the project:				
a) Induce substantial population growth in an area, either directly (for example, by proposing new homes and businesses) or indirectly (for example, through extension of roads or other infrastructure)?	☐	☐	☐	☒
b) Displace substantial numbers of existing housing, necessitating the construction of replacement housing elsewhere?	☐	☐	☐	☒
c) Displace substantial numbers of people, necessitating the construction of replacement housing elsewhere?	☐	☐	☐	☒

Discussion:

a) The Basin Plan amendment would not induce substantial population growth in the project area. Potential implementation projects resulting from this Basin Plan amendment will not propose a physical or regulatory change that would construct new public facilities that foster population or economic growth, construct new housing or businesses, or extend roads or infrastructure. Therefore, no impacts would occur.

b) Potential implementation projects resulting from the Basin Plan amendment would be placed along the conveyance system right-or-way or incorporated into redevelopment projects. Therefore, such projects would not be located to displace existing housing or any people that would need replacement housing. Therefore, no impact would occur.

c) The Basin Plan amendment would not displace substantial numbers of people or create a need for the construction of replacement housing, see discussion in b) of this section, above. No impacts would occur.

	Potentially Significant Impact	Less Than Significant with Mitigation	Less Than Significant Impact	No Impact
XIV. PUBLIC SERVICES:				
a) Would the project result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, need for new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times or other performance objectives for any of the public services:	☐	☐	☐	☒
Fire protection?	☐	☐	☐	☒
Police protection?	☐	☐	☐	☒
Schools?	☐	☐	☐	☒
Parks?	☐	☐	☐	☒
Other public facilities?	☐	☐	☐	☒

Discussion:

a) Compliance with the Basin Plan amendment would not involve provision or alteration of government facilities. Potential implementation projects resulting from this Basin Plan amendment do not include any new buildings or structures, such as housing units or industrial/commercial businesses, and therefore would not create or increase the demand for any new governmental or public services or facilities (e.g., fire and police protection, schools, parks, libraries, etc.), or create the need for alteration or construction of any government buildings. Therefore, the Basin Plan amendment would not have impacts associated with increasing or altering public services.

	Potentially Significant Impact	Less Than Significant with Mitigation	Less Than Significant Impact	No Impact
XV. RECREATION:				
a) Would the project increase the use of existing neighborhood and regional parks or other recreational facilities such that substantial physical deterioration of the facility would occur or be accelerated?	☐	☐	☐	☒
b) Does the project include recreational facilities or require the construction or expansion of recreational facilities which might have an adverse physical effect on the environment?	☐	☐	☐	☒

Discussion:

a) Potential implementation projects associated with this Basin Plan amendment would not increase use of or create any new demands for parks or recreational facilities. Therefore, implementation projects resulting from this Basin Plan amendment will have no impact to the public and environment with respect to recreational needs.

b) The Basin Plan amendment does not involve construction or expansion of recreation facilities.

	Potentially Significant Impact	Less Than Significant with Mitigation	Less Than Significant Impact	No Impact
XVI. TRANSPORTATION/TRAFFIC: Would the project:				
a) Conflict with an applicable plan, ordinance or policy establishing measures of effectiveness for the performance of the circulation system, taking into account all modes of transportation including mass transit and non-motorized travel and relevant components of the circulation system, including but not limited to intersections, streets, highways and freeways, pedestrian and bicycle paths, and mass transit?	☐	☐	☐	☒
b) Conflict with an applicable congestion management program, including, but not limited to level of service standards and travel demand measures, or other standards established by the county congestion management agency for designated roads or highways?	☐	☒	☐	☐
c) Result in a change in air traffic patterns, including either an increase in traffic levels or a change in location that results in substantial safety risks?	☐	☐	☐	☒
d) Substantially increase hazards due to a design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment)?	☐	☐	☐	☒

	Potentially Significant Impact	Less Than Significant with Mitigation	Less Than Significant Impact	No Impact
e) Result in inadequate emergency access?	☐	☐	☐	☒
f) Conflict with adopted policies, plans or programs regarding public transit, bicycle, or pedestrian facilities, or otherwise decrease the performance or safety of such facilities?	☐	☐	☒	☐

Discussion:

a) Potential implementation projects resulting from the Basin Plan amendment will not create new land development that would add new roads or permanently increase the average daily trips for public roads in the watershed. Also, the Basin Plan amendment will not interfere with public transit routes or pedestrian/bicycle trails and paths such as the Bayshore Bikeway. For all potential implementation projects, any increase in traffic would be temporary and limited to local areas in the vicinity of individual construction or restoration projects. It is anticipated that with the exception of dredging, individual projects would mobilize equipment at the beginning and end of the work and not generate a significant increase in daily truck trips. Potential implementation projects would not create substantial long-term traffic in relation to the existing load and capacity of existing street systems, and therefore, in the long-term, will not be in conflict with local general plans, the Regional Transportation Plan and Congestion Management Program (SANDAG 2011), the City of San Diego's Pedestrian Master Plan (City of San Diego 2006), or other policies.

b) Dredging of contaminated sediments will result in vehicle traffic to transport the dredged materials to landfills. The number of additional truck trips needed to transport dredged materials to landfill has the potential to negatively impact intersections and roadway sections already operating below the acceptable Level of Service (LOS) standard (SANDAG 2011). While it would be speculative to estimate the number of vehicle trips or conduct a traffic modeling study at this time, the increased vehicle traffic is assumed to be comparable to or less than the vehicle traffic assumed for the Shipyard Sediment Remediation Project (LSA Associates, Inc. 2011). The Traffic Impact Analysis prepared for the Shipyard Sediment Remediation Project identified potentially significant impacts in the Barrio Logan neighborhood at the intersection of the Interstate 5 southbound ramp and Boston Avenue, and the roadway segment on Boston Avenue from 28th street to Interstate 5. Alternate routes were identified that would not result in a significant reduction of the level of service, cause significant delays, or increased traffic volumes.

Therefore, for the purposes of this analysis, it is assumed that impacts to traffic may occur with future actions. Through the issuing of CWA section 401 Water Quality Certifications and/or CWC Waste Discharge Requirements and any required environmental analysis, the San Diego Water Board would require identification of project-specific mitigation measures at that time, such as rerouting traffic away from

intersections and roadway segments with low LOS. It is anticipated that with mitigation measures, short-term traffic impacts will less than significant.

c) Potential implementation projects would not result in any change in air traffic patterns. The Basin Plan amendment would not affect air traffic. No impacts are anticipated.

d) This Basin Plan amendment does not include provisions to construct new roads or modify existing roads. No new hazards due to the design or engineering of the road network in the Project Area will occur or incompatible uses be introduced; therefore, there will be no impact from this project.

e) Potential implementation projects will not involve any permanent changes that would result in inadequate emergency vehicle access (e.g. long roads with a single access point, roads over steep grades, improper road surfaces, and/or narrow roads), significantly contribute to the inability to effectively evacuate residents during a disaster (wildfire, earthquake, or flood), or provide necessary emergency access for fire, ambulance, or law enforcement personnel. The Basin Plan amendment would not result in inadequate emergency access and no impacts would occur.

f) To the extent that potential implementation projects that include minor construction for BMP installations and sediment remediation activities are conducted in locations near pedestrian or bike paths, there exists the potential to temporarily hinder access points depending on the proximity to construction equipment activity. However, projects are not expected to permanently affect or reduce existing or future pedestrian or bicycle access. If pedestrian or bicycle safety issues are present, then environmental analysis conducted for each discretionary action will identify any appropriate conditions to be placed on the project prior to approval to address those concerns. Also, potential implementation projects will not generate additional, ongoing motor vehicle trips that would increase traffic or congestion, or create design features on road segments/intersections that would create a hazard to pedestrians, bicyclists, or mass transit. Potential truck trips associated with dredging activities are not anticipated to degrade the level of service of roadways along the Bayshore Bikeway (SANDAG 2006). In general, this Basin Plan amendment will not conflict with local plans and policies, including the City of San Diego's Mobility and Recreation Elements (General Plan) and Pedestrian Master Plan supporting alternative transportation. Impacts will be less than significant.

	Potentially Significant Impact	Less Than Significant with Mitigation	Less Than Significant Impact	No Impact
XVII. UTILITIES AND SERVICE SYSTEMS: Would the project:				
a) Exceed wastewater treatment requirements of the applicable Regional Water Quality Control Board?	☐	☐	☐	☒
b) Require or result in the construction of new water or wastewater treatment facilities or expansion of existing facilities, the construction of which could cause significant environmental effects?	☐	☐	☐	☒
c) Require or result in the construction of new storm water drainage facilities or expansion of existing facilities, the construction of which could cause significant environmental effects?	☐	☐	☒	☐
d) Have sufficient water supplies available to serve the project from existing entitlements and resources, or are new or expanded entitlements needed?	☐	☐	☐	☒
e) Result in a determination by the wastewater treatment provider which serves or may serve the project that it has adequate capacity to serve the project's projected demand in addition to the provider's existing commitments?	☐	☐	☐	☒
f) Be served by a landfill with sufficient permitted capacity to accommodate the project's solid waste disposal needs?	☐	☐	☒	☐
g) Comply with federal, state, and local statutes and regulations related to solid waste?	☐	☐	☐	☒

Discussion:

a) Potential implementation projects resulting from this Basin Plan amendment will not involve any uses that discharge any wastewater to sanitary sewers or on-site wastewater treatment systems. Therefore, there will not be any exceedance of any wastewater treatment requirements.

b) The Basin Plan amendment does not require nor will potential implementation projects resulting from this Basin Plan amendment involve the construction or expansion of water or wastewater treatment facilities. No significant environmental effects would be caused by this project.

c) Basin Plan amendment-related projects will likely include construction of new or expanded storm water drainage facilities that will treat accelerated storm water flows by slowing down flows, reduce sediment and associated pollutants in storm water runoff, and reduce dry weather flows. These construction activities have the potential to cause infrequent, minor, short-term impacts to hydrology, biological resources, cultural resources, noise, traffic, and air quality that will be less than significant. Overall, these facilities will improve water quality, reduce erosion, improve hydrology, and/or restore

wetland function. The environmental impact from the construction of implementation projects such as these would be less than significant.

d) The Basin Plan amendment does not require nor will potential implementation projects resulting from this Basin Plan amendment involve water supply or services from a water district. Construction and maintenance of structural and non-structural BMPs would not rely on water service. Therefore, no impacts would occur.

e) The Basin Plan amendment and any potential implementation projects resulting from the amendment would not directly utilize water supply or generate wastewater nor would the projects increase population or provide employment. Therefore, the potential implementation projects would not require an ongoing water supply or additional wastewater treatment services and no impacts would occur from this project.

f) The potential implementation projects may affect municipal solid waste generation or landfill capacities, through the disposal of dredged materials and disposal of construction debris related to ongoing maintenance of BMPs. Dredging conducted as a result of this Basin Plan amendment will generate waste that will most likely be disposed of in a landfill. Based on proximity to the project area, the majority of dredge spoils will likely be disposed of at Otay Landfill, approximately 15 miles south of the site. While the actual quantity of dredge spoils is unknown at this time, it is likely to be comparable to or less than the 143,400 cubic yards (cy) estimated to be generated by the Shipyards Sediment Remediation Project (LSA Associates, Inc. 2011). This quantity is negligible compared to the remaining capacity of Otay Landfill, which is over 25,000,000 cy.[60] Ongoing maintenance of BMPs may result in removal of debris and sediments from culverts, sedimentation basins, etc. The net volume of waste generated on an ongoing basis will be relatively small and infrequent. Since neither disposal of dredged materials or ongoing generation of wastes due to the maintenance of BMPs will result in generating a significant quantity of waste in relation to the remaining capacity of Otay Landfill, impacts will be less than significant.

g) The waste generated from all implementation projects will be subject to federal, state, and local statutes and regulations related to solid waste. There is a potential that a portion of dredged materials may be classified as a California hazardous material. All dredge spoils must be tested upon removal and prior to disposal. Waste classified as hazardous materials may be transported to Kettleman Hills Landfill in Kings County, California, near Bakersfield. There is no reason why potential implementation projects could not comply with all federal, state and local statues regarding solid waste during characterization and disposal; thus, no impacts would occur.

[60] Otay Landfill capacity reported in Quarterly Monitoring Report (January through March 2012) dated April 24, 2012, submitted by Republic Services, Inc. Solid Waste Facility Permit No. 37-AA-0010 and Waste Discharge Requirements Order No. 90-09, as amended by RWQCB Order No. 93-86, San Diego County.

	Potentially Significant Impact	Less Than Significant with Mitigation	Less Than Significant Impact	No Impact
XVIII. MANDATORY FINDINGS OF SIGNIFICANCE				
a) Does the project have the potential to degrade the quality of the environment, substantially reduce the habitat of a fish or wildlife species, cause a fish or wildlife population to drop below self-sustaining levels, threaten to eliminate a plant or animal community, substantially reduce the number or restrict the range of a rare or endangered plant or animal or eliminate important examples of the major periods of California history or prehistory?	☐	☒	☐	☐
b) Does the project have impacts that are individually limited, but cumulatively considerable? ("Cumulatively considerable" means that the incremental effects of a project are considerable when viewed in connection with the effects of past projects, the effects of other current projects, and the effects of probable future projects)?	☒	☐	☐	☐
c) Does the project have environmental effects which will cause substantial adverse effects on human beings, either directly or indirectly?	☐	☐	☒	☐

Discussion:

a) The proposed Basin Plan amendment is intended to improve water quality and enhance habitat in the Bay. It is expected that reduced pollutant loading from storm water discharges consistent with the watershed WLAs will prevent a condition of impairment from re-establishing in the three creek mouth areas. Sediment remediation of the contaminated sediment will reduce the ambient levels of pollutants contaminating the Bay, reduce the amount of organic pollutants available for bioaccumulation (primarily PCBs and benzo[a]pyrene), and remove three of the identified toxic hotspots from San Diego Bay. Sediment remediation will remove collocated pollutants from the environment that are adversely affecting marine and wildlife organisms, including metals and other pesticides not being addressed in this Basin Plan amendment. An adaptive management approach is being required to all the responsible parties to determine the most effective course of action to achieve WLAs and sediment targets and improve beneficial uses in San Diego Bay with the least environmental impact.

Potential implementation projects that involve minor construction, earthmoving, and dredging and capping activities have the potential to degrade the quality of the environment on a short-term basis. BMP installations have the potential to result in short-term discharges of runoff due to accidental release of sediment into the waterway during the construction-phase. Potential dredging and capping operations have the potential to create water quality excursions due to turbidity caused by re-suspended sediment, accidental oil or fuel spills, and release of contaminant constituents formerly sorbed on sediment particles to the water column, all of which have the potential to effect marine animals. These operations can also generate noise that can impact birds,

marine mammals, and sea turtles. Additionally, BMP installation projects and implementation would have a potentially significant impact on historic, archaeological, and paleontological resources. As previously discussed, these impacts can be mitigated to less than significant through regulatory oversight by this agency as well as other agencies that have been named as responsible parties.

The project will not substantially reduce fish or wildlife habitat, cause a reduction in fish or wildlife populations below self-sustaining levels, threaten or eliminate a natural community, reduce the number or restrict the range of a special status species, or eliminate important examples of California history or prehistory.

b) As discussed in Section H5.1, potential implementation projects resulting from this Basin Plan amendment that include minor construction, earthmoving, dredging, or capping activities have the potential to contribute to short-term cumulative impacts on the categories of air quality, biological resources, hazardous materials, water quality, noise, and traffic.

Air Quality – Potential implementation projects combined with other construction projects (see discussion in Section H5.1) would contribute cumulatively to the local and regional air pollutants. Since the San Diego Air Basin is currently nonattainment with respect to ozone, projects that involve NO_x (a precursor to ozone) emission from heavy dredging equipment will likely temporarily exacerbate the impacts on air quality. The long-term impact on air quality due to sediment dredging/capping operations associated with this Basin Plan amendment is not considered cumulatively significant, as the emissions from the operations and transportation of waste will be short-term, and would cease once the project is completed.

Biological Resources – Potential implementation projects involving construction, earthmoving, and dredging/capping activities could have short-term cumulative impacts to birds, fish, marine mammals, and sea turtles if other projects in the vicinity of potential projects occur at the same time. These types of activities occur in the most urban and industrial areas of San Diego Bay, which is a large water body that includes many areas of natural habitat, including the San Diego National Wildlife Refuge. The potential for cumulative impacts would not be significant and can be mitigated through proper construction scheduling, which will be required by the San Diego Water Board and is expected to be required by other permitting agencies for specific projects. In addition, these effects are not cumulatively considerable in the long-term because the effects will cease with the completion of construction.

Hazardous Materials – The cumulative impacts attributable to dredging operations resulting from this Basin Plan amendment are evaluated together with those of potential future projects in San Diego Bay, namely routine maintenance dredging projects and sediment other cleanup projects. According to the San Diego Water Board maintenance and environmental dredging records, the estimated dredge volume (225,000 yd^3) for the dredging/capping projects associated with this Basin Plan amendment is within the volume ranges of historical dredging operations (0 to 763,000 yd^3). As a result, the overall impacts with respect to the generation and handling of

hazardous materials from the potential projects of this Basin Plan amendment are expected to be within the historical ranges.

Water Quality – As discussed previously, the long-term purpose of BMP installation and implementation associated with this Basin Plan amendment is to improve the water quality in San Diego Bay and its tributaries by reducing contaminant-bounded sediment loads. Therefore, any potential adverse impacts on water quality during the minor construction and earthmoving activities of structural BMP installation will be temporary and not cumulatively significant. The dredge volume resulting from this Basin Plan amendment will likely be within the historical ranges, and so the incremental impacts from potential projects of this Basin Plan amendment would be less than significant.

Noise and Traffic – To the extent that combined construction activities do occur, there would be temporary elevated adverse impacts on noise levels and traffic conditions. However, considering that the structural BMP installation and maintenance projects generally tend to be small in scale and relatively short in duration, the incremental impacts of these BMP implementation projects to those environmental categories are expected to be of short-term and not cumulatively considerable.

Considering all of the above, except for Air Quality, cumulative impact from the proposed Basin Plan amendment will not be cumulative considerable. The cumulative impacts to Air Quality will be potentially significant in the short-term, but will cease in the long run with the completion of the construction and dredging/capping activities.

c) This analysis has identified that air quality exceedances may increase the potential risk to human beings from both the transport and disposal of hazardous material, from an increase in the potential for accidents, and from hazardous emissions that would occur near a school. However, these potential impacts will be short-term, occurring during BMP construction or sediment remediation activity and can be mitigated to acceptable levels, as discussed in the analysis above. These potential impacts to human beings are not likely to be substantially adverse, either directly or indirectly, and are therefore, less than significant. The Basin Plan amendment is intended to benefit human beings through implementation of actions to improve water quality and enhance habitat in San Diego Bay.

H3.3 Economic Factors

This section presents the San Diego Water Board's economic analysis of the most reasonably foreseeable methods of compliance with this Basin Plan amendment.

H3.3.1 Legal Requirement for Economic Analysis

Porter-Cologne Section 13241(d) requires staff to consider costs associated with the establishment of water quality objectives. This TMDL does not establish water quality objectives. It is a plan for achieving existing water quality objectives. Therefore, cost considerations required in Section 13241 are not required for this TMDL.

The purposes of this cost analysis are to provide the San Diego Water Board with information concerning the potential cost of implementing this TMDL and to address concerns about costs that may be raised by responsible parties. Potential costs are analyzed for reasonably foreseeable methods of compliance with this Basin Plan amendment, as discussed in Section H3.1.

Furthermore, the San Diego Water Board must comply with CEQA when amending the Basin Plan.[61] The CEQA process requires the San Diego Water Board to analyze and disclose the potential adverse environmental impacts of a Basin Plan amendment that is being considered for approval. The San Diego Water Board must consider a reasonable range of economic factors in this analysis.[62] However, economic effects of a project shall not be treated as significant effects on the environment.[63]

H3.3.2 TMDL Project Implementation Costs

The cost of implementing this TMDL will range widely and depend on the methods that the responsible parties select to meet the WLAs. Considering that most areas in the three watersheds of Switzer, Chollas, and Paleta creeks are highly developed, the selection of specific BMP controls would likely be subject to potential limitations on available land space, a condition generally requiring more units of smaller-scale treatment facilities that in turn would drive up the treatment costs.

The specific controls to be implemented for pollutant reduction will be chosen by the responsible parties after adoption of this TMDL Basin Plan amendment. All costs presented in this section are preliminary estimates only since particular elements of a control, such as type, size, and location, would need to be developed to provide a basis for more accurate cost estimations. Identifying the specific controls that responsible parties will choose to implement is speculative at this time and the controls presented in this section serve only to demonstrate potential costs. For the purpose of this analysis, the BMP controls presented in this section were selected, taking into consideration the potential space limitation as imposed by the “highly-developed” character of the three watershed areas. Potential costs of dredging and capping to remediate contaminated sediment in these creek mouths in San Diego Bay are also included.

H3.3.3 Cost Estimates of Potential Implementation Projects

Based on information presented in Table 2-1 of the Technical Report, impervious surfaces in the three watersheds of Switzer, Chollas, and Paleta creeks are about 2,561, 15,184, and 2,035 acres, respectively; and the total area of impervious surface is estimated to be approximately 19,780 acres. These estimations of impervious surfaces in the three watersheds as well as the estimation of total impervious surface area are conservative in that the areas of certain land use activities (such as agriculture and rural residential) that are included in the estimations are, in reality, not 100 percent

[61] Public Resources Code section 21080
[62] See Public Resources Code section 21159(c)
[63] 14 CCR section 15131

impermeable to storm water infiltration. The amounts of "permeable" areas within the "impervious surfaces" are unknown. For this analysis, this total impervious surface area estimate is used to demonstrate the range of costs for implementing the potential implementation projects.

Approximate costs associated with typical structural BMPs that might be implemented as reasonably foreseeable methods of compliance are provided below. Cost estimates for structural BMPs cited from "*Stormwater Best Management Practice Handbook – New Development and Redevelopment, and Stormwater Best Management Practice Handbook – Construction*" are for new construction costs only (CASQA 2003a and b). These estimates generally do not take into account retrofit of existing structures or the potential purchase on land needed for the BMP. Detailed information such as the spatial extent and dollar amount needed for retrofit or land acquisition will not be available until the specific project level, and so is not included in this cost analysis. However, it should be pointed out that the likelihood of retrofitting and land acquisition is considered high in this TMDL project due to the "highly-developed" characteristics of the three watersheds, which will likely further drive up the implementation costs. Cost estimates for sediment dredging and capping are also provided in this section.

Treatment Facilities

Vegetated Swales: Vegetated swales are constructed along drainage ways where storm water runoff is conveyed. Vegetation in swales and strips allows for the filtering of pollutants, and infiltration of runoff into groundwater. Densely vegetated swales can be designed to add visual interest to a site or to screen unsightly views. They reduce runoff velocities, which allow sediment and other pollutants to settle out.

The effectiveness of vegetated swales depends on slopes of swales, soil permeability, grass cover density, contact time of storm water runoff and intensity of storm events. In general, swales can be used to serve areas of less than 10 acres, with slopes no greater than 5 percent (CASQA 2003a).

Construction of swales begins with site clearing, grubbing, excavation, leveling and tilling, thereafter followed with seeding and vegetation planting. The cost of developing a swale unit (e.g., 0.5 acre) was estimated in the range of $6,400 to $17,100 in 1991 dollars (CASQA 2003a). According to a recent report by the City of San Diego (2011), the unit construction cost for vegetated swales can be as high as $4.32 per square root. Routine maintenance activities include keeping up the hydraulic and removal efficiency of the channel, periodic mowing, weed control, watering, reseeding and clearing of debris and blockages for a dense, healthy grass cover.

Little data is available to estimate the difference in cost between various swale designs; however, with considerations of inflation rate to bring the monetary value to current, and the vast areas to be treated, the unit price of constructing a vegetated swale is assumed to be ~~$15,000~~ in the range of $13,700 to $94,100 dollars each. With the assumption that each vegetated swale unit can treat a drainage area of 5 acres, approximately

3,956 units of vegetated swales would be required to treat the 19,780 acres of impervious surfaces in these three watershed areas, which results in the overall cost of ~~$59.34~~ $54.20 million to $372.26 million. Amortized with interest rate of 6% annually and into 20 years based on the implementation schedule, and with the average annual maintenance rate of 5%, the total annual cost is ~~$5.43 million~~ in the range between $4.97 million and $34.08 million.

Maintenance costs derive primarily of mowing since all operation and maintenance is related to vegetation management requiring no special training. In addition, it is important to note that the special attention to the presence of gophers is a factor that can make operations and maintenance cumbersome.

Table H3-2. Summary of Estimated Cost for Vegetative Swales

Items	Unit Cost	Total Cost
Construction	~~$15,000~~ $13,700 to $94,100 per unit swale for each 5-acre drainage area	~~$59~~$54.20 million to $372.26 ~~million~~ ~~$5.17~~$4.73 million to $32.46 million annually if amortized with an interest rate of 6% for 20 years.
Maintenance	5 percent of construction cost annually	~~$260,000~~ $0.24 million to $1.62 million annually
Total Cost		~~$5.43~~ $4.97 million to $34.08 million annually

Bioretention Systems: Bioretention systems, or rain gardens, are landscaping features adapted to provide on-site treatment of stormwater runoff. They are generally applied to small sites and in a highly urbanized setting. These facilities function as soil and plant-based filtration devices that remove pollutants through a variety of physical, biological, and chemical treatment processes. A bioretention system normally consist of a grass buffer strip, sand bed, ponding area, organic layer or mulch layer, planting soil, and plants. In comparison with the performances of other BMPs such as vegetated swales and sand filters, bioretention systems are featured with high pollutant removal efficiencies with respect to the removal of total suspended solids and phosphorous (Weiss et al. 2005).

~~Based on a report by Weiss et al. (2005), the construction costs associated with bioretention systems range between 3.5 and 10.5 dollars per cubic feet of treatment volume. Adjusted to 2012 dollars and considering the vast areas to be treated, a typical bioretention unit (e.g., 50' x 25' x 4' in depth, with a maximum ponding depth of 15 inches) that can treat approximately 3,063 ft^3 of storm water runoff is assumed to cost $19,000 each.~~Based on reported unit construction costs of $12.7 to $73.1 dollars per

square foot (2013 dollars, CASQA 2003a, City of San Diego 2011), the construction of a typical bioretention unit (e.g., 50' x 25' x 4' in depth, with a maximum ponding depth of 15 inches) that can treat approximately 3,063 ft^3 of storm water runoff is estimated to cost $15,875 to $91,375 dollars each. Designing for the 24hr-85th percentile storm, which ranges from 0.55 to 0.70 inches in the three watershed areas with an average of 0.63 inches (County of San Diego 2003), and assuming 95 percent of the precipitation would become run off, treatment of runoffs from the impervious areas in the three watersheds would require approximately 14,030 bioretention units, which would result in the overall construction cost of ~~$266.57~~ $233.08 million to 1.28 billion. Amortized with interest rate of 6 percent annually and into 20 years based on the implementation schedule, and using a maximum maintenance rate of 5 percent, the total annual cost would be approximately $24.40 million.

The primary maintenance requirement for bioretention areas is that of inspection and repair or replacement of the treatment area's components. Generally, this involves nothing more than the routine periodic maintenance that is required of any landscaped area. Maintenance costs for a bioretention facility will be comparable to those of typical landscaping required for a site. Costs beyond the normal landscaping fees will include the cost for testing the soils and may include costs for a sand bed and planting soil. According to the U.S. EPA's report (1999), the maintenance cost is assumed to be 5 percent of the annual construction cost.

Table H3-3. Summary of Estimated Cost for Bioretention Systems

Items	Unit Cost	Total Cost
Construction	~~$19,000~~ $15,875 to $91,375 per unit bioretention system for treating approximately 3,063 ft^3 of storm water	~~$267~~$233.08 million to 1.28 billion ~~$23~~ $20.32 million to 111.60 million annually if amortized with an interest rate of 6% for 20 years.
Maintenance	5 percent of construction cost annually	$1 million to $5.58 million annually
Total Cost		~~$24~~$21.32 million to 117.18 million annually

Surface Erosion Controls

Straw fiber rolls: Straw fiber rolls are tube shaped erosion control devices that are most effective in low shear stress areas. Straw fiber rolls are especially useful in preventing surface erosion as they complement best management practices aimed at source control and vegetation.

Material costs for fiber rolls range from $20 to $30 per 25-foot roll (CASQA 2003b). Labor costs vary, however they should be factored in for the installation, maintenance, and short-term maintenance. The maintenance requirements of fiber rolls are minimal, but short-term inspection is recommended to ensure that the rolls remain firmly anchored in place and are not crushed or damaged by equipment traffic. There is no labor costs associated with removing these devices as they are biodegradable.

Slope Stabilization, Geotextile covers/mats: Geotextiles are porous fabrics that protect ground surfaces susceptible to storm water and wind erosion erosion. These devices also increase stability by allowing for more vegetation growth as they hold in place fertilizers, seeds, and top soil. The effectiveness of geotextile covers is dependent upon the material they are made out of; therefore, the fabric should match the purpose.

The costs of using geotextiles range between $0.50 and $4.50 per square yard, depending on the type used (CASQA 2003b). Operations and maintenance cost derive from labor associated with regular inspection to determine the existence of cracks, tears, or breaches in the fabric.

Bypass Channels and/or Dissipaters

Storm Drain Repair and Replacement: Repairing and replacing existing storm drain systems will allow the existing controls to properly function, thus minimizing and/or eliminating erosion below storm drain outfalls. Such projects may include replacement of existing pipes and work on existing drainage easements. Repair and replacement projects can be done gradually at a minimal impact to residents in the area. The 7017 Keighley Court Storm Drain Repair Project in the City of San Diego is estimated to cost $277,714 (City of San Diego 2012a). Similarly, the Wenrich Drive Storm Drain Repair Project costs roughly $213,150 (City of San Diego 2012b).

Low Impact Development

Low Impact Development (LID) emphasizes conservation and use of on-site natural features to protect water quality. LID can significantly increase the protection of water quality through the implementation of engineered small-scale hydrologic controls that replicate the pre-development hydrologic regime of watersheds through infiltrating, filtering, storing, evaporating, and detaining runoff close to its source. Hazards associated with storm water runoff, such as increased sedimentation and the pollution of water bodies can greatly be decreased through the implementation of LID techniques in both new and redesigned developments. Provided below are a number of various methods to aid in the reduction of hazardous storm water runoff into San Diego's regional water bodies.

Cisterns and rain barrels are LID techniques used to harvest, store, and release rain water from a roof downspout into the soil. This technique is useful in areas covered primarily with impervious surfaces. Rain barrels are used for smaller residential environments and cisterns for large scale commercial and industrial developments. The cost of a rain barrel is approximately $216 for a single residential lot. The cost of cistern

can range from $160 for a 165-gallon polyethylene tank to $10,000 for a 5,000-gallon fiberglass/steel composite tank (LIDC 2007).

Vegetated roofs are an effective LID technique that provides storm water runoff control, air quality improvement, increased energy efficiency, urban heat island reduction, and improved aesthetics. A vegetated roof system uses foliage and a light weight soil mixture to absorb, filter, and detain rainfall. Installation of a vegetated roof cost between $10-16 per square foot (U.S. EPA 2000).

Permeable pavement design consists of a porous surface with an underlying stone reservoir to temporarily hold surface water runoff before it enters the subsoil. This increases groundwater infiltration and decreases storm water runoff into surrounding water bodies. The strength of this LID techniques lies within its ability to balance both increased runoff infiltration and beneficial uses such as walking and/or driving. Porous concrete can range from $2.00 to $6.00 per square foot and various pavers can range from $1.00 to $10.00 per square foot, with grass and gravel pavers making up the lower range and concrete and stone pavers making up the higher range (PATH 2008). Because of differences in surface texture and the importance for flow path through the surface, maintenance of permeable pavements is critical to their effectiveness. Cleaning by vacuum sweeping and pressure washing is generally recommended several times a year, depending on usage and traffic. With more traffic, the maintenance must increase (PATH 2008).

Non-Structural BMPs

Street Sweeping: Street sweeping uses mechanical pavement cleaning practices to minimize pollutant transport to receiving water bodies. Sediment, debris, and gross particulate matter are the targeted pollutants, but removal of other pollutants can be accomplished as well. Street sweeping may also prevent pipes and outlet structures in storm water detention facilities from becoming clogged with debris and trash. The largest expenditures for street sweeping programs are in staffing and equipment. The capital cost for a street sweeper is approximately $60,000 for a mechanical street sweeper and $150,000 for a vacuum-assisted street sweeper. The average useful life of a sweeper is about four to eight years. Operation and maintenance costs for street sweeper were estimated at $30/curb mile for mechanical street sweepers and $15/curb mile for vacuum-assisted street sweepers (U.S. EPA 1999).

Most community public works or transportation departments have already implemented regular street sweeping practices for the general maintenance of roads, streets and bridges or for projects of special needs . As an example, in order to meet the TMDL requirements for bacteria, the City of San Diego has implemented street sweeping practices in the Chollas Creek watershed since 2007; the capital cost associated with this implementation for the period of 2008 to 2011 were estimated to vary between $588,000 and $777,000, with the operation and maintenance costs ranging between $6,000 and $21,000 (City of San Diego 2007). Therefore, most costs of the street sweeping operations associated with this Basin Plan amendment will be likely due to

the increased frequencies of sweeping operations that will likely be required as a result of this Basin Plan amendment. According to the report by U.S. EPA (1999), increasing the sweeping frequencies from monthly to bi-weekly would likely increase the operation cost by 117 percent.

Sediment Dredging and Capping

Dredging contaminated sediments and capping the dredged areas at the floor of San Diego Bay directly contributes to the reduction of the mass and volume of toxic chemicals in the Bay, thereby decreasing toxic risks to the aquatic ecosystem from exposure to contaminants and improving fish and wildlife habitat in the Bay.

The following information about sediment cleanup projects within the San Diego Bay and their associated costs was obtained to facilitate the cost estimation for the potential dredging and capping projects associated with this Basin Plan amendment:

- Cleanup actions at the former Campbell shipyard included the excavation and off-site disposal of 35,000 yd^3 of contaminated sediments and the installation of a 9.2-acre engineered cap and a 1.6-acre eelgrass cap; the total cost of these cleanup actions was estimated to be approximately $16 million (RWQCB 2004), which would be 19.47 million dollars in 2012, and the unit cost for cleaning up one cubic yard of sediment would be $556.29;
- Cleanup actions at the Shipyard Sediment Cleanup Project would include the excavation and off-site disposal of approximately 171,500 yd^3 of contaminated sediments, and placing of sand cover on about half of the dredged area as well as the underpier areas; the total cost of these cleanup actions is estimated to be $58 million (RWQCB 2012), and the unit cost for cleaning up one cubic yard of sediment would be $338.19.

Based on above information, the unit cost for sediment cleanup is estimated to be an average of $447.24 per cubic yard for dredging and capping operations associated with this Basin Plan amendment. Further, based on a conservative estimation that the volume of sediments to be removed as a result of this Basin Plan amendment would be the same as that from the Shipyard Sediment Cleanup Project (i.e., 171,500 yd^3), the total cost of sediment dredging from the mouth areas of the three creeks would be approximately $76.70 million. Amortized with interest rate of 6% annually and into eight years based on the implementation schedule, the annual cost is $12.35 million.

Overall Cost Comparison

The following table summarizes the estimated total costs as results of implementing this TMDL (Table H3-4)**.** The overall project costs arising from dredging and capping operations in San Diego Bay and pollutant loading reduction in storm water, using the upper ranges of BMP construction costs in the estimation, could be in a range of ~~$95.82 million to~~ ~~$313.41 million.~~467.59 million to 1.42 billion.

Table H3-4. Cost Summary for Potential Implementation Alternatives of the Basin Plan Amendment

Implementation Alternatives	Sediment Dredging and Vegetative Swales		Sediment Dredging and Bioretention Systems	
Total Project Cost (Upper Cost Range)	$~~139~~467.59 million		$~~357~~1.42 billion ~~million~~	
Amortized Annual Cost (Upper Cost Range)	Years 1 to 8	$~~18~~46.43 million	Years 1 to 8	$~~36~~129.53 million
	Years 9 to 20	$~~5~~34.08 million	Years 9 to 20	$~~24~~117.18 million

H4. Reasonable Alternatives to the Proposed Activity

The environmental analysis must include an analysis of reasonable alternatives to the proposed project.[64] The proposed project is a Basin Plan amendment to incorporate mass-based TMDLs for chlordane, total PAHs, and total PCBs in Paleta, Chollas, and Switzer Creek watersheds and concentration-based TMDLs. The purpose of this analysis is to determine if there are one or more alternatives that would feasibly attain the basic objective of the rule or regulation (the proposed project), but would lessen, avoid, or eliminate any identified impacts. These alternatives are discussed in the subsections below.

H4.1 Alternative 1 – San Diego Water Board TMDL With 20-Year Compliance Schedule

This program alternative is based on the TMDL project that is presently proposed for San Diego Water Board consideration. The proposed TMDL project focuses on the reduction of toxic pollutants in sediments of Paleta, Chollas, and Switzer Creek mouths in San Diego Bay. The WLAs and LAs, as well as compliance schedules, are established through the Basin Plan amendment. The WLAs focus on reductions in sources of organic pollutants from municipal storm drains and discharges associated with regional, state, and federal discharge permittees. Based on the San Diego Water Board's past experiences, the compliance schedule of 20 years is selected which will likely provide the discharge permittees with adequate time and flexibility to acquire necessary funding resources, evaluate and select the means of compliance that would improve water quality in the most cost-effective manner, and plan and coordinate actions to implement the selected compliance methods. The WLAs and the implementation schedule, once incorporated into the Basin Plan, will be considered by

[64] 23 CCR section 3777(b)(3)

NPDES permit writers when developing permit limits that are adopted in separate actions by the San Diego and State Water Boards.

Foreseeable environmental impacts from reasonably foreseeable methods of compliance, as discussed in Section H3.1, are well-known and explored throughout the contents of this document. Potential adverse impacts to the environment stem principally from the installation, operation, and maintenance of these structural and non-structural BMPs and sediment remediation activities. This document analyzes these impacts and concludes that implementation projects are relatively short duration and/or typical of "baseline" construction and maintenance projects that occur presently in the TMDL area. It also concludes that the benefits of the program outweigh any potentially significant adverse environmental effects.

H4.2 Alternative 2 – San Diego Water Board TMDL With 10-Year Compliance Schedule

With the other components as discussed in the above alternative remaining unchanged, this alternative calls for an aggressive 10-year compliance schedule for dischargers to implement structural and non-structural BMPs and conduct sediment dredging/capping to reduce loading of PCBs, PAHs, and Chlordane. This compliance schedule has the environmental advantage of restoring the water quality in San Diego Bay in a relatively short time frame, but may not provide enough time for dischargers to integrate BMP planning, design, and implementation in the most cost-effective manner; and/or budget, coordinate, and carry out sediment dredging and capping activities with the attainment of remedial objectives in time. Additionally, this alternative will not help reducing the temporary cumulative impacts of this Basin Plan amendment to many environmental categories, including and not limited to, air quality, aesthetics, noise, traffic, and biological resources.

The cost-effective approach for the design and implementation of BMPs, especially the lower-impact ones, at the regional level normally involves an iterative process of implementation, assessment, and further implementation or improvement. This iterative process is time-consuming and may require more than 10 years according to a study funded by the City of San Diego (2006), but would most likely succeed in reaching the objectives of this Basin Plan amendment under the likely constraints of limited funding sources, as almost all dischargers are facing under the current economic conditions. Additionally, based on the San Diego Water Board's experience with historical remedial dredging/capping projects and taking into consideration of the number of dischargers involved, the needs to perform pre- and post-dredging water quality monitoring and assessment, and the time schedules to obtain relevant permits and conduct project-specific environmental reviews, it is likely that 10 years are barely enough to complete the sediment dredging/capping projects with attainments of their cleanup objectives. Finally as discussed in Section H5.1, the short-term cumulative impacts to many environmental categories are more noticeable if multiple projects in close vicinity of each other take place at the same time. As a result, coordinated scheduling is a key

mitigation measure to reduce the cumulative impacts to the public and the environment from potential BMP implementations and sediment dredging/capping operations associated to this Basin Plan amendment. A relatively short compliance schedule of 10 years would likely limit the discharger's abilities to coordinate and schedule multiple projects to effectively reduce their cumulative impacts.

H4.3 Alternative 3 – No Action

This program alternative assumes that neither the U.S. EPA nor the San Diego Water Board adopts or implements TMDLs for toxic pollutants in sediment TMDLs for the mouths of Paleta, Chollas, and Switzer Creeks. While responsible parties could implement BMPs on a discretionary basis, this CEQA analysis is based on the assumption that no additional pollutant reduction BMPs would be implemented in addition to those that are presently in place. Additionally, only maintenance dredging would already be routinely occurring for operational purposes, and that sediment remediation of the impaired sites would not occur.

Alternative 3 is contrary to federal and state law. While impacts to the environment from construction or maintenance of structural BMPs, dredging, and/or capping would be avoided in this alternative, failure to implement a TMDL would not restore beneficial uses in these creek mouths of San Diego Bay due to the presence of contaminated and toxic sediment. While some improvement might be seen over time through natural attenuation, and or implementation of improved BMPs by NPDES dischargers, in comparison, either Alternative 1 or 2 will restore beneficial uses and attain water quality standards by reducing sediment loads and removing or isolating contaminated sediment from the environment, thus representing a benefit to the environment, while Alternative 3 will result in a continued sediment impairment of the San Diego Bay.

H4.4 Preferred Alternative

This environmental analysis finds that Alternative 1 is the most environmentally advantageous alternative.

Alternative 3 is not feasible because there is a legal requirement under the Clean Water Act to address the section 303(d) impairment listing. This alternative is assumed not to implement BMP projects or sediment remediation to reduce sediment loads, remove contaminated sediment, and restore beneficial uses in these creek mouths of San Diego Bay in a timely fashion, if at all. While Alternative 3 will avoid potential impacts due to discrete installation project, the water body impairments will continue.

Both Program Alternatives 1 and 2 will comply with the law, reduce sediment loads, remove contaminated sediment, and restore beneficial uses in these creek mouth areas at a comparatively small environmental cost through completion of the foreseeable compliance projects listed in Table H3-1, above. The key difference between these two program alternatives is the establishment of an implementation schedule. While the same WLAs and LAs will need to be met and the same technological choices will be

available by both alternatives, Alternative 1 will allow a measured implementation plan, resulting in full compliance in 20 years. Alternative 2 will require a more aggressive compliance schedule of 10 years to meet water quality objectives. As previously discussed, the environmental impacts due to Alternative 2 may be of greater severity as the intensity of implementation actions will be greater to comply with the shorter time frame. The longer schedule of Alternative 1 allows for prioritization and planning, more thoroughly mitigated impacts, more appropriately designed, sited and sized structural devices and, therefore, less environmental impact in general. In addition, prioritization and planning will likely result in more efficient use of funds and lower overall costs.

H5. Other Considerations

This section evaluates several other environmental considerations of reasonably foreseeable methods of complying with the Sediment TMDL, specifically: cumulative impacts of the proposed project,[65] potential growth-inducing effects of the proposed project,[66] and unavoidable significant impacts.[67]

H5.1 Cumulative Impacts

Cumulative impacts refer to two or more individual effects, that when considered together, are considerable or that increase other environmental impacts.[68] Cumulative impact assessment must consider not only the impacts of the proposed project, but also the impacts from other municipal and private past, present, and future projects, which would occur in the watershed.

In examining the potential for cumulatively considerable effects, possible incremental impacts to the public and the environment due to projects of this Basin Plan amendment together with the effects of other known projects in or near the Paleta, Chollas, and Switzer Creeks watersheds and creek mouth areas of San Diego Bay were considered. These know projects include water quality control projects (e.g., TMDL implementation plans and/ or urban runoff management plans), sediment dredging and capping projects, and other key projects that involve construction and earthmoving activities. The following past, present, and future projects were considered:

- Water Quality Control Projects:
  - Chollas Creek TMDLs for Diazinon
  - Chollas Creek TMDLs for Copper, Lead, and Zinc
  - Indicator Bacteria TMDLs
  - City of San Diego Urban Runoff Management Plan
  - City of San Diego Master Storm Water System Maintenance Program

[65] 14 CCR section 15130
[66] 14 CCR section 15126.2(d)
[67] 14 CCR section 15126.2(b)
[68] As defined in 14 CCR section 15355

- ❖ Sediment Dredging and Capping Projects:
  - Convair Lagoon Sediment Capping Project
  - Former Campbell Shipyard Sediment Cleanup Project
  - Shipyard Sediment Remediation Project
  - Other Maintenance and Environmental Dredging Projects at San Diego Bay

- ❖ Other Construction and Earthmoving Activities:

  Upper Inland
  - Chevron University Avenue, City of San Diego (demolition of an existing building and construction of a convenience store for an existing gas station)
  - Wightman Street Neighborhood Park, City of San Diego
  - University Avenue Mobility Plan, City of San Diego
  - Winnett Homes, City of San Diego
  - Lemon Grove Middle School Modernization and Library Addition
  - San Diego State University 2007 Campus Master Plan Revision and Addendum

  Close to San Diego Bay
  - North Embarcadero Visionary Plan
  - San Diego Convention Center Expansion
  - Chula Vista Bayfront Master Plan
  - Ruocco Park
  - Lane Field
  - Old Police Headquarters (OPH) and Park Project
  - Commercial Fisheries Revitalization Plan

<u>Cumulative Impacts Related to BMP Implementation</u>

Past and present general construction (development and maintenance) has brought the three watershed areas of Paleta, Chollas, and Switzer Creeks from a natural, pristine condition, to the urban, developed setting which is present today. This provides a baseline level of construction with which to compare all projects that involve construction and earthmoving activities. The potential implementation projects that include the installation of structural BMPs could require minor construction and earthmoving activities at the same level that is typical of municipal construction projects, including those listed above under “Other Construction and Earthmoving Activities.” Therefore, like any other construction projects, projects of structural BMP installation and maintenance have the potential to contribute to cumulative impacts on categories of air quality, traffic, and noise, especially during the construction phase. The cumulative impact would be more noticeable when the installation of BMPs is carried out at the same time as, and in the vicinity of, any “other construction and earthmoving activities” listed above. However, considering that the structural BMP installation and maintenance projects generally tend to be small in scale and relatively short in duration, the incremental impacts of these BMP implementation projects to those environmental

categories are expected to be of short-term and not cumulatively considerable. Implementation of non-structural BMPs such as street sweeping is not expected to have cumulative impacts at significant levels to the environment and the public.

The installation and implementation of structural and nonstructural BMPs is a common feature shared by most of the "Water Quality Control Projects" listed above as well as this Basin Plan amendment. Like the other "Water Quality Control Projects," BMP implementation associated with this Basin Plan amendment may contribute to the impacts on certain areas of the environment and the public, such as biological resources and water quality.

The effects of each water quality control project, including this Basin Plan amendment, will not be cumulative because they are not directly additive at all times. For example, whereas several water quality control projects may target the elimination of nuisance flows, once flows are reduced for any project, other projects won't result in further reductions. For another instance, many treatment BMPs are able to simultaneously treat multiple contaminants, e.g., metals and chlordane. With thorough evaluation of site-specific conditions as well as appropriate design, one BMP treatment facility may serve the purposes of more than one water quality control project. In the cases where incremental effects occur more directly from the implementation of this Basin Plan amendment, for example, where increased street sweeping frequencies are used to achieve compliance with the TMDL requirements of this Basin Plan amendment, the impacts would likely be short-term and not cumulatively significant. Further, the City of San Diego funded an assessment of BMP strategies that would lessen the anticipated impacts and allow an integrated TMDL strategy that addresses both current and anticipated TMDLs. In this study, Weston Solutions, Inc. (2006) recommended a strategy that used a tiered approach that reduces the impact to the environment and allows for more cost effective implementation of lower-impact BMPs. The tiered approach consists of three major components:

- Tier 1 – Control Pollutants at the Source and Prevent Pollutants from Entering Runoff
- Tier 2 – Conduct Design Studies and Implement Aggressive Street Sweeping and Runoff and Treatment Volume Reduction BMPs
- Tier 3 – Infrastructure Intensive Treatment BMPs

Implementation of this BMP strategy, because it emphasizes BMPs with the least adverse impacts to the environment, should reduce cumulative impacts to less than significant levels.

As analyzed above, the installation and implementation of structural and nonstructural BMPs associated with this Basin Plan amendment could have short-term cumulative effects with respect to traffic, noise, and air quality; however, these effects are not cumulatively significant and can be reduced through proper construction scheduling. In

addition, these effects are not cumulatively considerable in the long-term because the effects will cease with the completion of construction. Further, implementing appropriate BMP strategies that focus on BMPs with the least environmental impacts would reduce cumulative impacts to less than significant levels.

Cumulative Impact Related to Sediment Dredging and Capping

Considering the processes involved in sediment dredging/capping as well as drying operations, it has been estimated that the most likely environmental categories to which those operations have potential to contribute to cumulative impacts are air quality, biological resources, hazardous material, water quality, noise, and traffic.

The "Other Construction and Earthmoving Activities" that would occur close to San Diego Bay, as listed above, would also likely contribute to the cumulative impacts on noise and traffic. The cumulative impacts on these two environmental aspects are more pronounced if multiple projects that are located close to each other take place concurrently. Most of the "Other Construction and Earthmoving Activities" discussed above are located onshore, and are not within 1000 feet from the three creek mouth areas to be addressed by this Basin Plan amendment. The locations of drying stages are not known at this time but may be close to some other construction sites. However, the dredging/capping projects associated with this Basin Plan amendment would be short-term and small in scale as compared to Bay as a whole, and so the cumulative impacts, if any, would not likely be considerable or long-term. Additionally, with appropriate mitigation measures, such as scheduling, advanced planning, and careful selection of hauling routes, cumulative impacts on noise and traffic could be reduced to less than significant levels. This mitigation strategy is also applicable to reducing cumulative impacts from other Sediment Dredging and Capping Projects.

Both Convair Lagoon Sediment Capping Project and Former Campbell Shipyard Sediment Cleanup Project are completed projects. No adverse impacts to the public and the environment have been reported from these projects. The Shipyard Sediment Remediation Project will likely take place sometime in the coming years. Additionally, regularly scheduled maintenance dredging projects may occur in San Diego Bay over the next several years.

It has been estimated that approximately 143,400 yd^3 of material will be dredged in the coming Shipyard Sediment Remediation Project. According to the San Diego Water Board's maintenance and environmental dredging records for the 11-year period from 1994 to 2005, an average of approximately 245,000 yd^3 of material was dredged from San Diego Bay each year, with yearly totals ranging from 0 to 763,000 yd^3. While the dredge volume associated with this Basin Plan amendment (approximately 225,000 yd^3) represents a significant dredge volume, the overall volume of dredging activities in San Diego Bay is expected to be within these historical ranges and will not lead to significant cumulative impacts to aspects of biological resources, hazardous material, and water quality. Additionally, mitigation measures are available to reduce the cumulative impacts to levels of less than significant. For instances, each dredging project must

comply with NPDES permit requirements and include best management practices (e.g., methods and actions to prevent accidental oil or fuel spill, minimize re-suspension of sediments, and handle and transport excavated sediments and other wastes as appropriate, etc.) to avoid any adverse impacts to the water quality and the environment. A coordinated water quality monitoring effort and/or the sharing of water quality monitoring data among projects will help best schedule these sediment dredging projects to minimize temporary project overlap and reduce their cumulative impacts. In particular, proper scheduling to minimize temporary project overlap would help to reduce the cumulative impacts to biological resources with respect to the disturbance of roosting, nesting, and foraging habitats for animals at the work areas, including those of California least tern.

Temporary emissions from sediment dredging/capping operations associated with this Basin Plan amendment may be generated at the same time as emissions from other projects in proximity to the operations of concern and produce emissions such that the AQIA trigger levels are exceeded. While no specific projects can be identified in the vicinity at this time, future growth and construction is possible. The temporary cumulative impact could be considered significant. Mitigation measures, such as scheduling in particular, may help to reduce the cumulative impacts. However, since the San Diego Air Basin is currently in nonattainment with respect to O_3, projects that involve NO_x (which is a precursor to O_3) emission from heavy equipment such as a crane barge and tug and survey boats may temporarily exacerbate the impacts on air quality. The long-term impact on air quality due to sediment dredging/capping operations associated with this Basin Plan amendment is not considered cumulatively significant, as the operations will be temporary, and would not create any traffic once the project is completed.

As analyzed above, the sediment dredging and capping projects associated with this Basin Plan amendment would not contribute to considerable cumulative impacts to the public and environment in the long-term. However, temporary cumulative impacts to air quality would likely be significant, especially under the conditions that other possible projects in the vicinity of the projects of concern take place at the same time.

H5.2 Growth-Inducing Impacts

CEQA Guidelines require that the environmental analysis includes a discussion of the ways in which a proposed project could foster economic or population growth, or the construction of additional housing, either directly or indirectly, in the surrounding environment. The assessment should include whether there are impacts which would remove obstacles to population growth. Increases in the population may tax existing community service facilities, requiring construction of new facilities that could cause significant environmental effects. In addition, the analysis should consider whether the characteristics of a project may encourage and facilitate other activities that could significantly affect the environment, either individually or cumulatively. It should be noted that it is not required that an assumption be made about whether that growth in

any area is necessarily beneficial, detrimental, or of little significance to the environment.[69]

Considering that most areas in the three watersheds of Switzer, Chollas, and Paleta creeks are highly developed, there are substantial limitations on available land space for development. It is unlikely that the Basin Plan amendment would foster population growth, either directly or indirectly. Furthermore, the Basin Plan amendment does not propose a physical or regulatory change that would result in the construction of new public facilities, such as water or wastewater treatment facilities that would remove obstacles to population growth. The storm water treatment BMPs are in-line systems that would not result in the need for additional facilities that could result in population growth that could significantly affect the environment, either individually or cumulatively.

It is likely that new jobs created by the sediment remediation activity would be filled by existing residents, limiting the potential for growth-inducing effects of the project. Jobs created by the proposed project would be limited to short-term design, engineering, and construction-related jobs and jobs associated with the operation of barges, dredging equipment, treatment of sediment removed from the Bay, and transportation of the sediment to area landfills. These jobs would be temporary, lasting until the proposed project is completed.

Lastly, the sediment remediation activity would not change or augment allowed uses in the San Diego Bay as the Bay has already been committed to various uses in the existing condition including its function as a shipping channel. Therefore, the proposed project is not anticipated to substantially contribute to long-term economic growth in the region. The proposed project would not induce growth in the County of San Diego or removal obstacles to growth in the region.

H5.3 Unavoidable Significant Adverse Impacts

State law requires a discussion of the significant environmental effects and the significant environmental effects which cannot be avoided if the proposed project is implemented.[70] Reasonably foreseeable methods of compliance with the Basin Plan amendment may have adverse significant impacts to air quality, biological resources, and historical, archaeological, and paleontological resources.

Proposed projects resulting from this Basin Plan amendment would have a potentially significant impact on air quality. As discussed previously, the level of NO_x generated by potential implementation projects is anticipated to be less than significant. However, as a precursor to ozone, the produced NO_x will contribute to the existing nonattainment status for ozone in the San Diego Air Basin. If these temporary emissions are generated at the same time as emissions of concern, either from other proposed projects or reasonably foreseeable future projects within proximity relevant to the

[69] 14 CCR section 15126.2(d)
[70] 14 CCR section 15126.2(a) and (b)

pollutants of concern, also produce emissions such that the San Diego APCD trigger levels are exceeded the cumulative impact may be considered significant.

Potential implementation projects involving construction, earthmoving, and dredging/capping activities could have short-term impacts to birds, fish, marine mammals, and sea turtles. These types of activities will occur in the most urban and industrial areas of San Diego Bay, areas which are prone to similar and routine disturbances. Overall, the activities are short-term and the potential for impacts can be mitigated, as required by the San Diego Water Board or other permitting agency for specific projects.

Proposed projects that would occur as a result of the Basin Plan amendment that would have potentially significant impacts on historical, archaeological, and paleontological resources would be untaken at the discretion of lead agencies under their respective local and state regulatory framework. Project specific impacts and mitigation measures will be evaluated in environmental reviews specific to those projects. While potential significant impacts to historical, archaeological, and paleontological resources may be mitigated through this discretionary environmental review, specific mitigation measures for said projects are not available at the programmatic level, since specific projects are unknown at this time. Therefore, although likely avoidable and mitigable, potential impacts to historical, archaeological, and paleontological resources may be considered significant and unavoidable, for purposes of this analysis, in the event unknown or unanticipated resources are unearthed.

CEQA Guidelines also require a discussion of potential significant, irreversible environmental changes that could result from a proposed project.[71] Examples of such changes include commitment of future generations to similar uses, irreversible damage that may result from accidents associated with a project, or irretrievable commitments of resources. Resources (materials, labor, and energy) to implement TMDL-related projects do not represent a substantial irreversible commitment.

Furthermore, implementation of the requirements of the Basin Plan amendment is both necessary and beneficial. To the extent that the alternatives, mitigation measures, or both, that are examined in this SED are not deemed feasible by the municipalities and agencies complying with the requirements of the Basin Plan amendment, the necessity of implementing the federally-required TMDLs and removing the significant environmental effects from contaminated sediment impairment in the San Diego Bay (actions required to achieve the express, national policy of the Clean Water Act) remains. In addition, implementation of the Basin Plan amendment requirements will have substantial benefits to water quality and will enhance beneficial uses. Enhancement of the estuarine and marine beneficial uses will have positive social and economic effects by improving the quality of the environment for both aesthetic enjoyment and biological utility.

[71] 14 CCR section 15126.2(c)

H6. Findings and Statement of Overriding Considerations

The proposed Basin Plan amendment would result in potentially significant impacts to air quality, biological resources, and cultural resources through reasonably anticipated methods of compliance. Additionally, the reasonably anticipated methods of compliance that will result from the proposed Basin Plan amendment would result in potentially significant impacts from hazardous materials and increased traffic in the local surrounding area. However, potentially significant impacts will be lessened in significance by incorporating mitigation. Considering that the current ambient air quality in San Diego Air Basin is in nonattainment with ozone, the generation of NO_x (a precursor to ozone) from the potential sediment dredging/capping projects, though not in significant amount, would still likely temporarily exacerbate the ambient air quality, even after the implementation of feasible standard conditions and mitigation measures. Additionally, impacts on biological resources, either directly or through habitat modifications, will be potentially significant; however, mitigation measures exist which can reduce such impacts. Although it is also likely that potential impacts on cultural and paleontological resources will be avoided and/or mitigated, the San Diego Water Board cannot, by its own authority, ensure that mitigation measures will be implemented by other responsible parties. Therefore, potentially significant impacts may occur and must be considered, for this programmatic evaluation, significant and unavoidable.

Temporary emissions from the potential implementation projects that include minor construction, earthmoving, dredging, or capping activities associated with this Basin Plan amendment will contribute to the existing non-attainment status of air quality for ozone. This impact will only be of short term, and will cease with the completion of the project. Compliance with the San Diego APCD Rules and additional practices, such as properly maintaining equipment, turning off equipment promptly when not in use, utilizing alternate fuel construction equipment (i.e., compressed natural gas, liquid petroleum gas, and unleaded gasoline), or utilizing low NO_x diesel fuel, can be used to effectively minimize short-term air pollutant emissions. Implementation of these mitigation measures are within the jurisdiction of the responsible parties.[72] These parties have the ability to implement these mitigation measures, can and should implement these mitigation measures, and are required under CEQA to implement mitigation measures unless mitigation measures are deemed infeasible through specific considerations.[73]

Direct and indirect impacts to biological resources will include disturbance of foraging areas for special status birds and marine animals from increases in noise, turbidity, and turbidity-associated toxicant concentrations in water column. Additionally, removal of benthic communities that live in the sediment that would be dredged will temporarily impact potential foraging habitat of the federally endangered East Pacific green sea turtle. Impacts will be of short term and will cease with the completion of the project. Notably, in almost all circumstances, where unavoidable or immitigable impacts would

[72] 14 CCR section 15091(a)(2)
[73] 14 CCR section 15091(a)(3)

present unacceptable hardship upon nearby receptors or venues, the local agencies have a variety of alternative implementation measures available, which include incorporating design features which contain or reduce impacts and scheduling the project to avoid sensitive receptors. Implementation of these mitigation measures are within the jurisdiction of the responsible parties. These parties have the ability to implement these mitigation measures, can and should implement these mitigation measures, and are required under CEQA to implement mitigation measures unless mitigation measures are deemed infeasible through specific considerations. Where any subsequent project requires approval by the San Diego Water Board, the San Diego Water Board will include sufficient mitigation measures to substantially lessen the potentially significant adverse impacts.

Potential implementation projects that include minor construction and earthmoving will have adverse significant impacts to historical, archaeological, and paleontological resources. However, a regulatory framework of state and local laws contains requirements which would mitigate environmental impacts to less than significant levels. Reasonably foreseeable methods of compliance will be implemented by responsible jurisdictions and would therefore be subject to a separate, project-level environmental review. The lead agencies for the reasonable foreseeable methods of compliance projects have the ability to mitigate project impacts, can and should mitigate project impacts, and are required under CEQA to mitigate any environmental impacts they identify, unless they have reason not to do so. The San Diego Water Board fully expects responsible agencies to implement mitigation measures when carrying out reasonably anticipated methods of compliance that will reduce impacts to less than significant.

Potential dredging and capping activities would involve the transport and disposal of excavated and dewatered contaminated sediments, which will pose risks to the public and sensitive receptors from accidental spillage of hazardous materials in sediment as well as impacting the traffic and circulation resulting from increased truck trips. Large equipment used in dredging and capping operations also has the potential to spill oil and fuel into the environment and dredging and capping activities themselves have the potential to re-suspend contaminated sediments affecting water quality in the Bay. A variety of standard mitigation measures and practices are available which can minimize the potential of accidental spills during waste transport and directly from construction activities, as described in the above analysis. Temporary water quality effects from the dredging can be mitigated through the deployment of silt curtains and the employment of small cutterhead dredges designed for minimizing sediment disturbance. Short-term traffic impacts can be mitigated by selecting alternate routes and scheduling to avoid high traffic volume times. Through its permitting authority and CEQA responsibility the San Diego Water Board will require that appropriate prevention and mitigation measures will be included in proposed dredging projects to avoid or substantially lessen the potential of accidental sediment, oil, and fuel spillage, water quality impacts from contaminated sediment re-suspension, and traffic impacts.

All of the potential impacts must be mitigated at the subsequent, project level because they involve specific sites and designs not specified or specifically required by the Basin Plan amendment to implement the TMDL. At this stage, any more particularized conclusions would be speculative. However, in some cases, the San Diego Water Board can exercise its permit authority and CEQA responsibility to ensure that a project is designed consistently with standard industry practices, or that routine and ordinary mitigation measures be employed. Ultimately, implementation of mitigation measures are within the jurisdiction and authority of the parties that will be responsible for implementing the requirements associated with the TMDLs, and those parties can and should employ those alternative means of compliance and mitigation measures that reduce any impacts as much as feasible. The San Diego Water Board fully expects that those implementing parties will implement mitigation measures which will avoid or substantially lessen significant environmental effects.

The implementation of this Basin Plan amendment will result in improved water quality in the waters of the region and will have significant positive impacts to the environment (including restoration and enhancement of beneficial uses) and the economy over the long term. Reduction of toxicant loadings in San Diego Bay will help to restore and enhance water quality in the Bay, decrease toxic risks to the aquatic ecosystem from exposure to contaminants, and improve fish and wildlife habitat in the Bay. A healthy San Diego Bay with vivid ecosystem is an indispensable element to the wellbeing of local residents and the prosperity of local economy, including tourism. The implementation of the Basin Plan amendment will also restore and protect the Paleta, Chollas, and Switzer Creek mouths for use and enjoyment by the people of the state. In particular, the removal from bay water of contaminants that are toxic to and bioaccumulate in organisms decreases the health hazards at all levels as the contaminants travel along and up through the food chain. In all, enhancement of the estuarine and marine beneficial uses will have positive social and economic effects by improving the quality of the environment for human health protection, aesthetic enjoyment, and biological utility.

Implementation of the TMDL requirements is both necessary and beneficial. To the extent that mitigation measures that are examined in this analysis are not deemed feasible by responsible agencies, the necessity of implementing a federally required TMDL and removing the impairment from these creek mouths in San Diego Bay (an action required to achieve the express, national policy of the Clean Water Act) remains.

To the extent that future reasonably foreseeable projects to implement this Basin Plan amendment do not avoid or fully mitigate potential impacts, and this decision does not fully mitigate the adverse effects of those reasonably foreseeable projects, as discussed in greater detail above, the San Diego Water Board finds that overriding considerations of the greater public interest requires this action.

The San Diego Water Board staff has balanced the economic, legal, social, and environmental benefits of this proposed Basin Plan amendment to adopt chlordane, PAHs, and PCBs TMDLs and implementation requirements for the Paleta, Chollas, and Switzer Creek watersheds and creek mouth areas in San Diego Bay against the unavoidable environmental risks in determining whether to recommend that the San Diego Water Board approves this project. Upon review of the environmental information generated for this project and in view of the entire record supporting the need for adoption of toxic pollutant TMDLs in these water bodies, staff has determined that the specific economic, legal, social, and environmental benefits of these proposed TMDLs outweigh any unavoidable adverse environmental effects, and that such adverse environmental effects are acceptable under the circumstances. Implementation of the Basin Plan amendment is in the greater region-wide public interest.

H7. References

Airport Land Use Commission (ALUC). 2004. Airport Land Use Compatibility Plan for San Diego International Airport. Airport Land Use Commission, San Diego County, CA. Adopted in February 28, 1992 and amended in October 4, 2004.

Anderson, B., P. Nicely, B. Phillips, and J. Hunt. 2004. Sediment Quality Assessment Study at the B Street/Broadway Piers, Downtown Anchorage, and Switzer Creek, San Diego Bay, Phase I Final Report. Marine Pollution Studies Laboratory, University of California – Davis in cooperation with San Diego Regional Water Quality Control Board, Port of San Diego, and City of San Diego. Davis, CA.

Brown and Caldwell. 2011. Final Hydromodification Management Plan. Prepared for County of San Diego. March 2011.

California State Lands Commission (CSLC). 2010. About the CSLC Webpage: Definition of Sovereign Lands. Available at: http://www.slc.ca.gov/

California Department of Transportation (Caltrans). 2011. Stormwater Pollution Prevention Plan (SWPPP) and Water Pollution Control Program (WPCP) Preparation Manual, CTSW-RT-11-255.08.01. California Department of Transportation, Sacramento, CA. June 2011.

Caltrans. 2012. Officially Designated State Scenic Highways. California Department of Transportation. Website last updated on March 15, 2012. Website accessed on: April 18, 2012, http://www.dot.ca.gov/hq/LandArch/scenic/schwy.htm.

California Stormwater Quality Association (CASQA). 2003a. Stormwater Best Management Practice Handbook, New Development and Redevelopment. January 2003.

CASQA. 2003b. California Stormwater BMP Handbook, Construction, Section 3 Erosion and Sediment Control BMPs. January 2003.

Ceia, F.R., J. Patrício, J. Franco, R. Pinto, S. Fernández-Boo, V. Losi, J.C. Marques, J.M. Neto. 2011. Assessment of Estuarine Macrobenthic Assemblages and Ecological Quality Status at a Dredging Site in a Southern Europe Estuary. *Ocean & Coastal Management*. Article in Press, Corrected Proof. Available online July 30, 2011.

City of La Mesa. 1998. Subarea Habitat Conservation Plan/Natural Community Conservation Plan. Adopted by the La Mesa City Council, February 1998.

City of La Mesa. 2011. The City of La Mesa Storm Water Best Management Practices Manual – Part II: La Mesa Local Standard Urban Storm Water Mitigation Plan (Local SUSMP). City of La Mesa, Department of Public Works, Engineering Division. Updated January 2011.

City of National City. 2008. Standard Urban Strom Water Mitigation Plan. Adopted February 19, 2008.

City of San Diego. 1997. Multiple Species Conservation Program, City of San Diego MSCP Subarea Plan. City of San Diego, Community and Economic Development Department, Multiple Species Conservation Program. March 1997.

City of San Diego. 1998. Multiple Species Conservation Program, Final MSCP Plan. August 1998.

City of San Diego. 2002a. Chollas Creek Enhancement Program Plan. City of San Diego Planning Department, San Diego, CA. Adopted by San Diego City Council on May 14, 2002.

City of San Diego. 2002b. Chollas Creek South Branch Implementation Program Plan. City of San Diego Planning Department, San Diego, CA. Adopted by San Diego City Council on May 14, 2002.

City of San Diego. 2005. City of San Diego Climate Protection Action Plan. City of San Diego, Environmental Services Department, San Diego, CA. July 2005.

City of San Diego. 2006. Pedestrian Master Plan, City-wide Implementation Framework Report. December 2006.

City of San Diego. 2008. Final Program Environmental Impact Report for the Draft General Plan. City of San Diego, Development Services Department, Entitlements Division. March 10, 2008. http://www.sandiego.gov/planning/genplan/peir.shtml

City of San Diego. 2009. Land Development Manual – Biology Guidelines. City of San Diego, Development Services Department. Amended August 2009.

City of San Diego. 2011. Storm Water Standards Manual. City of San Diego, Storm Water Pollution Prevention Division and Development Services Department. January 14, 2011.

City of San Diego. 2012a. Fact Sheet: 7017 Keighley Court Storm Drain Repair Project. City of San Diego, Department of Engineering & Capital Projects, CA. Accessed January 27, 2012. Available at: http://www.sandiego.gov/engineering-cip/projectsprograms/keighley.shtml.

City of San Diego. 2012b. Fact Sheet: Wenrich Drive Storm Drain Repair Project. City of San Diego, Department of Engineering & Capital Projects, CA. Accessed January 27, 2012. Available at: http://www.sandiego.gov/engineering-cip/projectsprograms/pdf/wenrichfactsheet.pdf.

County of San Diego. 1991. San Diego County General Plan Seismic Safety Element. Adopted January 9, 1975. Amended April 24, 1991.

County of San Diego. 2003. San Diego County 85th Percentile Isopluvials. County of San Diego, Department of Public Works, Geographic Information Services. August 7, 2003.

County of San Diego. 2007a. County of San Diego Guidelines for Determining Significance, Emergency Response Plans. County of San Diego, Department of Public Works, Department of Planning and Land Use, Land Use and Environment Group, San Diego, CA. July 30, 2007.

County of San Diego. 2007b. County of San Diego Guidelines for Determining Significance, Geologic Hazards. County of San Diego, Department of Public Works, Department of Planning and Land Use, Land Use and Environment Group, San Diego, CA. July 30, 2007.

County of San Diego. 2007c. County of San Diego Guidelines for Determining Significance and Report Format and Content Requirements, Cultural Resources: Archaeological and Historical Resources, First Revision. County of San Diego, Department of Public Works, Department of Planning and Land Use, Land Use and Environmental Group. December 5, 2007. **Not relied upon.**

County of San Diego. 2008. County of San Diego Guidelines for Determining Significance and Report Format and Content Requirements, Mineral Resources, First Revision. County of San Diego, Department of Public Works and Department of Planning and Land Use, Land Use and Environment Group. July 30, 2008.

County of San Diego. 2010a. San Diego County Multi-Jurisdiction Hazard Mitigation Plan, Final Draft. San Diego County, California. July 2010.

County of San Diego. 2010b. Unified San Diego County Emergency Services Organization Operational Area Emergency Plan. County of San Diego, Office of Emergency Services. October 2010.

County of San Diego. 2011a. County of San Diego SUSMP, Standard Urban Stormwater Mitigation Plan for Development Applications (SUSMP Manual). County of San Diego, Department of Public Works. January 8, 2011.

Department of Conservation (DOC). 2003. Earthquake Fault Zones, Point Loma Quadrangle, Revised Official Map. State of California, Resources Agency, Department of Conservation. May 1, 2003.

DOC. 2009. San Diego County Williamson Act Lands 2008 Map. California Department of Conservation, Division of Land Resource Protection, Williamson Act Program, Sacramento, CA. April 16, 2009.

DOC. 2010. San Diego County Important Farmland 2008, Sheet 1 or 2. California Department of Conservation, Division of Land Resource Protection, Farmland Mapping and Monitoring Program, Sacramento, CA. October 2010

Department of Fish and Game (DFG). 2011. California Natural Diversity Database, Special Animals. State of California, Natural Resources Agency, Department of Fish and Game, Biogeographic Data Branch. January 2011.

DFG. 2012. California Natural Diversity Database, State and Federally Listed Endangered, Threatened, and Rare Plans of California. State of California, Natural Resources Agency, Department of Fish and Game, Biogeographic Data Branch. January 2012.

Design, Community & Environment (DC&E). 2011. City of National City Final Climate Action Plan. Prepared for City of National City, CA. May 2011.

ENVIRON International Corporation (ENVIRON). 2007. 2007 Clean Air Program Draft Report. Prepared for San Diego Unified Port District, San Diego, CA. December 2007.

Federal Aviation Administration (FAA). 2004. Advisory Circular for Heliport Design, AC No. 150/5390-2B. US Department of Transportation, Federal Aviation Administration. September 30, 2004.

Guerra-Garcia, J.M., J. Corzo, and J.C. Garcia-Gomez. 2003. Short-Term Benthic Recolonization after Dredging in the Harbour of Ceuta, North Africa. *Marine Ecology*. 24(3): pp. 217-229. June 6, 2003.

Janda-Timba, J.M. 2009. Drainage and Water Quality Report: Existing Conditions Analysis in Support of Environmental Impact Report for Barrio Logan Community Plan Update EIR, City of San Diego San Diego County, California. Prepared by Rick Engineering Company, Water Resources Division, San Diego, CA. August 4, 2009.

Largier, J.L., C.J. Hearn, and D.B. Chadwick. 1996. Density Structures in Low Inflow Estuaries. Buoyancy Effects on Coastal and Estuarine Dynamics, D.G. Aubrey and C.T. Friedrichs (eds.). **Not relied upon.**

Largier, J.L., J.R. Hollibaugh, and S.V. Smith. 1997. Seasonally Hypersaline Estuaries in Mediterranean-climate Regions. Estuarine, Coastal and Shelf Science, 45(6): 789-797. December 1997. **Not relied upon.**

Lemons, G., R. Lewison, L. Komoroske, A. Gaos, C. Lai, P. Dutton, T. Eguchi, R. LeRoux, and J.A. Seminoff. 2011. Trophic Ecology of Green Sea Turtles in a Highly Urbanized Bay: Insights from Stable Isotopes and Mixing Models. Journal of Experimental Marine Biology and Ecology, 405 (1-2), pp. 25-32. August 31, 2011.

Low Impact Development Center, Inc. (LIDC). 2007. LID Urban Design Tools – Rain Barrels and Cisterns. Website accessed on February 1, 2012. http://www.lid-stormwater.net/raincist_cost.htm

LSA Associates, Inc. 2011. Environmental Impact Report for Shipyard Sediment Remediation Project, San Diego Bay, California. Prepared for California Environmental Protection Agency, San Diego Regional Water Quality Control Board, San Diego, CA. June 16, 2011.

Natural Resources Agency (NRA). 2009. 2009 California Climate Adaptation Strategy, A Report to the Governor of the State of California in Response to Executive Order S-13-2008. State of California, Natural Resources Agency, Sacramento, CA.

Partnership for Advancing Technology in Housing (PATH). 2008. ToolBase TechSpecs – Permeable Pavement. Prepared by NAHB Research Center for US Department of Housing and Urban Development. May 2008. http://www.toolbase.org/PDF/DesignGuides/PermeablePavement_TechSpec.pdf

Port of San Diego. 2008. San Diego Bay Watershed Urban Runoff Management Program Document. Collaboration with Cities of Chula Vista, Coronado, Imperial Beach, La Mesa, Lemon Grove, National City, San Diego, County of San Diego, Port of San Diego, and San Diego County Regional Airport Authority. March 24, 2008.

Port of San Diego. 2011. Jurisdictional Standard Urban Stormwater Mitigation Planning Document. Port of San Diego, Environmental Services Department. January 14, 2011.

Regional Water Quality Control Board (RWQCB). 2004. Waste Discharge Requirements for the Port of San Diego Campbell Shipyard Bay Sediment Cap Closure and Post Closure Maintenance, San Diego Bay, Order No. R9-2004-0295. California Environmental Protection Agency, Regional Water Quality Control Board, San Diego Region, San Diego, CA. October 13, 2004.

RWQCB. 2012. Cleanup and Abatement Order for Shipyard Sediment Site, San Diego Bay, San Diego, California, Order No. R9-2012-0024. California Environmental Protection Agency, Regional Water Quality Control Board, San Diego Region, San Diego, CA. March 14, 2012.

Robbins-Wade, M. 2011. Archaeological Resources Analysis for the Master Storm Water System Maintenance Program, San Diego, California, Project No. 42891. Prepared by Affinis, El Cajon, CA. Revised May 2011.

San Diego Association of Governments (SANDAG). 2006. Bayshore Bikeway Plan. Prepared by Alta Planning + Design in partnership with Berryman & Henigar. March 17, 2006.

SANDAG. 2011. 2050 Regional Transportation Plan. San Diego Association of Governments, San Diego, CA. October 2011.

SCCWRP and SPAWAR. 2005. Sediment Assessment Study for the Mouths of Chollas and Paleta Creek, San Diego, Phase I Report. Prepared by Southern California Coastal Water Research Project (SCCWRP), Westminster, CA and Space and Naval Warfare Systems Center (SPAWAR), San Diego, CA for the San Diego Regional Water Quality Control Board and Commander Navy Region Southwest, San Diego, CA.

Shih, T. 2002. Timberland Site Class on Private Lands Zoned for Timber Production, Technical Working Paper 1-03-02. California Department of Forestry and Fire Protection, Fire and Resource Assessment Program, Sacramento, CA. January 3, 2002.

U.S. Environmental Protection Agency (U.S. EPA). 1999. Preliminary Data Summary of Urban Storm Water Best Management Practices, Section 6, EPA-821-R-99-012. U.S. EPA, Office of Water, Washington, D.C. August 1999

U.S. EPA. 2000. Fact Sheet: Vegetated Roof Cover, Philadelphia, Pennsylvania, EPA-841-B-00-005D. U.S. Environmental Protection Agency, Office of Water, Washington, DC. October 2000.
http://www.lowimpactdevelopment.org/pubs/Roof_cover_Factsheet.pdf

U.S. Navy. 2007. Navy Environmental Readiness Program Manual, OPNAVINST 5090.1C. Department of the Navy, Office of the Chief of Naval Operations, Washington, D.C. October 30, 2007.

http://www-nehc.med.navy.mil/environmental_health/opnavinst_5090_1c.aspx

U.S. Navy. 2011. Silver Strand Training Complex: Final Environmental Impact Statement. U.S. Department of the Navy, U.S. Pacific Fleet, County of San Diego, CA. January 2011. **Not relied upon.** http://www.silverstrandtrainingcomplexeis.com/

U.S. Navy and Port of San Diego. 2011. San Diego Bay Integrated Natural Resources Management Plan, Draft. U.S. Department of the Navy, Naval Facilities Engineering Command Southwest and Port of San Diego. San Diego, California. Prepared by Tierra Data Inc., Escondido, California. November 2011.

Weiss, P.T., J.S. Gulliver, A.J. Erickson. 2005. The Cost and Effectiveness of Stormwater Management Practices, Final Report. Prepared by University of Minnesota, Department of Civil Engineering for the Minnesota Department of Transportation, Research Services Section. June 2005.

Weston Solutions, Inc. 2006. Chollas Creek TMDL Source Loading, Best Management Practices, and Monitoring Strategy Assessment, Final Report. Prepared for City of San Diego, San Diego, California. September, 2006.