Substitute Environmental Document for the Colorado Lagoon OC Pesticides, PCBs, Sediment Toxicity, PAHs, and Metals TMDL

Prepared under the California Environmental Quality Act (CEQA) Requirements of a Certified Regulatory Program

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TABLE OF CONTENTS

1. EXECUTIVE SUMMARY

The California Regional Water Quality Control Board – Los Angeles Region (Regional Board) is the Lead Agency for evaluating the environmental impacts of the proposed Total Maximum Daily Load (TMDL) for Organochlorine Pesticides (OC Pesticides), Polychlorinated Biphenyls (PCBs), Polycyclic Aromatic Hydrocarbons (PAHs), Sediment Toxicity, and Metals (i.e. Lead and Zinc) in Colorado Lagoon. This Substitute Environmental Document (SED) analyzes environmental impacts that may occur from reasonably foreseeable methods of implementing a TMDL for OC pesticides, PCBs, PAHs, sediment toxicity, and metals in Colorado Lagoon. This SED is based on a proposed OC Pesticides, PCBs, PAHs, Sediment Toxicity, and Metals TMDL in Colorado Lagoon that will be considered by the Regional Board, and if approved by the Regional Board, implemented through an amendment to the Water Quality Control Plan, Los Angeles Region (Basin Plan). The proposed OC Pesticides, PCBs, PAHs, Sediment Toxicity, and Metals TMDL for Colorado Lagoon is described in the Staff Report, Tentative Board Resolution and Tentative Basin Plan Amendment available on the Regional Board's website. This SED analyzes foreseeable methods of compliance with the Colorado Lagoon OC Pesticides, PCBs, PAHs, Sediment Toxicity, and Metals TMDL and provides the public information regarding environmental impacts, mitigation, and alternatives in accordance with the California Environmental Quality Act (CEQA).

The SED will be considered by the Regional Board when the Regional Board considers adoption of the Colorado Lagoon OC Pesticides, PCBs, PAHs, Sediment Toxicity, and Metals TMDL as a Basin Plan Amendment. Approval of the SED is separate from approval of a specific project alternative or a component of an alternative. Approval of the SED refers to the process of: (1) addressing comments, (2) confirming that the Regional Board considered the information in the SED, and (3) affirming that the SED reflects independent judgment and analysis by the Regional Board (Section 15090 of CEQA Guidelines (Title 14 of California Code of Regulations)).

Water quality in the Colorado Lagoon is impaired by OC pesticides, PCBs, PAHs, sediment toxicity, and metals, as documented in current and proposed State of California 303(d) lists of impaired waterbodies. OC pesticides, PCBs, PAHs, sediment toxicity, and metals loadings to Colorado Lagoon result in impairments of existing beneficial uses associated with water contact recreation (REC-1) and non-contact water recreation (REC-2), commercial and sport fishing (COMM), warm marine habitat (MAR), wildlife habitat (WILD), and shellfish harvesting (SHELL).

The basis for development of the 303(d) listings for OC pesticides, PCBs, sediment toxicity, PAHs, and metals in Colorado Lagoon mainly stems from Water Quality Assessments (WQAs) in 1996 conducted by Regional Board staff with the majority of the listings first appearing on the 1994 and 1996 303(d) list. The listings for sediment including metals, PAHs, and sediment toxicity in Colorado Lagoon were based on data generated through the Bay Protection & Toxic Control Program (BPTCP) in the early 1990's. Based upon this information, the Colorado Lagoon was placed on the 303(d) list for lead, zinc, chlordane, and PAHs in sediments. Organochlorine pesticides (chlordane, DDT, dieldrin and PCBs) were also cited as contributing to impairment due to bioaccumulation in tissues of fish and mussels.

An OC pesticides, PCBs, PAHs, sediment toxicity, and metals TMDL for Colorado Lagoon is required under section 303 of the Clean Water Act and mandated by a Consent Decree between Heal the Bay et al. and the United States Environmental Protection Agency (USEPA). This consent decree requires that all TMDLs for the Los Angeles Region be adopted within 13 years, and prescribes schedules for certain TMDLs. For the purpose of scheduling TMDL development,

the consent decree combined the more than 700 waterbody-pollutant combinations into 92 TMDL analytical units. Analytical Unit 82 addresses the impairments in Colorado Lagoon associated with DDT, PCBs, chlordane, dieldrin and sediment toxicity and Analytical Unit 83 addresses the impairments associated with PAHs and metals including lead and zinc. The objective of the OC Pesticides, PCBs, PAHs, Sediment Toxicity, and Metals TMDL is to restore the beneficial uses of Colorado Lagoon that are currently impaired by OC Pesticides, PCBs, PAHs, Sediment Toxicity, and Metals, in accordance with Clean Water Act section 303(d).

The OC Pesticides, PCBs, PAHs, Sediment Toxicity, and Metals TMDL establishes waste load allocations (WLAs) to point sources (stormwater) and load allocations (LAs) to nonpoint sources, and provides for a 7-year implementation schedule. Stormwater WLAs will be implemented through the County of Los Angeles and the City of Long Beach Municipal Separate Storm Sewer System (MS4) permits, the California Department of Transportation (Caltrans) Statewide Stormwater permit, general industrial storm water permits, general construction storm water permits, minor NPDES permits, and general NPDES permits. The implementation plan will be implemented directly at the lagoon and watershed, which will divert stormwater runoff during dry weather and reduce OC pesticides, PCBs, sediment toxicity, PAHs, and metals loadings to the Lagoon. Potential adverse impacts to the environment stem principally from the removal of sediment from the west arm and central portions of the lagoon, the low-flow and storm first flush diversions, the development of vegetated bioswales, and potential development of an open channel or underground culvert between the lagoon and Marine Stadium.

This SED analyzes three Program Alternatives and two types of Implementation Alternatives (see Sections 4 and 5 of this SED for a description of the alternatives) that encompass actions within the jurisdiction of the Regional Board and implementing municipalities and agencies. A No Project Alternative is analyzed to allow decision makers to compare the impacts of approving a proposed alternative and its components compared with the impacts of not approving the proposed alternative. The SED analyzes the potential environmental impacts in accordance with significance criteria widely accepted by municipalities and government agencies in the Colorado Lagoon Watershed for CEQA review. The TMDL does not specify types of projects, specific locations, or mitigation measures for those projects. Projects are specified, designed, constructed, operated, and mitigated for by the NPDES permittees.

Municipalities and agencies that will implement specific projects and BMPs may use this SED to help with the selection and approval of project alternatives. The implementing municipality or agency will be the lead agency and has responsibility for environmental review of the projects to determine necessary strategies to implement this TMDL.

Approval of projects (i.e., project alternatives or components of project alternatives) refers to the decision of either the implementing municipalities or agencies to select and carry out an alternative or a component of an alternative. (Section 5 of this SED summarizes the components that comprise the project alternatives analyzed in this SED). The components assessed at a project level have specific locations that will be determined by implementing municipalities and agencies. The project level components will be subject to additional environmental review, including review by the County of Los Angeles, the City of Long Beach, and the California Department of Transportation (Caltrans), which are the responsible agencies in implementing the Colorado Lagoon OC Pesticides, PCBs, PAHs, Sediment Toxicity, and Metals TMDL projects.

Many of the specific projects and BMPs analyzed in this SED will involve construction projects and maintenance of vegetated bioswales, open channel or underground culvert, trash separation devices, and storm drain infrastructure. Infrastructure maintenance and urban construction

projects generate varying degrees of environmental impacts. The potential impacts can include, for example, noise associated with construction, air emissions associated with vehicles to deliver materials during construction, traffic associated with increased vehicle trips and where construction or attendant activities occur near or in thoroughfares. These foreseeable impacts are analyzed in detail in Section 6 of this SED.

To address the environmental and nuisance impacts from these routine and essential activities, public works departments are required to employ a variety of techniques, "best management practices", and other mitigation measures to minimize the impacts on the environment. Generally accepted and recognized mitigation measures for construction projects on the scale of these maintenance projects include, for example, management of traffic by planning construction activities for certain times of the day, development of detailed traffic plans in coordination with police or fire protection authorities; mitigation of excessive noise by planning construction activities for certain times of the day, use of less noisy equipment, use of sound barriers; reduction of air emissions by use of lower emissions vehicles. Numerous agencies such as Caltrans, CASQA, and WERF publish handbooks containing guidance on the selection, siting, design, installation, monitoring, and evaluation of stormwater BMPs (Caltrans, 2002, 2003; CASQA, 2003a; CASQA, 2003b; WERF, 2005). These mitigation methods and BMPs are discussed in detail in this SED. They are intended to avoid or minimize site specific impacts, and in many cases they do so to less than significant levels, considering the context of the urbanized baseline conditions.

This SED finds foreseeable methods to comply with the Colorado Lagoon OC Pesticides, PCBs, PAHs, Sediment Toxicity, and Metals TMDL by focusing on improvements to the storm drain system and the removal of sediment in the Lagoon. BMPs in the Colorado Lagoon OC Pesticides, PCBs, PAHs, Sediment Toxicity, and Metals TMDL area generally do not cause significant impacts that cannot be mitigated through commonly used construction and maintenance practices. The SED finds that environmental impacts from the OC Pesticides, PCBs, PAHs, Sediment Toxicity, and Metals TMDL are those impacts related to the removal of sediment and structural BMPs. The SED identifies mitigation methods for impacts with potentially significant effects. The SED can be used by implementing municipalities and agencies to expedite any additional environmental analysis of specific projects required to comply with the Colorado Lagoon OC Pesticides, PCBs, PAHs, Sediment Toxicity, and Metals TMDL. To the extent that there are unavoidable adverse environmental impacts, the benefits of this TMDL outweigh these impacts.

The implementation actions represent a range of activities that were proposed by the County of Los Angeles and City of Long Beach in the *Los Angeles County Termino Avenue Drain Project* (TADP) and *Colorado Lagoon Restoration Project* (CLRP) that could be conducted to control the release of polluted storm water and contaminated sediments to Colorado Lagoon, attain water and sediment quality standards, and protect beneficial uses. The lead agencies for proposed and subsequent projects would be obligated to mitigate any impacts they identify. The County of Los Angeles and the City of Long Beach have prepared Environmental Impact Reports (EIRs) for the two mentioned above projects. Both the Los Angeles County Board of Supervisors and the City of Long Beach have certified program level Environmental Impact Reports (EIRs) for the TADP and the CLRP that examine the foreseeable environmental impacts from constructing and operating a system to comply with the Colorado OC Pesticides, PCBs, Sediment Toxicity, PAHs, and Metals TMDL. Many of the proposed actions under the TADP and the CLRP, such as relocation of major storm drains, construction of open/or underground channel, removal of contaminated sediment, diversion of low flows to sewer lines, installation of trash separation devices, and installation of vegetated bioswales will improve water and sediment quality in

Colorado Lagoon. Therefore, the Implementation Plan for the Colorado Lagoon TMDL was designed to coordinate with these proposed projects in order to realize the best use of public funds.

As discussed in this SED, California Water Code section 13360 prohibits the Regional Board from specifying the manner of compliance with the TMDL. Methods of compliance and selection of specific BMPs and associated mitigation measures are the responsibility of the responsible agencies for implementing the Colorado Lagoon OC Pesticides, PCBs, PAHs, Sediment Toxicity, and Metals TMDL.

Many of the mitigation measures identified in this SED are common practices currently employed by agencies when planning and implementing storm water BMPs. Agencies such as Caltrans, the California Stormwater Quality Association (CASQA), and the Water Environment Research Foundation (WERF) publish handbooks containing guidance on the selection, siting, design, installation, monitoring, and evaluation of storm water BMPs (Caltrans, 2002, CASQA, 2003a, CASQA, 2003b, WERF, 2005). Manuals are also available, which describe engineering and administration policies and procedures for construction projects (e.g., Caltrans, 2003a). Since the decision to perform these measures is strictly within the responsibility and jurisdiction of the individual implementing agencies, such measures can and should be adopted by these agencies. (Title 14, California Code of Regulations, Section 15091(a)(2).)

The regulatory requirements and the program objectives for the Colorado Lagoon OC Pesticides, PCBs, PAHs, Sediment Toxicity, and Metals TMDL are provided in Section 2 and Section 3, respectively. Section 4 discusses the program level alternatives for this TMDL and presents implementation alternatives to achieve compliance with the final waste load allocation of OC pesticides, PCBs, PAHs, sediment toxicity, and metals. Section 5 provides a detailed description of implementation alternatives. Section 6 contains site specific environmental impacts (Section 6.3) and the CEQA Checklist and Determination with in-depth analysis of each resource area (Section 6.4). Other environmental considerations are discussed in Section 7. The statement of overriding considerations and determination is discussed in Section 8. A list of references is included in Section 9 of this SED.

2. REGULATORY REQUIREMENTS FOR ENVIRONMENTAL IMPACT ANALYSIS OF THE TMDL

This section presents the regulatory requirements for assessing environmental impacts of a TMDL implemented through a Basin Plan Amendment at the Regional Board. This TMDL for OC Pesticides, PCBs, PAHs, Sediment Toxicity, and Metals contamination in the Colorado Lagoon is evaluated at a program level of detail under a *Certified Regulatory Program* and the information and analyses are presented in this Substitute Environmental Document (SED) as discussed in this section.

2.1 EXEMPTION FROM CERTAIN CEQA REQUIREMENTS

The California Secretary of Resources has certified the State and Regional Boards' basin planning process as exempt from certain requirements of the California Environmental Quality Act (CEQA), including preparation of an initial study, negative declaration, and environmental impact report (California Code of Regulations, Title 14, Section 15251(g)). As the proposed amendment to the Basin Plan is part of the basin planning process, the environmental information developed for and included with the amendment is considered a substitute for an initial study, negative declaration, and/or environmental impact report.

2.2 CALIFORNIA CODE OF REGULATIONS AND PUBLIC RESOURCES CODE REQUIREMENTS

While the "certified regulatory program" of the Regional Board is exempt from certain CEQA requirements, it is subject to the substantive requirements of California Code of Regulations, Title 23, Section 3777(a), which requires a written report that includes a description of the proposed activity, an analysis of reasonable alternatives, and an identification of mitigation measures to minimize any significant adverse environmental impacts. Section 3777(a) also requires the Regional Board to complete an environmental checklist as part of its substitute environmental document. This checklist is provided in section 6 of this document.

In addition, the Regional Board must fulfill substantive obligations when adopting performance standards such as TMDLs, as described in Public Resources Code section 21159. Section 21159, which allows expedited environmental review for mandated projects, provides that an agency shall perform, at the time of the adoption of a rule or regulation requiring the installation of pollution control equipment, or a performance standard or treatment requirement, an Environmental Analysis of the reasonably foreseeable methods of compliance. The statute further requires that the environmental analysis at a minimum, include, all of the following:

(1) An analysis of the reasonably foreseeable environmental impacts of the methods of compliance.

(2) An analysis of reasonably foreseeable feasible mitigation measures to lessen the adverse environmental impacts.

(3) An analysis of reasonably foreseeable alternative means of compliance with the rule or regulation that would have less significant adverse impacts. (Pub. Resources Code, § 21159(a).)

Section 21159(c) requires that the Environmental Analysis take into account a reasonable range of:

(1) Environmental, economic, and technical factors,

(2) Population and geographic areas, and

(3) Specific sites.

2.3 PROGRAM AND PROJECT LEVEL ANALYSES

Public Resources Code § 21159(d) specifically states that the public agency is not required to conduct a "project level analysis." Rather, a project level analysis must be performed by the local agencies that are required to implement the requirements of the TMDL (Pub. Res. Code § 21159.2.) Notably, ***the Regional Board is prohibited from specifying the manner of compliance with its regulations*** (Water Code § 13360), and accordingly, the ***actual*** environmental impacts will necessarily depend upon the compliance strategy selected by the local agencies and other permittees.

This Substitute Environmental Document identifies the reasonably foreseeable environmental impacts of the ***reasonably foreseeable*** methods of compliance (Pub. Res. Code, § 21159(a)(1).), based on information developed before, during, and after the CEQA scoping process that is specified in California Public Resources Code section 21083.9. This analysis is a program level (i.e., macroscopic) analysis. CEQA requires the Regional Board to conduct a program level analysis of environmental impacts. (Pub. Res. Code, § 21159(d).) Similarly, the CEQA substitute document does not engage in speculation or conjecture (Pub. Res. Code, § 21159(a).) When the CEQA analysis identifies a potentially significant environmental impact, the accompanying analysis identifies reasonably foreseeable feasible mitigation measures. (Pub. Res. Code, § 21159(a)(2).) Because responsible agencies will most likely use a combination of structural and non-structural BMPs, the SED has identified the reasonably foreseeable alternative means of compliance. (Pub. Res. Code, § 21159(a)(3).)

2.4 PURPOSE OF CEQA

CEQA's basic purposes are to: 1) inform the decision makers and public about the potential significant environmental effects of a proposed project, 2) identify ways that environmental damage may be mitigated, 3) prevent significant, avoidable damage to the environment by requiring changes in projects, through the use of alternative or mitigation measures when feasible, and 4) disclose to the public why an agency approved a project if significant effects are involved. (Cal. Code Regs., tit. 14, § 15002(a).)

To fulfill these functions, a CEQA review need not be exhaustive, and CEQA documents need not be perfect. They need only be adequate, complete, and good faith efforts at full disclosure. (Cal.Code Regs., tit.14, § 15151.) The Court stated in River Valley Preservation Project v. Metropolitan Transit Development Board (1995) 37 Cal.App.4th 154, 178:

"As we have stated previously, "[our limited function is consistent with the principle that ""[t]he purpose of CEQA is not to generate paper, but to compel government at all levels to make decisions with environmental consequences in mind."""] (City of Santee v. County of San Diego (1989) 214 Cal.App.3d 1438, 1448 [263 Cal. Rptr. 340]; quoting Laurel Heights I, supra, 47 Cal.3d at p. 393.) "We look 'not for perfection but for adequacy, completeness, and a good faith effort at full disclosure.' (Guidelines, §§ 15151.)" (City of Fremont v. San Francisco Bay Area Rapid Transit Dist., supra, 34 Cal.App.4th at p. 1786.)"

Nor does a CEQA require unanimity of opinion among experts. The analysis is satisfactory as long as those opinions are considered. (Cal.Code Regs., tit. 14, § 15151.)

In this document, the Regional Board staff has performed a good faith effort at full disclosure of the reasonably foreseeable environmental impacts that could be attendant with the proposed Colorado Lagoon OC Pesticides, PCBs, PAHs, Sediment Toxicity, and Metals TMDL. Our analysis and conclusions are described as follows.

3. TMDL OVERVIEW AND PROGRAM OBJECTIVES

3.1 INTRODUCTION – LEGAL BACKGROUND

The Total Maximum Daily Load (TMDL) for OC pesticides, PCBs, PAHs, sediment toxicity, and metals in Colorado Lagoon was designed to attain fish tissue and sediment quality standards for OC pesticides, PCBs, PAHs, sediment toxicity, and metals in the Colorado Lagoon. The TMDL was prepared pursuant to state and federal requirements to preserve and enhance water quality in the Colorado Lagoon. The adoption of a TMDL is not discretionary and is compelled both by section 303(d) of the federal Clean Water Act (33 USC 1313(d)) and by a federal consent decree, Heal the Bay Inc., et al. v. Browner, et al. C 98-4825 SBA (United States District Court, Northern District of California, 1999) approved on March 22, 1999.

The California Water Quality Control Plan, Los Angeles Region, also known as the *Basin Plan*, sets water quality standards for surface waters and ground waters in the region. These standards are comprised of designated beneficial uses for surface and ground waters, and numeric and narrative objectives necessary to support beneficial uses and the state's antidegradation policy. Such standards are mandated for all waterbodies within the state under the Porter-Cologne Water Quality Act. In addition, the Basin Plan describes implementation programs to protect all waters in the region. The Basin Plan implements the Porter-Cologne Water Quality Control Act (commencing at Section 1300 of the "California Water Code") and serves as the State Water Quality Control Plan applicable to Colorado Lagoon in the City of Long Beach, also requiring water quality standards for all surface waters as required pursuant to the federal Clean Water Act (CWA).

Section 305(b) of the CWA mandates biennial assessments of the nation's water resources. These water quality assessments are used, with any other available data and information, to identify and prioritize waters not attaining water quality standards. The resulting amalgamation of waters is referred to as the "303(d) List" or the "Impaired Waters List". CWA section 303(d)(1)(C) and (d)(1)(D) require that the state establish TMDLs for each listed water. Those TMDLs, and the 303(d) List itself, must be submitted to USEPA for approval under section 303(d)(2). Section 303(d)(3) requires that the state also develop TMDLs for all waters that are not on the 303(d) List as well, however TMDLs for waters that do not meet the criteria for listing are not subject to approval by USEPA.

TMDLs must be established at a level necessary to attain water quality standards, considering seasonal variations and a margin of safety. TMDLs must also include an allocation of parts of the total allowable load (or loading capacity) to all point sources, nonpoint sources, and natural background in the form of waste load and load allocations, accordingly. Waste load and load allocations must be assigned for all sources of the impairing pollutant, irrespective of whether they are discharged to the impaired reach or to an upstream tributary. TMDLs are generally established in California through the basin planning process, i.e., an amendment to the basin plan to incorporate a new or revised program of implementation of the water quality standards, pursuant to Water Code section 13242. The process that the Regional Board uses for establishing TMDLs is the same whether under section 303(d)(1) or 303(d)(3).

USEPA's authority over the 303(d) program includes the obligation to approve or disapprove the identification of impaired waters. If any list or TMDL is disapproved, USEPA must establish its own list or TMDL.

As part of California's 1996, 1998, 2002, and 2006 303(d) list submittals, the Regional Board identified Colorado Lagoon in the City of Long Beach as being impaired due to lead, zinc, chlordane, and polycyclic aromatic hydrocarbons (PAHs) in the sediment and chlordane, dichlorodiphenyltrichloroethane (DDT), dieldrin, and polychlorinated biphenyls (PCBs) in tissues of marine organisms.

A consent decree between the USEPA, the Santa Monica BayKeeper and Heal the Bay, represented by the Natural Resources Defense Council (NRDC), was signed on March 22, 1999. This consent decree requires that all TMDLs for the Los Angeles Region, for 1998 listed water, be adopted within 13 years.

The Colorado Lagoon OC Pesticides, PCBs, PAHs, Sediment Toxicity, and Metals TMDL is a Basin Plan Amendment and is subject to the 2001 provision of the Public Resources Code Section 21083.9 that requires a CEQA Scoping to be conducted for Regional Projects. CEQA Scoping involves identifying a range of project/program related actions, alternatives, mitigation measures, and significant effects to be analyzed in an EIR or its functionally equivalent document. On January 21, 2009, a CEQA Scoping hearing was held to present and discuss the foreseeable potential environmental impacts of compliance with the Colorado Lagoon OC Pesticides, PCBs, PAHs, Sediment Toxicity, and Metals TMDL. A notice of the CEQA Scoping hearing was sent to interested parties including City of Long Beach and Los Angeles County with jurisdiction in the Colorado Lagoon Watershed. Input from all stakeholders and interested parties was solicited for consideration in the development of the CEQA document.

This SED is being released for public comments accompanying the TMDL staff report, Basin Plan amendment, and tentative resolution for adoption by the Regional Board; these documents should be considered as a whole when evaluating the environmental impacts of implementing the TMDL. When complete, the SED will also include a response to comments on this draft SED.

3.2 PROJECT PURPOSE, TMDL GOALS, AND WATER QUALITY OBJECTIVES

3.2.1 PROJECT PURPOSE

The California Regional Water Quality Control Board, Los Angeles Region (Regional Board) proposes an amendment to the Water Quality Control Plan for the Los Angeles Region to incorporate a Total Maximum Daily Load (TMDL) to reduce OC pesticides, PCBs, PAHs, sediment toxicity, and metals in Colorado Lagoon.

As further set forth herein, this project's purpose is twofold:

- To adopt a regulation that will guide Regional Board permitting, enforcement, and other actions to require responsible parties to take appropriate measures to restore and maintain applicable Water Quality Standards pertaining to OC pesticides, PCBs, PAHs, sediment toxicity, and metals in Colorado Lagoon; and

- To establish a TMDL for Colorado Lagoon in compliance with the requirements of section 303(d) of the federal Clean Water Act (CWA) in a manner timely enough to avert federal intervention in state water quality planning, which would occur as a result of USEPA's obligations under section 303(d) and under a federal consent decree that would require USEPA to establish these TMDLs if the State does not do so.

Section 303(d) of the CWA requires states to identify waters not meeting state water quality standards, and establish TMDLs for those waters, at levels necessary to resolve the impairments and maintain water quality standards. The purpose of this project is to both comply with the requirements of section 303(d) and to resolve the impairments and maintain compliance with water quality standards in the relevant water bodies.

3.2.2 TMDL GOALS

The Basin Plan designates beneficial uses of waterbodies, establishes water quality objectives for the protection of these beneficial uses, and outlines a plan of implementation for maintaining and enhancing water quality. The proposed amendment would incorporate into the Basin Plan a TMDL for OC pesticides, PCBs, PAHs, sediment toxicity, and metals in Colorado Lagoon.

The beneficial uses likely to be impaired by OC pesticides, PCBs, PAHs, sediment toxicity, and metals include: Water Contact Recreation (REC-1), Non-contact Water Recreation (REC-2), Commercial and Sport Fishing (COMM), Warm Freshwater Habitat (WARM), Wildlife Habitat (WILD), and Shellfish Harvesting (SHELL).

The Regional Board's goals in adopting the TMDL are to eliminate the significant water quality impacts caused by OC pesticides, PCBs, PAHs, sediment toxicity, and metals in water, sediment and/or fish tissue.

3.2.3 WATER QUALITY OBJECTIVES

As stated in the Basin Plan, Water Quality Objectives (WQOs) are intended to protect the public health and welfare and to maintain or enhance water quality in relation to the designated existing and potential beneficial uses of the water. The Basin Plan specifies both narrative and numeric WQOs. Narrative WQOs are specified by the Basin Plan. The following narrative WQOs are most pertinent to the Colorado Lagoon OC Pesticides, PCBs, PAHs, Sediment Toxicity, and Metals TMDL.

Chemical Constituents: *Surface waters shall not contain concentrations of chemical constituents in amounts that adversely affect any designated beneficial use.*

Bioaccumulation: *Toxic pollutants shall not be present at levels that will bioaccumulate in aquatic life to levels, which are harmful to aquatic life or human health.*

Pesticides: *No individual pesticide or combination of pesticides shall be present in concentrations that adversely affect beneficial uses. There shall be no increase in pesticide concentrations found in bottom sediments or aquatic life.*

Toxicity: *All waters shall be maintained free of toxic substances in concentrations that are toxic to, or that produce detrimental physiological responses in human, plant, animal, or aquatic life.*

The listings for sediment including lead, zinc, chlordane, PAHs, and sediment toxicity in Colorado Lagoon were based on data generated through the Bay Protection & Toxic Control Program (BPTCP).

For bioaccumulation in aquatic organisms, data from the State Mussel Watch and Toxic Substances Monitoring program were used. These two state programs provide information about the occurrence of toxic substances in fresh, estuarine, and marine waters through analysis of fish, mussels and other aquatic life referred to as "tissue". Metals, OC pesticides, and PCBs are

analyzed from the tissue of these organisms. Bioaccumulation data collected from tissue are compared to criteria such as Maximum Tissue Residue Levels (MTRLs), U. S. Food and Drug Administration (FDA) action levels, Median International Standards (MIS), and the National Academy of Sciences (NAS) recommended guidelines for predator protection. Fish tissue Elevated Data Level (EDL) values are an internal state comparative measure that ranks a given concentration of a particular substance with previous data from the state programs. EDLs are calculated by ranking all of the results for a given chemical from the highest concentration measured down to and including those records where the chemical was not detected. The 85th percentile (EDL85) was chosen as an indication that a chemical is elevated from the median and the 95th percentile (EDL95) was chosen to indicate values that are highly elevated. EDLs were used in the 1996 Water Quality Assessment as follows: If no other constituents exceed standards, but if one or two constituents were above the EDL85 or EDL95, then those constituents are listed as "fully supporting but threatened." If three or more constituents are above the EDL then those constituents are listed as "partially supporting".

TMDLs and associated waste load allocations for point sources and load allocations for nonpoint sources are vehicles for implementation of standards. As proposed in this TMDL, waste load allocations will be incorporated into National Pollution Discharge Elimination System (NPDES) permits for Municipal Separate Storm Sewer System (MS4) for the County of Los Angeles, the City of Long Beach, and California Department of Transportation (Caltrans). Load allocations for nonpoint sources will be implemented according to the “Policy for Implementation and Enforcement of the Nonpoint Source Pollution Control Program” (SWRCB, 2004).

4. DESCRIPTION OF ALTERNATIVES

This substitute environmental document analyzes three program alternatives that encompass actions within the jurisdiction of the Regional Board and implementing municipalities and agencies. The program alternatives include 1) the Colorado Lagoon OC Pesticides, PCBs, PAHs, Sediment Toxicity, and Metals TMDL as it is proposed for Regional Board adoption; 2) an OC Pesticides, PCBs, PAHs, Sediment Toxicity, and Metals TMDL established by the USEPA, and 3) a No Program Alternative in which an OC Pesticides, PCBs, PAHs, Sediment Toxicity, and Metals TMDL is not implemented. Because a TMDL is required by Section 303(d) of the Clean Water Act and a federal consent decree, the no Program Alternative is analyzed to allow decision makers to compare the impacts of approving a proposed alternative and its components compared with the impacts of not approving a proposed alternative. The specifics of the many projects which would make up a program alternative are discussed in detail in Section 5 and include structural and non-structural Best Management Practices (BMPs) that are reasonably foreseeable to be implemented under the Colorado Lagoon OC Pesticides, PCBs, PAHs, Sediment Toxicity, and Metals TMDL program alternatives.

This document does not analyze a "partial" TMDL; for example, a TMDL which would achieve only a 70% or only an 80% reduction for OC pesticides, PCBs, PAHs, sediment toxicity, and metals based on numeric targets. This sort of alternative was considered and rejected because, to the extent that significant adverse environmental impacts would be created by compliance with this proposed TMDL, while a "partial" TMDL would, in fact, have fewer of those environmental impacts associated with compliance (although, also, less environmental benefits of the TMDL), the specific legal requirements of section 303(d) of the Clean Water Act require a level necessary to achieve water quality standards. Thus a "partial" TMDL is unlawful because a partial reduction in OC pesticides, PCBs, PAHs, sediment toxicity, and metals would not meet water quality standards.

The components assessed at a program level generally are program elements that would be implemented as part of the Colorado Lagoon OC Pesticides, PCBs, PAHs, Sediment Toxicity, and Metals TMDL, but these elements do not have specific locations or design details identified. The components assessed at a project level have specific locations which will be determined by implementing municipalities and agencies. The project level components will be subject to additional future environmental review, including review by cities and municipalities implementing OC Pesticides, PCBs, PAHs, Sediment Toxicity, and Metals TMDL projects.

4.1 PROGRAM ALTERNATIVES

4.1.1 ALTERNATIVE1 - REGIONAL BOARD TMDL

This program alternative is based on the TMDL that is presently proposed for Regional Board consideration. The proposed TMDL focuses on the reduction of OC pesticides, PCBs, PAHs, sediment toxicity, and metals in Colorado Lagoon.

The TMDL waste load allocations (WLAs) and load allocations (LAs) are established through an amendment to the Basin Plan. WLAs are assigned to municipal stormwater dischargers, and to future minor NPDES permittees, or enrollees under a general non-stormwater NPDES permit, general industrial stormwater permit, or general construction permit.

This alternative provides a program for addressing the adverse impacts of OC pesticides, PCBs, PAHs, sediment toxicity, and metals through progressive controls in discharges to Colorado

Lagoon through a 7 year schedule. This schedule is both reasonable and as short as practicable. The WLAs and the implementation schedule, once they are incorporated into the Basin Plan, will be considered by NPDES (Nation Pollutant Discharge Elimination System) permit writers when developing permit limits that are adopted in separate subsequent actions by the Regional Board.

Although the Regional Board cannot mandate the manner of compliance, foreseeable environmental impacts from methods of compliance are well known. During the development of the TMDL, a CEQA scoping meeting was held during which the manner of compliance was discussed. At this meeting, the most reasonable means of compliance were examined. They include structural methods such as cleaning the culvert, building an open channel between the lagoon and Marine Stadium, removing contaminated sediments in the western arm, removing sediment in the central lagoon to create a channel in the lagoon floor, upgrading storm drains, and replacing local hard drain outlets in the lagoon with vegetated bioswales.

This TMDL program alternative anticipates compliance through installation of structural BMPs, and non-structural BMPs as discussed in Section 5. Potential adverse impacts to the environment stem principally from the installation, operation, and maintenance of these structural BMPs. This document analyzes these impacts and concludes that installation of implementation projects are of relatively short duration and typical of "baseline" construction and maintenance projects that occur presently in the TMDL area. It also concludes that significant impacts can be mitigated or there are alternative means of compliance available.

4.1.2 ALTERNATIVE 2 – USEPA TMDL

This program alternative is based on a TMDL that would be established by the United States Environmental Protection Agency (USEPA), pursuant to the consent decree, if the Regional Board fails to adopt an OC Pesticides, PCBs, PAHs, Sediment Toxicity, and Metals TMDL. Because the technical analysis will be very similar to the Regional Board analysis and because the same laws and regulations apply, it is assumed that the technical portions, LAs, and WLAs of this TMDL program alternative will be essentially the same as program alternative 1. However, because such a TMDL is not implemented through a Basin Plan amendment, the WLAs will be implemented through NPDES permit limits as the permits are renewed without consideration of a compliance schedule. Because NPDES permits are renewed every five years, all responsible parties, municipalities and Caltrans, could be required to be in full compliance immediately following the TMDL adoption by USEPA, or within five years.

This TMDL program alternative also anticipates compliance through installation of structural BMPs, and non-structural BMPs as discussed in Section 5. Potential adverse impacts to the environment stem principally from the construction and operation of these structural BMPs. This document analyzes these impacts and concludes that installation of implementation projects are of relatively short duration and typical of "baseline" construction and maintenance projects that occur presently in this TMDL area. It also concludes that significant impacts can be mitigated or there are alternative means of compliance available, and that the benefits of the program outweigh any significant adverse environmental effects.

4.1.3 ALTERNATIVE 3 – NO PROGRAM ALTERNATIVE

This program alternative assumes that neither the USEPA nor the Regional Board implements an OC Pesticides, PCBs, PAHs, Sediment Toxicity, and Metals TMDL. While cities and municipalities could implement BMPs on a discretionary basis, this CEQA analysis is based on the assumption that no additional OC pesticides, PCBs, PAHs, sediment toxicity, and metals

reduction BMPs would be implemented in addition to those that are presently in place. However, the No Project TMDL is contrary to federal and state law and a Court Ordered Consent Decree between citizen plaintiffs and the USEPA. Therefore, the failure to implement an OC Pesticides, PCBs, PAHs, Sediment Toxicity, and Metals TMDL is unlawful.

In addition, while impact to the environment from construction or maintenance of structural BMPs would be avoided in this No Program alternative, No Program would not restore beneficial uses in Colorado Lagoon. Either TMDL program alternative will restore beneficial uses in Colorado Lagoon and attain water quality standards by removing OC pesticides, PCBs, PAHs, sediment toxicity, and metals from Colorado Lagoon. As such, either OC Pesticides, PCBs, PAHs, Sediment Toxicity, and Metals TMDL program alternative 1 or 2 represents a benefit to the environment and the No TMDL Program alternative represents a continued OC pesticides, PCBs, PAHs, sediment toxicity, and metals impairment of the environment.

4.1.4 RECOMMENDED PROGRAM ALTERNATIVE

This environmental analysis finds that program alternative 1 is the most environmentally feasible alternative.

Alternative 3 is not a feasible alternative because, while it avoids impacts due to discrete installation projects, OC pesticides, PCBs, PAHs, sediment toxicity, and metals impairment of the Colorado Lagoon will continue. Both program alternatives 1 and 2 will comply with the law and the federal consent decree, and remove the OC pesticides, PCBs, PAHs, sediment toxicity, and metals impairment from Colorado Lagoon at the comparatively small environmental cost of small installation projects throughout the watershed.

The key difference between program alternatives 1 and 2 is the establishment of an implementation schedule. While the same LAs and WLAs 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 7 years. Alternative 2, in contrast, will require compliance at the time of permit renewal, in all permit cases, in less than 5 years. 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.

4.2 PROJECT LEVEL ALTERNATIVES

The program alternatives above present many alternatives and options, but do not require any specific projects to achieve compliance. Rather, a project level analysis must be performed by the local agencies that are required to implement the requirements of the TMDL (Pub. Res. Code § 21159.2.). Notably, the Regional Board is prohibited from specifying the manner of compliance with its regulations (Water Code § 13360), and accordingly, the actual environmental impacts will necessarily depend upon the compliance strategy selected by the local agencies and other permittees.

Although the Regional Board cannot mandate the manner of compliance, foreseeable environmental impacts from methods of compliance are well known, as are feasible mitigation measures. During the development of the TMDL, a CEQA scoping meeting was held during

which the manner of compliance was discussed. At this meeting, reasonable means of compliance were discussed, including structural implementation alternatives such as cleaning culverts, removing contaminated sediments in the western arm of the lagoon, removing sediments in the central lagoon, upgrading storm drains, and replacing local hard stormdrain outlets in the lagoon with vegetated bioswales, and non-structural BMPs such as education programs and outreach. The City of Long Beach is also considering an open channel or parallel underground culvert option to further improve water quality at the Colorado Lagoon.

The components assessed at a project level have specific locations which will be determined by implementing municipalities and agencies. The project level components will be subject to additional future environmental review, including review by cities and municipalities implementing OC Pesticides, PCBs, PAHs, Sediment Toxicity, and Metals TMDL projects. Section 5 of this SED includes an extensive discussion of the project alternatives.

5. DESCRIPTION OF IMPLEMENTATION ALTERNATIVES

This Section of the SED provides a description of the general stormwater system in the area of the TMDL and a description of structural and non-structural implementation alternatives and the type of sites where they might be placed in compliance with the OC Pesticides, PCBs, PAHs, Sediment Toxicity, and Metals TMDL.

The Regional Board is prohibited from specifying the manner of compliance with its regulations (Water Code § 13360), and accordingly, the actual compliance strategies will be selected by the local agencies and other permittees. Although the Regional Board does not mandate the manner of compliance, foreseeable methods of compliance are well known. The most likely measures of compliance include structural BMPs such as 1) clean culvert, repair tidal gates, and remove sill/structural impedances, 2) remove contaminated sediments, 3) re-direct low flows and first flush storm, 4) install vegetated bioswales, 5) install trash separation devices, 6) modify sand nourishment practices; as well as non-structural BMPs such as public education, street cleaning, storm drain cleaning, and storm drain stenciling. Construction of an open channel or parallel underground culvert is also considered to further improve water quality at Colorado Lagoon.

The project level components will be subject to additional future environmental review. A project level environmental analysis must be performed by the local agencies that are required to implement the requirements of the TMDL (Pub. Res. Code § 21159.2.).

5.1 STRUCTURAL IMPLEMENATION ALTERNATIVES (BMPs)

Structural BMPs involve the use of engineered systems and methods to treat or divert water at either the point of generation or point of discharge to either the storm system or to receiving waters. These controls can require construction and operation activities that create potentially significant environmental impacts.

5.1.1 CLEAN CULVERT, REPAIR TIDAL GATES, AND REMOVE SILL/STRUCTURAL IMPEDANCES

This implementation alternative would clean out debris from the existing culvert and trash racks between Colorado Lagoon and Marine Stadium. Likewise, sills blocking the culvert will be removed and tidal gates repaired to increase flow between the lagoon and Marine Stadium. Implementation of this alternative would result in an increase in the tidal range and tidal flushing of Colorado Lagoon, resulting in increased water circulation and an improvement in water quality.

5.1.2 BUILD OPEN CHANNEL OR PARALLEL UNDERGROUND CULVERT BETWEEN LAGOON AND MARINE STADIUM

The City of Long Beach is considering an open channel or parallel underground culvert option to further improve water quality at the Colorado Lagoon. However, this project was not included in the certified EIR. Under this implementation alternative an open channel or underground culvert would be built to replace the existing concrete box culvert that connects Colorado Lagoon and Marine Stadium. The open channel would be built parallel to the existing culvert and run through Marina Vista Park. The open channel may be characterized by gently sloping banks, rock riprap construction, native landscaping, and a trail along the banks. Creating an open channel between the water bodies would improve tidal flushing by increasing the tidal range and improving water and habitat quality. In addition, it would provide improved flood flow conveyance.

5.1.3 REMOVE CONTAMINATED SEDIMENT - DREDGING

Dredging is the removal of accumulated sediments from the lagoon bottom. In general, surface layers of loose nutrient rich organic material and contaminated sediments are removed from targeted areas. There are two methods proposed for dredging at Colorado Lagoon, dry dredging and wet dredging. The dry dredge method would require the temporary installment of a dam to isolate the area to be dredged. The dredge area would then be drained and bottom sediments dewatered. An excavator would then be used to remove the dry sediment, which would be temporarily stored nearby; the appropriate BMPs, such as plastic tarps and containment structures, will be placed around the sediment storage area to prevent the movement of contaminated sediments. The sediment will be transported to a Class 1 hazardous waste disposal facility.

The second method is wet dredging, under this method the dredge area would not be drained and dewatered prior to dredging. The dredge area would be separated by a silt curtain however, to isolate the work area and prevent mixing with other parts of the Lagoon. Clamshell/bucket type dredging equipment would be used, work would take place from the shoreline or through the use of temporary shore perpendicular berms or piers to allow access further into the Lagoon. As previously described, dredged sediment would be temporarily be stored nearby on the north shore of the Lagoon; once dry the sediment will be trucked to an appropriate disposal area.

5.1.4 REDIRECT STORMDRAINS

Four of the stormdrains currently discharging into Colorado Lagoon may be redirected to discharge stormwater flows to Marine Stadium and the dry weather flow would be directed to the sanitary sewer. This project would require approximately 8,000 linear feet of stormdrain line that would connect to the existing stormdrain system. This would also require the construction of a double-box culvert outlet structure to be constructed at Marine Stadium. A low-flow diversion system would be constructed to divert non-stormwater flows from the stormdrain to the sanitary sewer line. An underground storage box and pump unit would also be constructed to temporarily store the non-stormwater flow until it can be conveyed into the sewer system.

5.1.5 LOW FLOW DIVERSION

The redirection of non-stormwater flow will reduce the dry weather pollutant loading into Colorado Lagoon. Under this implementation alternative a low flow diversion device would be used to divert non-stormwater flows from Colorado Lagoon to the sanitary sewer. A low flow diversion is a device that routes urban non-stormwater runoff away from the stormdrain system or waterbody to the sanitary sewer system for treatment. Low flow diversion devices could be installed a short distance upstream from the stormdrain discharge point in order to divert flows prior to discharge. The diversion device may be designed with a storm flow bypass, so that stormwater flows may continue to directly discharge into the Lagoon. As part of this implementation alternative a wet well and pump station would also be constructed in order to temporarily store the diverted flow until it can be conveyed to the sanitary sewer system.

5.1.6 INSTALL VEGETATED BIOSWALES

Vegetated bioswales are constructed drainage ways used to convey stormwater runoff. Vegetation in bioswales allows for the filtering of pollutants, and infiltration of runoff into groundwater. Broad swales on flat slopes with dense vegetation are the most effective at reducing the volume

of runoff and pollutant removal. Bioswales planted with native vegetation offer higher resistance to flow and provide a better environment for filtering and trapping pollutants from stormwater. Vegetated bioswales generally have a trapezoidal or parabolic shape with relatively flat side slopes. Individual vegetated bioswales generally treat small drainage areas (five acres or less). A properly designed vegetated swale may achieve a 25 to 50 percent reduction in particulate pollutants conservatively, including sediment and sediment-attached metals. The hydrocarbons, lead, and zinc removal efficiencies for vegetated swales are 62%, 67%, and 71%, respectively (USEPA, 1999).

5.1.6 TRASH SEPARATION DEVICES

Trash separation devices capture almost all trash deposited into a storm drain system. A trash separation device diverts the incoming flow of storm water and pollutants into a pollutant separation and containment chamber. Solids within the separation chamber are kept in continuous motion, and are prevented from blocking the screen so that water can pass through the screen and flow downstream. Solid pollutants including trash, debris and coarse sediments are retained in a centrally located solids catchment chamber with the heavier solids ultimately settling into the base of the unit or sump.

An example of trash separation technology is the Continuous Deflective Separation (CDS) unit, developed by CDS Technologies, Inc. When applied to storm water, the CDS unit is designed to capture and retain sediments, floatable and settleable trash and debris over a wide range of flow conditions (up to 300 cubic feet per second (cfs)). The fine screens used in storm water applications vary in size from 1.2 – 4.7 mm (0.048-0.185 inch). The CDS units are placed underground and are appropriate for ultra urban retrofit situations where space is limited. In general, a CDS unit occupies about 4-1/2 square feet of surface area for each cfs that it treats, with the bulk of the installation being well below grade. The solids can be removed using a vector truck, a removable basket or a clam shell depending on the user's preference and size of the unit. Based on climate conditions in Southern California, CDS units installed for the trash TMDL can be cleaned once per storm season. For new installations, it is recommended to check the condition of the unit after every runoff event for the first 30 days. Based on the behavior of the unit relative to storm events, inspections can be scheduled on projections using storm events vs. pollutant buildup. For ongoing operation, the unit should be inspected at least once every 30 days during the wet weather season. The floatables should be removed and the sump cleaned when the sump is above 85% full. At least once a year, the unit should be pumped down and the screen carefully inspected for damage and to ensure that the screen is properly fastened.

5.2 NON-STRUCTURAL BMPS

Non-structural BMPs include educational and pollution prevention practices designed to improve water quality by reducing OC pesticides, PCBs, PAHs, sediment toxicity, and metals sources. They do not involve fixed, permanent facilities, and they usually work by changing behavior through control programs that include, but are not limited to prevention, education, and regulation. Less significant adverse impacts on the environment are anticipated for these controls. These programs are described below:

5.2.1 PUBLIC EDUCATION AND OUTREACH

Education and outreach to residents may minimize the potential for contamination of stormwater runoff by encouraging residents and businesses to pick up litter, minimize runoff from residential and commercial facilities, and control excessive irrigation. The public is often unaware of the

fact that contamination is caused by polluted runoff as excess water discharged on streets and lawns ends up in Colorado Lagoon.

Local agencies can provide educational materials to the public via television, radio, and print media, and by distributing brochures, flyers, and community newsletters, creating information hotlines to outreach to educators and schools, developing community events, and supporting volunteer monitoring and cleanup programs.

5.2.2 STREET CLEANING

Street and parking lot cleaning may minimize trash and pollutants loading to urban storm drains. This management measure involves employing pavement cleaning practices such as street sweeping on a regular basis to minimize trash, sediment, debris and other pollutants that are potential sources of pollution which can end up in receiving waters. There are three types of street sweepers: mechanical, vacuum filter, and regenerative air sweepers (U.S. EPA, 2006).

5.2.3 STORM DRAIN CLEANING

Routine cleaning of the storm drain system reduces the amount of trash entering the river, prevents clogging, and ensures the flood control capacity of the system. Cleanings may occur manually or with evacuators, vacuums, or bucket loaders. A successful storm drain cleaning program includes regular inspection and cleaning of catch basins and storm drain inlets, increased inspection and cleaning in areas with high trash accumulation, accurate recordkeeping, cleaning immediately prior to the rainy season to remove accumulated trash, and proper storage and disposal of collected material. (CASQA, 2003a)

5.2.4 STORM DRAIN STENCILING

Storm drain inlet stenciling is another means of educating the public about the direct discharge of stormwater to receiving waters and the effects of polluted runoff on receiving water quality. Stenciling can be conducted in partnership with other agencies and organizations to garner greater support for educational programs (USEPA, 2005).

6. SETTING, IMPACTS, AND MITIGATION

6.1 INTRODUCTION

This section presents the environmental setting, impacts, and mitigation, where applicable, for the proposed implementation alternatives evaluated in this draft Substitute Environmental Document (SED). The implementation alternatives for achieving compliance with the Colorado Lagoon OC Pesticides, PCBs, PAHs, Sediment Toxicity, and Metals TMDL are described in detail in this document and in the TMDL Staff Report. Each of these implementation alternatives has been independently evaluated in this draft SED. The environmental setting for the Colorado Lagoon OC Pesticides, PCBs, PAHs, Sediment Toxicity, and Metals TMDL is discussed, as well as the installation, operation, and maintenance activities associated with the OC Pesticides, PCBs, PAHs, Sediment Toxicity, and Metals TMDL. There is also a discussion of the site-specific and device-specific environmental impacts from implementing the OC Pesticides, PCBs, PAHs, Sediment Toxicity, and Metals TMDL. The environmental checklist, which includes the potential negative environmental impacts of the Implementation Alternatives is also included in this section.

6.1.1 APPROACH TO ENVIRONMENTAL SETTING AND IMPACT ANALYSIS

Any potential environmental impacts associated with the waterbodies of concern in the Colorado Lagoon OC Pesticides, PCBs, PAHs, Sediment Toxicity, and Metals TMDL depend upon the specific compliance projects selected by the responsible jurisdictions, most of whom are public agencies subject to their own CEQA obligations. (See Pub. Res. Code § 21159.2.) This CEQA substitute environmental document identifies broad mitigation approaches that could be considered at the program level. Consistent with PRC§21159, the substitute environmental document does not engage in speculation or conjecture, but rather considers the reasonably foreseeable environmental impacts of the foreseeable methods of compliance, the reasonably foreseeable feasible mitigation measures, and the reasonably foreseeable alternative means of compliance, which would avoid or reduce the identified impacts.

Within each of the sections listed above, this draft SED evaluates the impacts of each implementation alternative relative to the subject resource area. The physical scope of the environmental setting and the analysis in this SED is the Colorado Lagoon and surrounded area as shown in Figure 6-1. This area is the geographic area for assessing impacts of the different implementation alternatives, because the discharge of OC pesticides, PCBs, PAHs, and metals to this area would be controlled and/or eliminated by any one of or a combination of the implementation alternatives. Also, any potential impacts of implementing the proposed alternatives would be focused in this area.

The implementation alternatives in this draft SED are evaluated at a program level for impacts for each resource area. An assumption is made that a more detailed project level analysis will be conducted by all responsible agencies and jurisdictions once their mode of achieving compliance with the OC Pesticides, PCBs, PAHs, Sediment Toxicity, and Metals TMDL has been determined. The analysis in this draft SED assumes that, project proponents will design, install, and maintain implementation measures following all applicable laws, regulations, ordinances, and formally adopted municipal and/or agency codes, standards, and practices. Several handbooks are available and currently used by municipal agencies that provide guidance for the selection and implementation of BMPs (Caltrans, 2002, CASQA, 2003a, CASQA, 2003b, WERF, 2005).

6.1.2 PROGRAM LEVEL VERSUS PROJECT LEVEL ANALYSIS

As previously discussed, the Regional Board is the lead agency for the TMDL program, while the responsible agencies are the lead agencies for any and all projects implemented, within their jurisdiction, to comply with the program. The Regional Board does not specify the actual means of compliance by which responsible agencies choose to comply with the TMDL. Therefore, the implementation alternatives are mostly evaluated at a program level in this draft SED. The alternatives assessed at a program level generally are projects that would be implemented as part of the TMDL compliance. PRC §21159 places the responsibility of project level analysis on the agencies that will implement the Regional Board's TMDL.

6.1.3 ENVIRONMENTAL SETTING

The Colorado Lagoon is located in the southeastern portion of the City of Long Beach as shown in Figure 6-1. The Colorado Lagoon is a V-shaped tidal water body that is connected to Alamitos Bay and the Pacific Ocean through an underground tidal culvert to Marine Stadium. The Lagoon is approximately 15 acres, although the exact area can vary due to tidal influence. The Lagoon provides estuarine habitat and is heavily used by local residents for recreation. The lagoon and surrounding area is home to a variety of wildlife and is an important stop over for thousands of migratory birds, including endangered species, along the Pacific Coast Flyway. Recreational activities at the lagoon include swimming, fishing, wildlife viewing, and picnicking.

Colorado Lagoon watershed is approximately 1,172 acres and divided into five sub-basins that discharge storm water and urban dry weather runoff to the Colorado Lagoon (Figure 6-2). Each of the sub-basins are served by a major storm sewer trunkline and supporting appurtenances that collect and transport storm water and urban dry weather runoff to Colorado Lagoon. Surface water runoff within the watershed occurs as overland runoff into curb inlets and catch basins, and as sheet flow from near shore areas (City of Long Beach, 2004). Each sub-basin discharges to the Colorado Lagoon through individual storm drainage systems. The sub-basins are as follows:

- Sub-basin A.
  Discharges to Colorado Lagoon via a 63-inch reinforced concrete pipe discharging into the north part of the west arm. The drainage pattern is generally to the south and east. Sub-basin A contains the heaviest concentration of commercial activities mainly concentrated along Anaheim Street and the northern part of Redondo Avenue.

- Sub-basin B.
  Discharges to Colorado Lagoon via a 54-inch reinforced concrete pipe discharging into the north part of the north arm. The drainage pattern is generally to the south and west. Sub-basin B is predominately park/golf course open space with some residential in the north east corner.

- Sub-basin C.
  Discharges to Colorado Lagoon via a 48-inch reinforced concrete pipe discharging into the mid-point of the north arm. The drainage pattern is generally to the south and west. Sub-basin C is almost entirely residential with a few commercial activities at the eastern boundary.

- Sub-basin D.
  Discharges to Colorado Lagoon via a 24-inch reinforced concrete pipe discharging into the south part of the west arm. The drainage pattern is generally to the north and east. Sub-basin D is almost entirely residential with some schools and other public facilities.

- Sub-basin E.
  Discharges to Colorado Lagoon via a 48-inch reinforced concrete pipe discharging into the west arm. The drainage pattern is generally to the south and east. Sub-basin E is mainly residential with commercial activities located along 7th Street, Coronado and Redondo Avenues to the west, and public facilities to the north.

Several other smaller storm drains serve the areas immediately adjacent to the lagoon.
These smaller storm drains can contribute small amounts of contaminants and cause minor impacts of each of the sub-basins listed above.

The climate in the southern California coastal region is typical of the dry Mediterranean climate. Summers are relatively warm and dry, and winters are mild and wet. Based on daily rainfall data for the years 1996-2006 (County of Los Angeles, 2007), annual rainfall (1996 to 2006) in the vicinity of City of Long Beach averages 13.27 inches and varies from 4.08 inches (year of 2002) to a maximum of 27.33 inches (year of 2005). Eighty-two percent of the rainfall occurs between November and March with most of the precipitation occurring during just a few major storms. Storm events concentrated in the wet-weather months produce runoff usually ranging in duration from one-half day to several days. Discharge during runoff from storm events is commonly 10 to 100 times greater than at other times. Storm events and the resulting high stream flows are highly seasonal, grouped heavily in the months of November through March, with an occasional major storm as early as September and as late as May. Rainfall is rare in other months, and major storm flows historically have not been observed outside the wet-weather season.

There are no surface water bodies within the Colorado Lagoon watershed other than the lagoon itself. Since the Lagoon is a natural low point in the watershed, it accumulates pollutants deposited over the entire watershed that enter the storm drains by storm flows and dry weather runoff. During rain events stormwater runoff is directed to the lagoon through a series of pipelines and overland flow. During dry weather, runoff from activities such as lawn watering, washing down surfaces, and other illicit discharges is directed to the lagoon by the same pipelines.

The land uses in the Colorado Lagoon Watershed are primarily residential, open space, commercial, and institutional. Residential is the dominant land use accounting for approximately 66 % of the land use. Open space, commercial, and institutional land uses account for 19%, 10%, and 5%, respectively. The available open space is parks and golf courses. The watershed does not support space for new development, and redevelopment of existing occurs intermittently throughout (City of Long Beach, 2004).

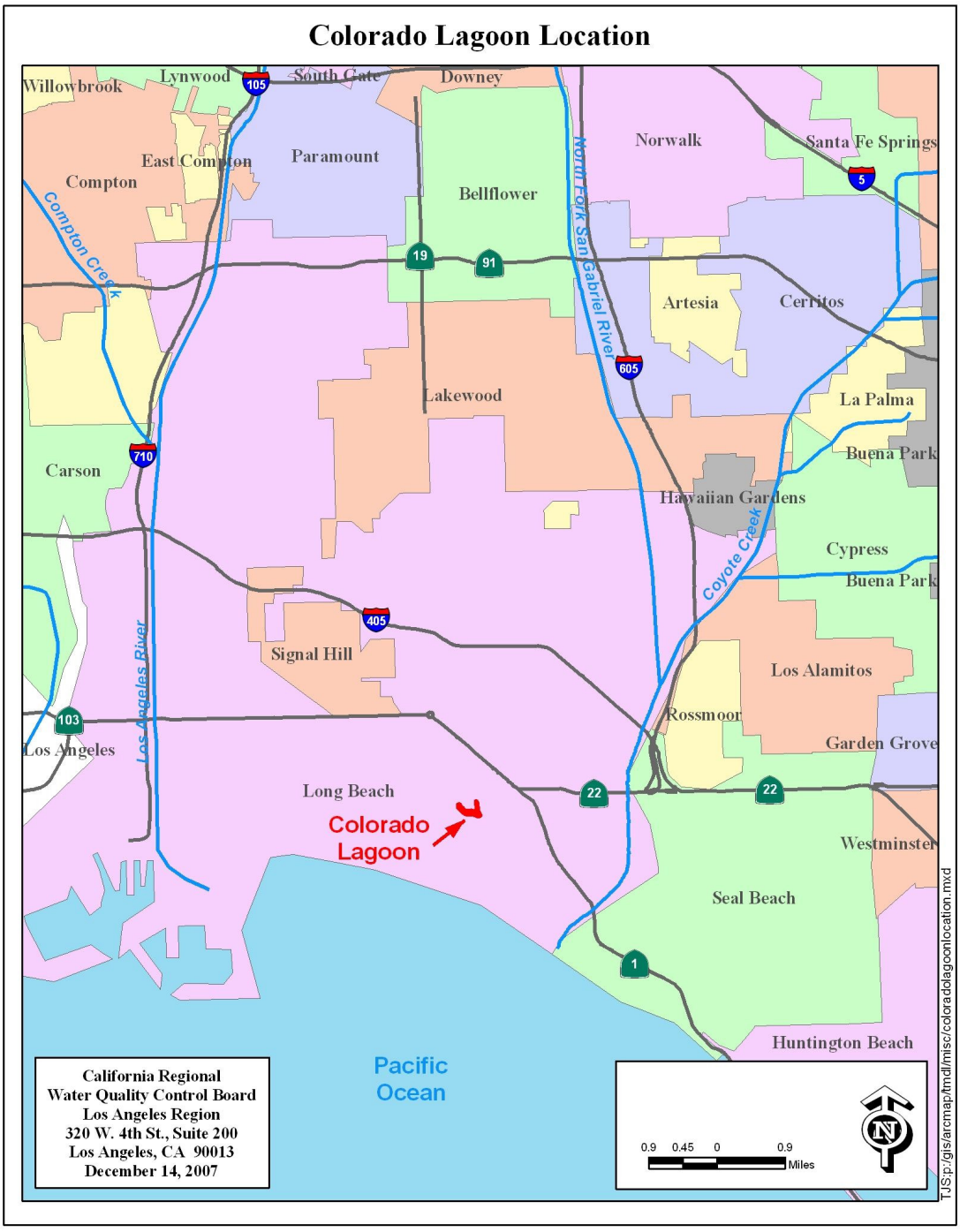

Figure 6-1. Location of Colorado Lagoon

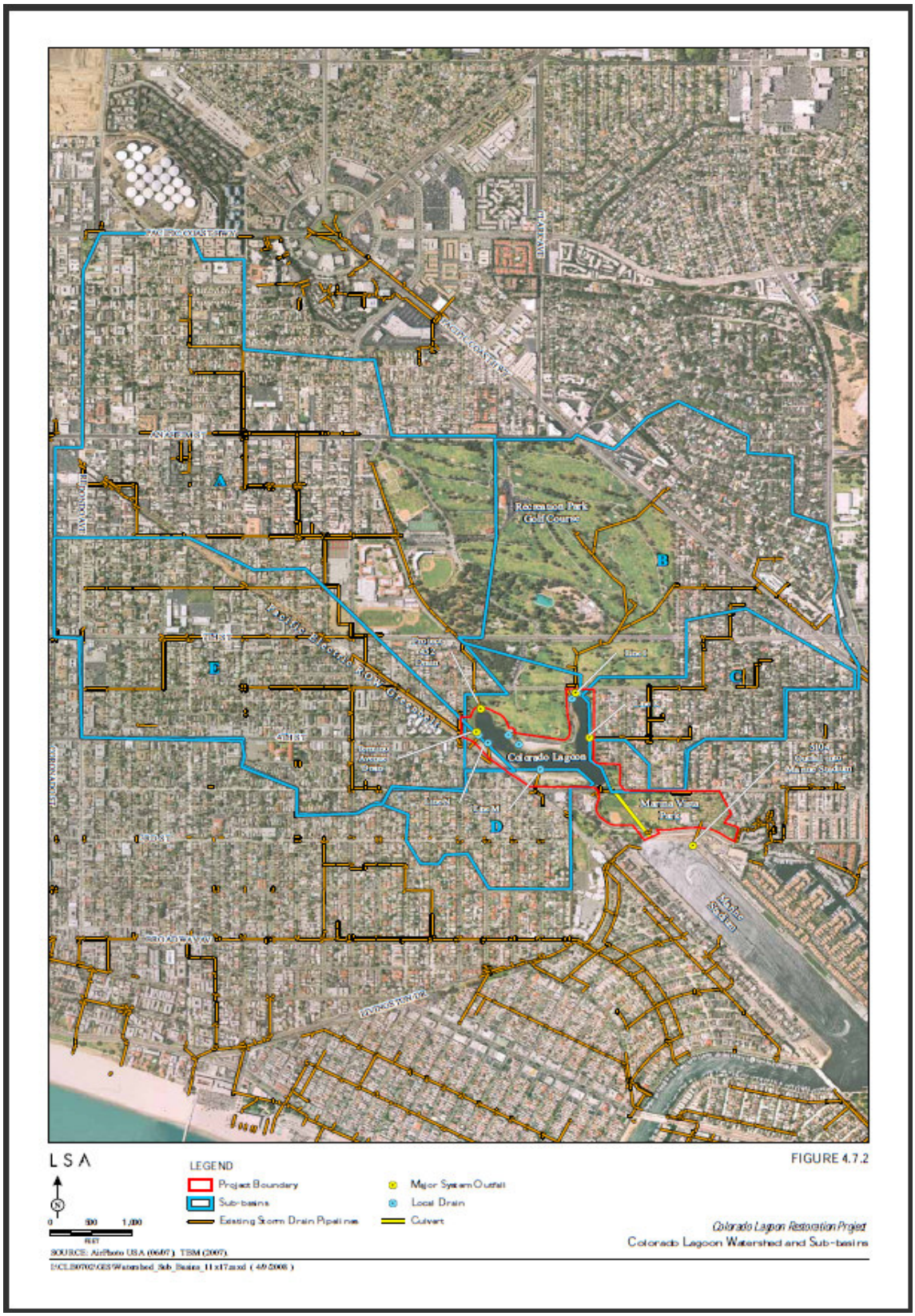

Figure 6-2. The Colorado Lagoon Watershed and Associated Drainage Systems

6.1.4 BENEFICIAL USES OF COLORADO LAGOON

The various uses of waters in the Los Angeles Region, referred as beneficial uses, are designated in the Basin Plan (LARWQCB, 1994). These beneficial uses are the cornerstone of the State and Los Angeles Regional Water Quality Control Board's effort to protect water quality, as water quality objectives are set at levels that will protect the most sensitive beneficial use of a waterbody. Brief descriptions of the beneficial uses most likely to be impaired due to OC pesticides, PCBs, PAHs, sediment toxicity, and metals in the Lagoon are provided in this section.

The Basin Plan defines six beneficial uses for Colorado Lagoon (Table 6-1). These uses are recognized as existing (E) and potential (P). OC pesticides, PCBs, PAHs, sediment toxicity, and metals loading to Colorado Lagoon may result in impairments of beneficial uses associated with recreation (REC 1 and REC 2), commercial and sport fishing (COMM), aquatic life (WARM and WILD), and shellfish harvesting (SHELL). The designated beneficial uses identified as impaired due to elevated levels of OC pesticides, PCBs, PAHs, sediment toxicity, and metals in the Colorado Lagoon are briefly described below.

- **Habitat-Related Uses (WARM and WILD)**
  Several habitat-related beneficial uses are designated for Colorado Lagoon. These uses include warm freshwater habitat and wildlife habitat.

- **Human Consumption of Aquatic Organisms (COMM and SHELL)**
  Beneficial uses of Colorado Lagoon include commercial or recreational collection of fish, shellfish, or other organisms including, but not limited to, uses involving organisms intended for human consumption or bait purposes.

- **Recreational Uses (REC-1 and REC-2)**
  Water Contact Recreation (REC-1) and Non-Contact Water Recreation (REC-2) are defined as uses of water for recreational activities involving body contact and proximity to water. Some of these activities include swimming and fishing, and where the ingestion of water is reasonably possible.

Table 6-1. Beneficial Uses of Colorado Lagoon (LARWQCB, 1994)

Waterbody	Hydro. Unit No.	REC1	REC2	COMM	WARM	WILD	SHELL
Colorado Lagoon	405.12	E	E	E	P	E	E

Beneficial use designations apply to all tributaries to the indicated waterbody, if not listed separately.
E: Existing beneficial use
P: Potential beneficial use

6.2 DESCRIPTION OF THE STORM DRAIN SYSTEM

The storm drain system in the Colorado Lagoon Watershed is a network of underground pipes and open channels that were designed to prevent flooding. Runoff drains from the streets, into the gutters, and enters the system through an opening in the curb called a catch basin. The storm drain system receives no treatment or filtering process and is completely separate from the City of Long Beach and Los Angeles County's sanitary sewer systems. Most of the storm drain systems in the Colorado Lagoon TMDL area are owned and operated by the Los Angeles County

Department of Public Works (LACDPW) and City of Long Beach. The Colorado Lagoon receives the majority of its inflow from numerous storm water drains. The Lagoon is located at a natural low point in the watershed, so it accumulates pollutants deposited over the entire watershed that enter the storm drains by storm flows and dry weather runoff.

6.3 SITE SPECIFIC ENVIRONMENTAL ANALYSIS

Pursuant to Section 21159 of the Public Resources Code, an agency's environmental analysis must include an analysis of a reasonable range of specific sites. The following section includes a discussion of site-specific and device-specific environmental impacts from implementing the OC Pesticides, PCBs, PAHs, Sediment Toxicity, and Metals TMDL. The municipality or public agency decisions in designing and siting structural devices may depend on the catchment land use. Site specific implementation projects will likely be employed throughout the OC Pesticides, PCBs, PAHs, Sediment Toxicity, and Metals TMDL area to reduce their loading to Colorado Lagoon Watershed, and specific implementation projects will be best suited to particular land uses.

6.4. CEQA CHECKLIST AND DETERMINATION

6.4.1 ENVIRONMENTAL CHECKLIST

	ENVIRONMENTAL CHECKLIST	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant	No Impact
1.	**Earth. Will the proposal result in:**				
	a. Unstable earth conditions or in changes in geologic substructures?	X			
	b. Disruptions, displacements, compaction or overcoming of the soil?	X			
	c. Change in topography or ground surface relief features?	X			
	d. The destruction, covering or modification of any unique geologic or physical features?	X			
	e. Any increase in wind or water erosion of soils, either on or off the site?	X			
	f. Changes in deposition or erosion of beach sands, or changes in siltation, deposition or erosion which may modify the channel of a river or stream or the bed of the ocean or any bay, inlet or lake?	X			
	g. Exposure of people or property to geologic hazards, such as earthquakes, landslides, mudslides, ground failure, or similar hazards?	X			
2.	**Air. Will the proposal result in:**				
	a. Substantial air emissions or deterioration of ambient air quality?	X			
	b. The creation of objectionable odors?	X			
	c. Alteration of air movement, moisture or temperature, or any change in climate, either locally or regionally?				X
3.	**Water. Will the proposal result in:**				

	ENVIRONMENTAL CHECKLIST	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant	No Impact
	a. Changes in currents, or the course of direction or water movements, in either marine or fresh waters?	X			
	b. Changes in absorption rates, drainage patterns, or the rate and amount of surface water runoff?	X			
	c. Alterations to the course of flow of flood waters?			X	
	d. Change in the amount of surface water in any water body?	X			
	e. Discharge into surface waters, or in any alteration of surface water quality, including but not limited to temperature, dissolved oxygen, or turbidity?	X			
	f. Alteration of the direction or rate of flow of ground waters?				X
	g. Change in the quantity or quality of ground waters, either through direct additions or withdrawals, or through interception of an aquifer by cuts or excavations?				X
	h. Substantial reduction in the amount of water otherwise available for public water supplies?				X
	i. Exposure of people or property to water related hazards such as flooding or tidal waves?	X			
4.	**Plant Life. Will the proposal result in:**				
	a. Change in the diversity of species, or number of any species of plants (including trees, shrubs, grass, crops, microflora and aquatic plants)?	X			
	b. Reduction of the numbers of any unique, rare or endangered species of plants?				X
	c. Introduction of new species of plants into an area, or in a barrier to the normal replenishment of existing species?			X	
	d. Reduction in acreage of any agricultural crop?				X
5.	**Animal Life. Will the proposal result in:**				

	ENVIRONMENTAL CHECKLIST	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant	No Impact
	a. Change in the diversity of species, or numbers of any species of animals (birds, land animals including reptiles, fish and shellfish, benthic organisms, insects or microfauna)?			X	
	b. Reduction of the numbers of any unique, rare or endangered species of animals?	X			
	c. Introduction of new species of animals into an area, or result in a barrier to the migration or movement of animals?			X	
	d. Deterioration to existing fish or wildlife habitat?	X			
6.	**Noise. Will the proposal result in:**				
	a. Increases in existing noise levels?	X			
	b. Exposure of people to severe noise levels?	X			
7.	**Light and Glare. Will the proposal:**				
	a. Produce new light or glare?				X
8.	**Land Use. Will the proposal result in:**				
	a. Substantial alteration of the present or planned land use of an area?				X
9.	**Natural Resources. Will the proposal result in:**				
	a. Increase in the rate of use of any natural resources?				X
	b. Substantial depletion of any nonrenewable natural resource?				X

	ENVIRONMENTAL CHECKLIST	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant	No Impact
10.	**Risk of Upset. Will the proposal involve:**				
	a. A risk of an explosion or the release of hazardous substances (including, but not limited to: oil, pesticides, chemicals or radiation) in the event of an accident or upset conditions?	X			
11.	**Population. Will the proposal:**				
	a. Alter the location, distribution, density, or growth rate of the human population of an area?				X
12.	**Housing. Will the proposal:**				
	a. Affect existing housing, or create a demand for additional housing?				X
13.	**Transportation/Circulation. Will the proposal result in:**				
	a. Generation of substantial additional vehicular movement?			X	
	b. Effects on existing parking facilities, or demand for new parking?	X			
	c. Substantial impact upon existing transportation systems?			X	
	d. Alterations to present patterns of circulation or movement of people and/or goods?			X	
	e. Alterations to waterborne, rail or air traffic?				X
	f. Increase in traffic hazards to motor vehicles, bicyclists or pedestrians?			X	
14.	**Public Service. Will the proposal have an effect upon, or result in a need for new or altered governmental services in any of the following areas:**				

	ENVIRONMENTAL CHECKLIST	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant	No Impact
	a. Fire protection?			X	
	b. Police protection?			X	
	c. Schools?			X	
	d. Parks or other recreational facilities?	X			
	e. Maintenance of public facilities, including roads?	X			
	f. Other governmental services?	X			
15.	**Energy. Will the proposal result in:**				
	a. Use of substantial amounts of fuel or energy?			X	
	b. Substantial increase in demand upon existing sources of energy, or require the development of new sources of energy?			X	
16.	**Utilities and Service Systems. Will the proposal result in a need for new systems, or substantial alterations to the following utilities:**				
	a. Power or natural gas?			X	
	b. Communications systems?			X	
	c. Water?				X
	d. Sewer or septic tanks?	X			
	e. Storm water drainage?	X			
	f. Solid waste and disposal?	X			
17.	**Human Health. Will the proposal result in:**				
	a. Creation of any health hazard or potential health hazard (excluding mental health)?	X			
	b. Exposure of people to potential health hazards?	X			

	ENVIRONMENTAL CHECKLIST	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant	No Impact
18.	**Aesthetics. Will the proposal result in:**				
	a. The obstruction of any scenic vista or view open to the public?			X	
	b. The creation of an aesthetically offensive site open to public view?			X	
19.	**Recreation. Will the proposal result in:**				
	a. Impact upon the quality or quantity of existing recreational opportunities?			X	
20.	**Archeological/Historical. Will the proposal:**				
	a. Result in the alteration of a significant archeological or historical site structure, object or building?	X			
21.	**Mandatory Findings of Significance**				
	Potential to degrade: 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, 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?	X			
	Short-term: Does the project have the potential to achieve short-term, to the disadvantage of long-term, environmental goals? (A short-term impact on the environment is one which occurs in a relatively brief, definitive period of time, while long-term impacts will endure well into the future.)			X	

	ENVIRONMENTAL CHECKLIST	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant	No Impact
	Cumulative: Does the project have impacts which are individually limited, but cumulatively considerable? (A project may impact on two or more separate resources where the impact on each resource is relatively small, but where the effect of the total of those impacts on the environment is significant.)	X			
	Substantial adverse: Does the project have environmental effects which will cause substantial adverse effects on human beings, either directly or indirectly?	X			

6.4.2 DISCUSSION OF ENVIRONMENTAL EVALUATION

The analysis of potential environmental impacts is based on the numerous alternative means of compliance available for controlling OC pesticides, PCBs, PAHs, sediment toxicity, and metals in Colorado Lagoon in response to the proposed Basin Plan amendment. These include structural Best Management Practices (BMPs) such as cleaning culvert, repair of tidal gates, sill/structural impedance removal, contaminated sediment removal, redirect of low flows and first flush storm, vegetated Bioswale installation, trash separation device installation, as well as no-structural BMPs. Construction of open channel or parallel underground culvert between Lagoon and Marine Stadium is also considered to further improve water quality. Potential impacts are discussed below. Many of the mitigation measures identified are common practices currently employed by agencies when planning and implementing storm water BMPs. Agencies such as Caltrans, CASQA, and WERF publish handbooks containing guidance on the selection, siting, design, installation, monitoring, and evaluation of storm water BMPs (Caltrans, 2002, CASQA, 2003a, CASQA, 2003b, WERF, 2005). The evaluation considers whether the environmental impact indicated will have a substantial, adverse change in any of the physical conditions within the area affected by the activity. In addition, the evaluation discusses environmental effects in proportion to their severity and probability of occurrence.

Pursuant to section 13360 of the Water Code, the Regional Board cannot dictate which compliance measures responsible agencies may choose to adopt or which mitigation measures they would employ to implement the OC Pesticides, PCBs, PAHs, Sediment Toxicity, and Metals TMDL. However, the Regional Board does recommend that appropriate compliance and mitigation measures as discussed herein, which are readily available and generally considered to be consistent with industry standards, be applied in order to reduce, and if possible avoid, potential environmental impacts, such that there is no significant impact. Since the decision to perform these measures is strictly within the responsibility and jurisdiction of the individual implementing agencies, such measures can and should be adopted by these agencies. (Title 14, California Code of Regulations, Section 15091(a)(2).)

The following analysis considers a range of structural and non-structural BMPs that might be used, but is by no means an exhaustive list of available BMPs. When BMPs are selected for implementation, a project level and site-specific CEQA analysis must be performed by the responsible agencies.

1. **Earth. a.** Will the proposal result in unstable earth conditions or in changes in geologic substructures?

Answer: Potentially Significant Impact

The proposed project site is underlain by younger alluvial soils, such as soft clay, silt, silty sand, and sand based on soil testing in the project area. The clays and sandy clays abundant in this area have the potential for volume changes (expansion/compaction) due to cycles of wetting and drying. However, since the groundwater is about 5ft below ground surface (bgs) in this area, it is likely that the soils will remain relatively wet and not experience wet/dry cycles. This natural situation reduces the potential impacts of soil disruptions in the Colorado Lagoon area. Moreover, adherence to all applicable seismic codes and requirements during specific project implementation would reduce and mitigated potential impacts related to soil disruptions, displacements, or compaction. Likewise a geotechnical hazard – resistant designs can be incorporated into the final engineering project designs for the implementation alternatives.

The unconsolidated silty sands underlain by sandy silts and a shallow groundwater table make the potential for subsidence and liquefaction risks moderate to high. According to the California Department of Conservation's Seismic Hazard Zones Map for the *Long Beach* quadrangle, the site is located within an area where liquefiable materials are mapped and/or where liquefaction has occurred in the past. In order to mitigate this risk the implementation alternatives may be designed in accordance with applicable building codes such as Caltrans and American Association of State Highway and Transportation Officials (AASHTO). Also, the proposed implementation alternatives do not include habitable structures which reduce the risk to persons.

Clean Culvert, Repair Tidal Gates, and Remove Sill/Structural Impedances

These implementation alternatives would include cleaning out and repairing the existing culvert between Colorado Lagoon and Marine Stadium. This alternative would not result in unstable earth conditions or in changes in geologic substructures because this alternative does not include earth moving activities.

Build Open Channel or Parallel Underground Culvert between Lagoon and Marine Stadium

Under this implementation alternative a large project of constructing an open channel or underground culvert between Colorado Lagoon and Marine Stadium would be built. This would be a large project that would include soil excavation and ground disturbance that may potentially cause unstable earth conditions during construction. An appropriate geological technical report should be prepared prior to construction activities to thoroughly review the potential geologic hazards and outline appropriate technical safety measures. This potential impact may be mitigated by responsible parties by adhering to all seismic codes and requirements and having the projects designed and engineered with geotechnical hazard-resistant manner. Additionally, applicable building codes for construction should be reviewed and adhered to as part of the implementation alternative.

Remove Contaminated Sediments - Dredging

Dredging involves the removal of contaminated sediments from the Lagoon, but would not be to the depth or scale which would cause unstable conditions or changes in the geological substructures. At this depth and scale, dredging should not result in unstable earth conditions.

Stormdrain Upgrades

This implementation alternative includes redirecting some stormdrains that currently discharge to the Lagoon to Marin Stadium, redirecting dry weather flows to the sanitary sewer, and directing

stormwater and dry weather run off to vegetated bioswales. In general these implementation alternatives are not expected to be to the size or scale which would result in unstable earth conditions or changes in the geologic substructures. Proper sizing and siting is necessary to ensure that BMPs are installed away from areas with loose or compressible soils, areas with slopes that could destabilize, or other high risk areas. Geological surveys can be conducted prior to installation to aid in siting the devices.

Non-Structural BMPs

Non-structural BMPs would involve no change to the physical environment either directly or indirectly and would have no impact on earth conditions or geologic substructures.

This SED impact analysis concludes that there are potentially significant impacts from implementation of the TMDL, but notes that there are mitigation measures available to reduce potentially significant environmental impacts to less than significant levels. However, implementation of these mitigation measures are within the jurisdiction of the responsible agencies listed in this TMDL (Title 14, California Code of Regulations, Section 15091(a)(2)). 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 (Title 14, California Code of Regulations, Section 15091(a)(3)).

1. Earth. b. Will the proposal result in disruptions, displacements, compaction or overcoming of the soil?

Answer: Potentially Significant Impact

The proposed project site is underlain by younger alluvial soils, such as soft clay, silt, silty sand, and sand, based on soil testing in the project area. The clays and sandy clays abundant in this area have the potential for volume changes (expansion/compaction) due to cycles of wetting and drying. However, since the groundwater is about 5ft bgs in this area it is likely that the soils will remain relatively wet and not experience wet/dry cycles. This natural situation reduces the potential impacts of soil disruptions in the Colorado Lagoon area. Moreover, adherence to all applicable seismic codes and requirements during specific project implementation would reduce and mitigate potential impacts related to soil disruptions, displacements, or compaction. Likewise a geotechnical hazard – resistant designs can be incorporated into the final engineering project designs for the implementation alternatives.

As a result of unconsolidated silty sands underlain by sandy silts and a shallow groundwater table, potential subsidence and liquefaction risks are considered moderate to high. According to the California Department of Conservation's Seismic Hazard Zones Map for the *Long Beach* quadrangle, the site is located within an area where liquefiable materials are mapped and/or where liquefaction has occurred in the past. In order to mitigate this risk, the implementation alternatives may be designed in accordance with applicable building codes such as Caltrans and AASHTO. Also, the proposed implementation alternatives do not include habitable structures which reduce the risk to persons.

Clean Culvert, Repair Tidal Gates, and Remove Sill/Structural Impedances

These implementation alternatives would include cleaning out and repairing the existing culvert between Colorado Lagoon and Marine Stadium. This alternative would not result in disruptions, displacements, compaction or overcoming of the soil because this alternative does not include earth moving activities.

Build Open Channel or Parallel Underground Culvert between Lagoon and Marine Stadium

Under this implementation alternative a large project of constructing an open channel or underground culvert between Colorado Lagoon and Marine Stadium would be built. This would be a large project that would include soil excavation and ground disturbance that may potentially cause disruptions, displacements, compaction or overcoming of the soil. This potential impact may be mitigated by responsible parties by adhering to all seismic codes and requirements and having the projects designed and engineered with geotechnical hazard- resistant manner. Additionally, applicable building codes should be reviewed and adhered to as part of the implementation alternative.

Remove Contaminated Sediments - Dredging

Dredging will involve the removal of the top layers of contaminated sediment; however this will not be to the depth or scale which would result in disruptions, compactions, or overcoming on the soil. Contaminated layers of sediment and soil in the Lagoon bottom will be removed and displaced, however, this displacement is considered a positive impact.

Stormdrain Upgrades

This implementation alternative includes redirecting some stormdrains that currently discharge to the Lagoon to Marin Stadium, redirecting dry weather flows to the sanitary sewer, and directing stormwater and dry weather run off to vegetated bioswales. These alternatives will require soil excavation or ground disturbance that may potentially cause disruptions, displacements, compaction or overcoming of the soil. It is anticipated however, that the potential impact may be mitigated by adhering to seismic and geotechnical codes and requirements for the TMDL area.

Non-Structural BMPs

Non-structural BMPs would involve no change to the physical environment either directly or indirectly and would have no potential to cause disruptions, displacements, compaction or overcoming of the soil.

This SED impact analysis concludes that there are potentially significant impacts from implementation of the TMDL, but notes that there are mitigation measures available to reduce potentially significant environmental impacts to less than significant levels. However, implementation of these mitigation measures are within the jurisdiction of the responsible agencies listed in this TMDL (Title 14, California Code of Regulations, Section 15091(a)(2)). 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 (Title 14, California Code of Regulations, Section 15091(a)(3)).

1. **Earth. c.** Will the proposal result in change in topography or ground surface relief features?

Answer: Potentially Significant Impact

Clean Culvert, Repair Tidal Gates, and Remove Sill/Structural Impedances

These implementation alternatives would include cleaning out and repairing the existing culvert between Colorado Lagoon and Marine Stadium. This alternative would not result in changes in topography or ground relief features because it will take place within the concrete culvert already in place. There will be no grading, excavation, or topography disturbance as part of this implementation alternative.

Build Open Channel or Parallel Underground Culvert between Lagoon and Marine Stadium

The construction of a large open channel or underground culvert between the Lagoon and Marine Stadium would change the ground relief in the area. However, this is considered a positive impact since the creation of this open channel or underground culvert would improve the tidal flushing between these 2 waterbodies and improve water quality and habitat.

Remove Contaminated Sediment - Dredging

Dredging does require temporary storage of the dredge material near the Lagoon prior to disposal. The area where the dredge material is contained and stored for drying may be impacted by a temporary change in topography or surface relief. However, this impact would only be short-term and temporary as the dredge material will be properly disposed.

Stormdrain Upgrades

This implementation alternative includes redirecting some stormdrains from the Lagoon to Marin Stadium, redirecting dry weather flows to the sanitary sewer, and directing stormwater and dry weather run off to vegetated bioswales. These alternatives will require soil excavation or ground disturbance; however it is not expected that they would be to the size or scale that would impact topography or ground surface relief.

Non-Structural BMPs

Non-structural BMPs would involve no change to the physical environment either directly or indirectly and would have no impact on topography or ground surface relief features.

This SED impact analysis concludes that there are potentially significant impacts from implementation of the TMDL, but notes that there are mitigation measures available to reduce potentially significant environmental impacts to less than significant levels. However, implementation of these mitigation measures are within the jurisdiction of the responsible agencies listed in this TMDL (Title 14, California Code of Regulations, Section 15091(a)(2)). 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 (Title 14, California Code of Regulations, Section 15091(a)(3)).

1. Earth d. Will the proposal result in the destruction, covering or modification of any unique geologic or physical features?

Answer: Potentially Significant Impact

Clean Culvert, Repair Tidal Gates, and Remove Sill/Structural Impedances

These implementation alternatives would include cleaning out and repairing the existing culvert between Colorado Lagoon and Marine Stadium. Since these projects will be confined to the concrete culvert that is already in place it is not expected that they will result in change in the destruction, covering or modification of any unique geologic or physical features

Build Open Channel or Parallel Underground Culvert Between Lagoon and Marine Stadium

The construction of a large open channel or underground culvert between the Lagoon and Marine Stadium would change the general appearance of the area; however it would not result in the destruction, change, covering, or modification of any unique geologic or physical feature.

Remove Contaminated Sediment - Dredging

Dredging will remove the contaminated sediment from the Lagoon and will also require temporary storage of the dredge material near the Lagoon prior to disposal. However, these activities are not expected to be to the size or scale that would result in the destruction, covering, or modification of any unique geological or physical features. Moreover, dredging will be a temporary activating taking place in the Lagoon it will not permanently change the features of the landscape in the area.

Stormdrain Upgrades

This implementation alternative includes redirecting some stormdrains from the Lagoon to Marin Stadium, redirecting dry weather flows to the sanitary sewer, directing stormwater and dry weather run off to vegetated bioswales. These alternatives will require soil excavation or ground disturbance; however it is not expected that they would be to the size or scale that would permanently destruct, cover, or modify any unique geological or physical features.

Non-Structural BMPs

Non-structural BMPs would involve no change to the physical environment either directly or indirectly and would have no potential to result in the destruction, covering or modification of any unique geologic or physical features.

This SED impact analysis concludes that there are potentially significant impacts from implementation of the TMDL, but notes that there are mitigation measures available to reduce potentially significant environmental impacts to less than significant levels. However, implementation of these mitigation measures are within the responsible and jurisdiction of the responsible agencies listed in this TMDL (Title 14, California Code of Regulations, Section 15091(a)(2)). 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 (Title 14, California Code of Regulations, Section 15091(a)(3)).

1. Earth. e. Will the proposal result in any increase in wind or water erosion of soils, either on or off the site?

Answer: Potentially Significant Impact

There is the potential for soil erosion to occur under the implementation alternatives.
Large volumes of soils and sediment will be dredged and excavated, which will expose areas of soil to wind and water erosion. However, upon the completion of dredging, development of the open channel or underground culvert, and stormdrain upgrades, erosion potential will be minimal. The potential for soil erosion will be temporary and is expected to cease with the cessation of construction and dredging activities. To mitigate soil erosion once projects are completed, all soils used in the project should be properly compacted in accordance with City of Long Beach (City) specifications, dredge material should be properly disposed, and slopes of the open channel can be stabilized with native vegetation. The implementation alternatives are subject to Storm Water Pollution Prevention Plan (SWPPP) requirements for erosion and sedimentation control during construction. BMPs should be undertaken to control runoff and erosion from earth-moving activities such as excavation, recontouring, and compaction. All trenching and recontouring activities should be performed under the observation of a qualified engineer. These measures will reduce the potential for wind or water erosion of soil from the area.

Clean Culvert, Repair Tidal Gates, and Remove Sill/Structural Impedances

These implementation alternatives would include cleaning out and repairing the existing culvert between Colorado Lagoon and Marine Stadium. Since these projects will be confined to the concrete culvert that is already in place they will not require ground disturbance or soil excavation. Thus, this implementation alternative is not expected to increase wind or water erosion of soils.

Build Open Channel or Parallel Underground Culvert Between Lagoon and Marine Stadium

The construction of a large open channel or underground culvert between the Lagoon and Marine Stadium would require extensive soil excavation and is a large construction project. There is the potential for this implementation alternative to expose soils to wind or water erosion on or off site. However, there are mitigation measures available to reduce the risk of soil erosion. The mitigation measures include development of the required SWPPP (under the general construction stormwater WDR) to include erosion and sediment control on site. The use of erosion control measures, such as erosion control blankets and tarps or plastic sheeting would reduce the risk of wind or water erosion during construction of the channel as well.

Remove Contaminated Sediments - Dredging

Dredging will include the temporary storage of dredge materials prior to disposal; this material may be subject to erosion processes. This can be mitigated by covering the dredge materials during rainy or windy conditions. Once the dredge material is dry and disposed of, the potential for erosion at the site will cease. Erosion may occur as a short-term impact but can be mitigated.

Stormdrain Upgrades

This implementation alternative includes redirecting some stormdrains from the Lagoon to Marin Stadium, redirecting dry weather flows to the sanitary sewer, and directing stormwater and dry weather run off to vegetated bioswales. Construction of stormdrain upgrades may result in

erosion. Construction plans should minimize clearing and grading activities, phase construction to limit soil exposure, and stabilize or protect soils from water and wind immediately. Likewise, construction sites are required to retain sediments on site, either by a general construction stormwater permit or through the construction program of the applicable MS4 permit. Generally vegetated stormdrain treatments, such as vegetated bioswales, help reduce soil erosion and increase infiltration.

Non-Structural BMPs

Non-structural BMPs would involve no change to the physical environment either directly or indirectly and would not result in increase in wind or water erosion of soils, either on or off the site.

This SED impact analysis concludes that there are potentially significant impacts from implementation of the TMDL, but notes that there are mitigation measures available to reduce potentially significant environmental impacts to less than significant levels. However, implementation of these mitigation measures are within the jurisdiction of the responsible agencies listed in this TMDL (Title 14, California Code of Regulations, Section 15091(a)(2)). 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 (Title 14, California Code of Regulations, Section 15091(a)(3)).

1. Earth. f. Will the proposal result in changes in deposition or erosion of beach sands, or changes in siltation, deposition or erosion which may modify the channel of a river or stream or the bed of the ocean or any bay, inlet or lake?

Answer: Potentially Significant Impact

Clean Culvert, Repair Tidal Gates, and Remove Sill/Structural Impedances

Implementation of this alternative requires no ground disturbance which would result in changes in deposition or erosion of beach sands, or changes in siltation, deposition or erosion which may modify the channel of a river or stream or the bed of the ocean or any bay, inlet or lake.

Build Open Channel or Parallel Underground Culvert between Lagoon and Marine Stadium

The construction of a large open channel or underground culvert between the Lagoon and Marine Stadium would improve tidal flushing by an increase in the tidal range, and result in corresponding changes in siltation, deposition or erosion which may overtime modify the bed of this constructed channel or the lagoon. However, the benefits of increased tidal flushing to both water quality and habitat are considered to outweigh the potential impacts of siltation.

Remove Contaminated Sediments - Dredging

Dredging will modify the Lagoon bed by removing material that has been deposited in the Lagoon from years of sedimentation processes. Dredging will not increase sedimentation in the Lagoon. There will be a change in the Lagoon bed under this implementation alternative, but it is a positive change and improves the Lagoon by removing contaminated sediment. There may be

increased sediment resuspension in the Lagoon during the actual dredging process; however this impact is considered short term and temporary.

Stormdrain Upgrades

This implementation alternative includes redirecting some stormdrains from the Lagoon to Marin Stadium, redirecting dry weather flows to the sanitary sewer, and directing stormwater and dry weather run off to vegetated bioswales. These types of stormwater facilities may impact siltation or deposition of sand. These facilities are designed to treat, retain, filter, and or infiltrate runoff. Minimal deposition currently occurs within concrete lined drains. Reduction in siltation in the lake may be considered a positive impact as fine sediments may reduce niche habitat of the lake and decrease water level.

Non-Structural BMPs

Non-structural BMPs would involve no change to the physical environment either directly or indirectly and would not result in changes in siltation, deposition, or erosion which may modify the bed of the lagoon.

This SED impact analysis concludes that there are potentially significant impacts from implementation of the TMDL, but notes that there are mitigation measures available to reduce potentially significant environmental impacts to less than significant levels. However, implementation of these mitigation measures are within the responsible and jurisdiction of the responsible agencies listed in this TMDL (Title 14, California Code of Regulations, Section 15091(a)(2)). 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 (Title 14, California Code of Regulations, Section 15091(a)(3)).

1. Earth. g. Will the proposal result in exposure of people or property to geologic hazards, such as earthquakes, landslides, mudslides, ground failure, or similar hazards?

Answer: Potentially Significant Impact

Southern California is recognized as a seismically active area. Reasonably well-established historical records of earthquakes in California have been compiled for approximately the past 200 years. The project site is not located within a currently designated Alquist-Priolo Earthquake Fault Zone, nor is it currently identified by the regulatory community as being located within zones of either primary or secondary co-seismic surface deformation (e.g., pressure ridges, escarpments, fissures). Thus, the site is not expected to experience primary surface fault rupture or related ground deformation. However, since the site is 4 mi from the Newport-Inglewood Structural Zone, significant ground shaking or secondary seismic ground deformation effects would occur at the site should a major seismic event occur along the Newport-Inglewood Structural Zone

The implementation alternatives presented:

- Clean Culvert, Repair Tidal Gates, and Remove Sill/Structural Impedances
- Build Open Channel or Parallel Underground Culvert between_Lagoon and Marine Stadium
- Remove Contaminated Sediments – Dredging
- Stormdrain Upgrades
- Non-Structural BMPs

would not change the existing uses in the Colorado Lagoon TMDL area, affect any habitable structures, or propose new buildings. The structural projects such as the open channel or underground culvert and stormdrain upgrades should be designed and built in conformance with Caltrans and AASHTO standards. Mitigation measures can include the review and approval of structural engineering design plans by appropriate experts. Also geotechnical reports should be prepared to consider the specific risk of seismic ground shaking and in relation to the specific projects implemented by responsible parties.

The project area is surrounded by developed areas, and site topography is relatively level; therefore, the possibility of a seismically induced landslide is minimal. Additionally, the site is not located near any known historical landslides. According to the California Department of Conservation's Seismic Hazard Zones Map for the *Long Beach* quadrangle, the project area does not fall within any earthquake-induced landslide zones.

It is not reasonably foreseeable that responsible agencies would choose to comply with the TMDL through structural means in areas where doing so would result in exposure of people or property to geologic hazards including earthquakes, landslides, mudslides, ground failure, or similar hazards.

This SED impact analysis concludes that there are potentially significant impacts from implementation of the TMDL, but notes that there are mitigation measures available to reduce potentially significant environmental impacts to less than significant levels. However, implementation of these mitigation measures are within the jurisdiction of the responsible agencies listed in this TMDL (Title 14, California Code of Regulations, Section 15091(a)(2)). 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 (Title 14, California Code of Regulations, Section 15091(a)(3)).

2. Air. a. Will the proposal result in substantial air emissions or deterioration of ambient air quality?

Answer: Potentially Significant Impact

The Colorado Lagoon TMDL area is located within the City of Long Beach, which is within Los Angeles County. Los Angeles County is part of the South Coast Air Basin (SCAB) and is under the jurisdiction of the South Coast Air Quality Management District (SCAQMD). The potential implementation alternatives may result in short-term construction impacts related to air quality. Once construction of the project has been completed, the on-site activities would return to preexisting levels. The following analysis focuses on air quality impacts associated with the construction of the potential implementation alternatives.

Clean Culvert, Repair Tidal Gates, and Remove Sill/Structural Impedances

These implementation alternatives would include cleaning out and repairing the existing culvert between Colorado Lagoon and Marine Stadium. The culvert design includes removable access panels on the top to allow for a small track-loader and cleaning equipment to be lowered into the culvert by crane. The track-loader and hydroblasting equipment would scrape the bottom, sides, and ceiling to remove sediments and marine growth. The sediment collected by the track-loader would be removed via excavator (or a crane with a bucket) through an access opening and hauled off site. Adverse impacts to ambient air quality may result form the short-term operation of this equipment. These impacts are temporary and can be mitigated. Mitigation measures for increased vehicle trips and heavy equipment due to cleaning and repairing the culvert may include but are not limited to, the following: 1) use of vehicles with lower- emission engines, 2) use of soot reduction traps or diesel particulate filters, 3) use of emulsified diesel fuel, and 4) proper maintenance of equipment so that it operates cleanly and efficiently 5) construction equipment should be turned off when not in use.

Build Open Channel or Parallel Underground Culvert between Lagoon and Marine Stadium

Creating an open channel or underground culvert between the Lagoon and Marine Stadium is a large scale project that will require the use of heavy equipment for excavating soil, and trucks to transport materials. The adverse impacts to ambient air quality may result from short-term operation of the excavation activity and an increase in truck traffic for excess soil transportation. These impacts are temporary and can be mitigated. Mitigation measures for increased air emissions due to increased vehicle trips or for heavy equipment due to excavation operations may include, but are not limited to, the following: 1) use of construction and maintenance vehicles with lower-emission engines, 2) use of soot reduction traps or diesel particulate filters, 3) use of emulsified diesel fuel, and 4) proper maintenance of vehicles and equipment so they operate cleanly and efficiently 5) construction equipment should be turned off when not in use.

Remove Contaminated Sediments - Dredging

Dredging requires the use of heavy equipment (i.e., the dredge itself and trucks to transport dredge material). The adverse impacts to ambient air quality may result from short-term operation of the dredge and an increase in truck traffic for dredge material transportation. These impacts are temporary and can be mitigated. Mitigation measures for increased air emissions due to increased vehicle trips or for heavy equipment due to hydraulic dredging operations may include, but are not limited to, the following: 1) use of construction and maintenance vehicles with lower-emission engines, 2) use of soot reduction traps or diesel particulate filters, 3) use of emulsified diesel fuel, and 4) proper maintenance of vehicles and equipment so they operate cleanly and efficiently 5) construction equipment should be turned off when not in use.

Stormdrain Upgrades

Short term increases in traffic during the construction and installation of stormdrain upgrade devices, such as low-flow diversions, and long-term increases in traffic caused by ongoing maintenance of these devices (e.g., delivery of materials) are potential sources of increased air pollutant emissions. Mitigation measures for increased air emissions due to increased vehicle trips or for construction equipment due to the installation of low-flow diversions may include, but are not limited to, the following: 1) use of construction, and maintenance vehicles with lower-emission engines, 2) use of soot reduction traps or diesel particulate filters, 3) use of emulsified

diesel fuel, and 4) proper maintenance of vehicles so they operate cleanly and efficiently 5) construction equipment should be turned off when not in use.

The generation of fugitive dust and particulate matter during construction or maintenance activities could also impact ambient air quality. An operation plan for the specific construction and/or maintenance activities could be completed to address the variety of available measures to limit the ambient air quality impacts. These could include vapor barriers and moisture control to reduce the transfer of particulates and dust to air. These impacts are temporary and localized to construction activities alone. Construction BMPs can be implemented to mitigate air quality impacts along with the use low emission vehicles as well as other SCAQMD recommended mitigation measures.

Non-structural BMPs

It is possible that workers and vehicles may be required to implement non-structural BMPs. However, non-structural BMPs are not expected to have significant impact on air quality for the level of effort that would be required.

This SED impact analysis concludes that there are potentially significant impacts from implementation of the TMDL, but notes that there are mitigation measures available to reduce potentially significant environmental impacts to less than significant levels. However, implementation of these mitigation measures are within the jurisdiction of the responsible agencies listed in this TMDL (Title 14, California Code of Regulations, Section 15091(a)(2)). 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 (Title 14, California Code of Regulations, Section 15091(a)(3)).

2. Air. b. Will the proposal result in creation of objectionable odors?

Answer: Potentially Significant Impact

Clean Culvert, Repair Tidal Gates, and Remove Sill/Structural Impedances

This implementation alternative will require the use of heavy equipment, which will omit objectionable odors due to exhaust. The odors would be limited to the time that construction equipment is operating during the construction period. Also, mitigation measures are available to help reduce this impact; such as turning off all equipment when it is not in use and maintaining the equipment in accordance with the manufacturer's specifications for top working order. These measures reduce impacts associated with objectionable odors from the operation of diesel-powered construction equipment. However, given the duration of construction activity and the proximity of the sensitive receptors (recreators at the park), these impacts may still be significant.

Build Open Channel or Parallel Underground Culvert between Lagoon and Marine Stadium

The creation of an open channel or underground culvert between the Lagoon and Marine Stadium will require the use of heavy diesel powered equipment. The odors would be limited to the time that construction equipment is operating during the construction period. Also, mitigation measures are available to help reduce this impact; such as turning off all equipment when it is not

in use and maintaining the equipment in accordance with the manufacturer's specifications for top working order. These measures reduce impacts associated with objectionable odors from the operation of diesel-powered construction equipment. However, given the duration of construction activity and the proximity of the sensitive receptors (recreators at the park), these impacts may still be significant.

Remove Contaminated Sediments - Dredging

Dredging requires the removal of contaminated sediment from the Lagoon. This may result in objectionable odors due to the anaerobic nature of sediments. The drying of the dredged materials is also part of the overall dredging measures. The dredge sediment will contain organic material and the decomposition of this organic matter may generate unpleasant odors. It is difficult to anticipate the nature or rate of odor emission form organic decomposition and anaerobic sediments; thus this impact may be unavoidable.

Objectionable odors may also be created due to exhaust from the operation of equipment and vehicles, but these impacts are temporary and localized to the operation of heavy equipment. BMPs such as those recommended by the SCAQMD can be implemented to mitigate air quality impacts.

Redirect Low Flows and First Flush Storm

Implementation of this BMP may result in objectionable odors in the short-term due to exhaust from operation equipment and vehicles, but these impacts are temporary and localized to construction activities alone. Diversion devices may be a source of objectionable odors if design allows for water stagnation or collection of water with sulfur-containing compounds. Stormwater runoff is not likely to contain sulfur-containing compounds, but stagnant water could create objectionable odors. BMPs such as the use of low emission vehicles as well as those recommended by the SCAQMD can be implemented to mitigate air quality impacts.

Stormdrain Upgrades

Construction activities required to complete stormdrain upgrades may result in objectionable odors in the short-term due to exhaust from operation equipment and vehicles, but these impacts are temporary and localized to construction activities alone. BMPs such as the use of low emission vehicles as well as those recommended by the SCAQMD can be implemented to mitigate air quality impacts.

Vegetated bioswales may be a source of objectionable odors if design allows for water stagnation or collection of water with sulfur-containing compounds. Stormwater runoff is not likely to contain sulfur-containing compounds, but stagnant water could create objectionable odors. For example, improper design or maintenance of bioswales may lead to clogging and stagnation of water creating objectionable odors. Vegetated systems require inspection and maintenance, replacing diseased and dead or dying plants to prevent build-up of detritus, and replacement of existing plants to increase efficiency (WERF, 2005).

Mitigation measures to eliminate odors caused by stagnation could include covers, aeration, filters, barriers, and/or odor suppressing chemical additives. Devices could be inspected to ensure that intake structures are not clogged or pooling water. During maintenance, odorous sources could be uncovered for as short of a time period as possible. To the extent possible, structural

BMPs could be designed to minimize stagnation of water (e.g., allow for complete drainage within 48 hours) and installed to increase the distance to sensitive receptors in the event of any stagnation.

Non-Structural BMPs

Non-structural BMPs will not require the use of construction or heavy equipment and it is not expected that non-structural BMPs will create objectionable odors. Non-structural BMPs generally focus on education and outreach; these activities would not generate objectionable odors.

This SED impact analysis concludes that there are potentially significant impacts from implementation of the TMDL, but notes that there are mitigation measures available to reduce potentially significant environmental impacts to less than significant levels. However, implementation of these mitigation measures are within the jurisdiction of the responsible agencies listed in this TMDL (Title 14, California Code of Regulations, Section 15091(a)(2)). 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 (Title 14, California Code of Regulations, Section 15091(a)(3)).

2. Air. c. Will the proposal result in alteration of air movement, moisture or temperature, or any change in climate, either locally or regionally?

Answer: No Impact

Reasonably foreseeable implementation alternatives for this TMDL would not be of the size or scale to result in alteration of air movement, moisture or temperature, or any change in climate, either locally or regionally.

3. Water. a. Will the proposal result in changes in currents, or the course of direction or water movements, in either marine or fresh waters?

Answer: Potentially Significant Impact

Clean Culvert, Repair Tidal Gates, and Remove Sill/Structural Impedances

Implementation of these BMPs is used to remove sill/structural impedances, and then improve water movements and mixing from Colorado Lagoon through Marine Stadium and Alamitos Bay. Adequate modeling, siting, and planning can help mitigate any possible negative impacts caused by water movement.

Build Open Channel or Parallel Underground Culvert between Lagoon and Marine Stadium

An open channel or underground culvert in place of the existing culvert would alter the drainage pattern, and improve the water movements and mixing from Colorado Lagoon through Marine Stadium and Alamitos Bay. Adequate modeling, siting, and planning can help mitigate any possible negative impacts caused by water movement.

Remove Contaminated Sediments - Dredging

Dredging the lagoon to remove sediment could potentially alter the direction of water movement. Dredging operations may promote additional mixing in the vicinity of dredging activity. Changes in the shape of the bottom of the lagoon may substantially change circulation patterns within the lagoon, resulting in uncertain impacts. Adequate modeling, siting, and planning can help mitigate any possible negative impacts caused by water movement.

Redirect Low Flows and First Flush Storm

Diversions of dry and wet-weather flow from storm drains to the wastewater treatment plant could have potential negative impacts on minimum flows required to support aquatic life in the Lagoon. Potential impacts to dry and wet-weather flow should be considered at the project level. Mitigation measures to maintain minimal flow to support habitat related beneficial uses should be reviewed and approved by the California Department of Fish and Game (CDFG) and United States Fish and Wild Life Service (USFWS). Diverted run-off can be discharged back into the Lagoon following treatment to maintain minimum flow. Adequate modeling and planning can help mitigate any possible negative impacts caused by water movement.

Install Vegetated Bioswales

Vegetated bioswales are expected to slow overland flow to the Lagoon and increase infiltration of runoff. The water movements can change if bioswales are not properly designed and maintained. Devices should be designed to allow adequate drainage of water and maintained to remove clogged material to mitigate this impact. Adequate modeling and planning can help mitigate any possible negative impacts caused by water movement.

Install Trash Separation Devices

The trash separation systems may cause a change in current and surface water movements. The stream flow in the lower watershed is highly channelized. As more trash is kept out of the channels, the roughness coefficient may be reduced, which would increase the flow rate in the channel. However, the impact would be less than significant. Trash separation devices may impede or slow overland flow to storm drains but proper design and maintenance can mitigate this impact.

Modify Sand Nourishment Practices

Replacing existing beach sand with different types of sand may change the permeability and drainage capability of beach sand. Adequate modeling and planning can help mitigate any possible negative impacts caused by water movement.

Non-Structural BMPs

Non-structural BMPs would involve no change to the physical environment either directly or indirectly and would not result in changes in currents, or the course of direction or water movements, in marine or fresh waters. No impact is anticipated. No mitigation measures are required.

This SED impact analysis concludes that there are potentially significant impacts from implementation of the TMDL, but notes that there are mitigation measures available to reduce

potentially significant environmental impacts to less than significant levels. However, implementation of these mitigation measures are within the jurisdiction of the responsible agencies listed in this TMDL (Title 14, California Code of Regulations, Section 15091(a)(2)). 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 (Title 14, California Code of Regulations, Section 15091(a)(3)).

3. Water. b. Will the proposal result in changes in absorption rates, drainage patterns, or the rate and amount of surface water runoff?

Answer: Potentially Significant Impact

Clean Culvert, Repair Tidal Gates, and Remove Sill/Structural Impedances

Implementation of these BMPs would not result in changes in absorption rates, drainage patterns, or the rate and amount of surface water runoff. No impact is anticipated. No mitigation measures are required.

Build Open Channel or Parallel Underground Culvert between Lagoon and Marine Stadium

An open channel or underground culvert in place of the existing culvert would not result in changes in absorption rates, drainage patterns, or the rate and amount of surface water runoff. No impact is anticipated. No mitigation measures are required.

Remove Contaminated Sediments - Dredging

Dredging operation involves the removal of Lagoon bed sediment and has minimal affect on surface sediment. Temporary staging, use of construction equipment, and maintenance or other vehicles may cause significant compaction, which can significantly impact absorption rates. Construction BMPs and mitigation measures are available to mitigate the potential impact.

Redirect Low Flows and First Flush Storm

Flow diversions have the potential to impact the amount of surface water runoff. These diversions are designed for dry-weather and wet-weather flows. Any device installed in a storm drain, especially an older, under-capacity drain could have a negative effect on the drain's ability to convey surface waters, including flood waters. This negative impact can be mitigated by designing the diversion units with overflow/bypass structures, by performing regular maintenance of these devices, and if necessary, by enlarging the storm drain upstream of the device (CASQA, 2003).

Install Vegetated Bioswales

Vegetated bioswales are flow-through devices that may cause a decrease in the rate of surface water runoff. These units may impede or slow overland flow to the Lagoon and increase infiltration of runoff. This negative impact can be mitigated through the design of bioswales with flow splitters or overflow/bypass structures, and by performing regular maintenance of these devices (CASQA, 2003).

Install Trash Separation Devices

The trash separation systems may cause a significant change in the drainage patterns, rate and amount of surface water runoff. These units may impede or slow overland flow to the storm drain system. Any device installed in a storm drain, especially an older, under-capacity drain could have a negative effect on the drain's ability to convey surface waters, including flood waters. This negative impact can be mitigated through design of the CDS units with overflow/bypass structures, by performing regular maintenance of these devices, and if necessary, by enlarging the storm drain upstream of the device.

Modify Sand Nourishment Practices

Replacing existing beach sand with different types of sand may change the permeability and drainage capability of beach sand. Adequate modeling and planning can help mitigate any possible negative impacts caused by surface water runoff.

Non-Structural BMPs

Non-structural BMPs would involve no change to the physical environment either directly or indirectly, and would not result in changes in the drainage patterns, or the rate and amount of surface water runoff. No impact is anticipated. No mitigation measures are required.

This SED impact analysis concludes that there are potentially significant impacts from implementation of the TMDL, but notes that there are mitigation measures available to reduce potentially significant environmental impacts to less than significant levels. However, implementation of these mitigation measures are within the jurisdiction of the responsible agencies listed in this TMDL (Title 14, California Code of Regulations, Section 15091(a)(2)). 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 (Title 14, California Code of Regulations, Section 15091(a)(3)).

3. Water. c. Will the proposal result in alterations to the course of flow of flood waters?

Answer: Less Than Significant Impact

Clean Culvert, Repair Tidal Gates, and Remove Sill/Structural Impedances

Implementation of these BMPs would not result in alterations to the course of flow of flood waters. No impact is anticipated. No mitigation measures are required.

Build Open Channel or Parallel Underground Culvert between Lagoon and Marine Stadium

The construction of an open channel or underground culvert between the Lagoon and Marine Stadium will improve tidal flushing and improve flood conveyance. No impact is anticipated. No mitigation measures are required.

Remove Contaminated Sediments - Dredging

Dredging operation affects circulation and waters in the lagoon, and do not affect flood waters. This would not result in altering the course of flow of flood waters. No mitigation measures are required.

Redirect Low Flows and First Flush Storm

Flow diversions have the potential to impact the course of flow of flood waters. Flow diversions are designed to divert dry-weather and wet-weather flows in storm drains to local Publicly Owned Treatment Works (POTWs). Impacts to the flow of flood waters can be mitigated with proper design and siting. Flow diversions should all be designed with high flow bypasses. During high flow events, usually during storms, waters entering the storm drain will bypass the diversion to prevent flooding and overtaxing of the POTWs treatment capacity.

Install Vegetated Bioswales

Vegetated bioswales are flow-through devices that may cause a decrease in the rate of surface water runoff. These units may impede or slow overland flow to the Lagoon and increase infiltration of runoff. Bioswales would not result in alterations to the course of flow of flood waters.

Install Trash Separation Devices

Trash separation devices may result in a potentially significant impact due to flooding hazards if the screens become blocked by trash and debris, which prevents the discharge of stormwater to the lagoon, or if the devices are not properly designed and constructed to allow for bypass of storm water during storm events that exceed the design capacity. Any device installed in a storm drain, especially an older, under-capacity drain could have a negative effect on the drain's ability to convey waters, including flood waters. This potential impact can be mitigated through the design of trash separation devices with overflow/bypass structures, and by performing regular maintenance to prevent the build up of trash and debris. Enlargement of the drain upstream of the device may be required.

Modify Sand Nourishment Practices

Replacing existing beach sand with different types of sand may change the permeability and drainage capability of beach sand. However, additional permeability on these beaches will not alter the course of flow of flood waters. No mitigation measures are required.

Non-Structural BMPs

Non-structural BMPs would involve no change to the physical environment either directly or indirectly and would not result in alterations to the course of flow of flood waters. No impact is anticipated. No mitigation measures are required.

3. Water. d. Will the proposal result in change in the amount of surface water in any water body?

Answer: Potentially Significant Impact

Clean Culvert, Repair Tidal Gates, and Remove Sill/Structural Impedances

Implementation of these BMPs would not result in change in the amount of surface water in any water body. No impact is anticipated. No mitigation measures are required.

Build Open Channel or Parallel Underground Culvert between Lagoon and Marine Stadium

The construction of an open channel or underground culvert between the Lagoon and Marine Stadium will improve tidal flushing and improve flood conveyance. This BMP would not result in change in the amount of surface water in any water body. No impact is anticipated. No mitigation measures are required.

Remove Contaminated Sediments - Dredging

The goal of hydraulic dredging is to remove sediment and restore the lagoon depth to a level that will improve water quality. The increase in lagoon depth would provide greater storage area for water in the lagoon. This would be considered to be a positive impact and would help to improve water quality.

Redirect Low Flows and First Flush

Flow diversions are designed to divert dry-weather and wet-weather flows in storm drains to local Publicly Owned Treatment Works (POTWs). Reductions in dry and wet-weather flows could have potential negative impacts on minimum flows required to support aquatic life. Potential impacts to dry and wet-weather flow should be considered at the project level. Mitigation measures to maintain minimal flow to support habitat related beneficial uses should be reviewed and approved by the California Department of Fish and Game (CDFG) and USFWS.

Install Vegetated Bioswales

Vegetated bioswales are flow-through devices that may cause a decrease in the rate of surface water runoff. These units may impede or slow overland flow to the Lagoon and increase infiltration of runoff. Reductions in dry and wet-weather flow could have potential negative impacts on minimum flows required to support and protect the wetland habitat. Potential impacts to dry-weather and wet-weather flows should be considered at the project level. Mitigation measures to maintain minimal flow to support habitat related beneficial uses should be reviewed and approved by the CDFG and the USFWS.

Install Trash Separation Devices

Trash separation devices do not divert water for other uses, so the amount of water in storm drains is not changed. Surface water in the Colorado Lagoon Watershed is not likely to change due to the removal of trash.

Modify Sand Nourishment Practices

Replacing existing beach sand with different types of sand does not change the amount of surface water in any water body. No mitigation measures are required.

Non-Structural BMPs

Non-structural BMPs would involve no change to the physical environment either directly or indirectly and would not result in change in the amount of surface water in any water body.

This SED impact analysis concludes that there are potentially significant impacts from implementation of the TMDL, but notes that there are mitigation measures available to reduce potentially significant environmental impacts to less than significant levels. However, implementation of these mitigation measures are within the jurisdiction of the responsible agencies listed in this TMDL (Title 14, California Code of Regulations, Section 15091(a)(2)). 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 (Title 14, California Code of Regulations, Section 15091(a)(3)).

3. Water. e. Will the proposal result in discharge to surface waters, or in any alteration of surface water quality, including but not limited to temperature, dissolved oxygen, or turbidity?

Answer: Potentially Significant Impact

Clean Culvert, Repair Tidal Gates, and Remove Sill/Structural Impedances

Implementation of these BMPs would not result in discharges to surface waters, or any alteration of surface water quality. No impact is anticipated. No mitigation measures are required.

Build Open Channel or Parallel Underground Culvert between Lagoon and Marine Stadium

The construction of an open channel or underground culvert between the Lagoon and Marine Stadium will improve tidal flushing and improve surface water quality. No impact is anticipated. No mitigation measures are required.

Remove Contaminated Sediments - Dredging

Dredging activities are expected to degrade water quality in the Lagoon. Dredging would increase suspended sediment in the vicinity of the dredging activity. This would increase the turbidity of the water above background levels. If enough decayed organic matter is suspended or dissolved in the water column, it may produce odors or change the chemical composition of the water, including decreasing pH and oxygen concentrations, increasing nitrogen and sulfide concentrations, and causing other chemical changes. During dredging activities, sediment, pesticides, metals, and other pollutants may be suspended in the water column and degrade water quality. The use of small cutterhead dredges designed for minimizing sediment disturbance would reduce the impacts of turbidity. Sediment curtains or other barriers would be used, as needed, to isolate areas being dredged from ambient conditions. Water quality monitoring will enable dredging methods and practices to be adjusted to reduce adverse effects. However, these impacts would be temporary during construction.

Redirect Low Flows and First Flush Storm

Flow diversions are designed to divert dry-weather and wet-weather flows in storm drains to local Publicly Owned Treatment Works (POTWs). Reductions in dry and wet-weather flows could have potential positive impacts on surface water quality of Lagoon. No mitigation measures are required.

Install Vegetated Bioswales

Vegetated bioswales would treat stormwater and dry weather runoff through filtration and some infiltration to remove sediment and pollutants prior to discharge into the Lagoon. This will positively impact water quality. No mitigation measures are required.

Install Trash Separation Devices

Trash separation devices will alter surface water quality by reducing the amount of trash that enters the lagoon. This reduction will positively impact water quality and associated recreational beneficial uses of surface waters, including water contact and non-contact recreation, and other beneficial uses. Trash separation devices will not foreseeably result in negative impacts to temperature, dissolved oxygen, or turbidity. No mitigation measures are required.

Modify Sand Nourishment Practices

Replacing existing beach sand with different types of sand does not result in discharge to surface waters, or in any alteration of surface water quality. No mitigation measures are required.

Non-Structural BMPs

Non-structural BMPs would involve no change to the physical environment either directly or indirectly and would not result in discharge to surface waters, or in any alteration of surface water quality.

This SED impact analysis concludes that there are potentially significant impacts from implementation of the TMDL, but notes that there are mitigation measures available to reduce potentially significant environmental impacts to less than significant levels. However, implementation of these mitigation measures are within the jurisdiction of the responsible agencies listed in this TMDL (Title 14, California Code of Regulations, Section 15091(a)(2)). 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 (Title 14, California Code of Regulations, Section 15091(a)(3)).

3. Water. f. Will the proposal result in alteration of the direction or rate of flow of ground waters?

Answer: No impact

The direction or rate of flow of ground waters is not likely to change due to compliance with this TMDL. Structural BMPs would not likely change the direction or rate of flow of ground water

because systems would not be installed in areas that are not already developed or at depths that could impact the ground water table.

3. Water. g. Change in the quantity or quality of ground waters, either through direct additions or withdrawals, or through interception of an aquifer by cuts or excavations?

Answer: No impact

The reasonably foreseeable methods of compliance act entirely on surface waters and would not add or withdraw groundwater.

3. Water. h. Will the proposal result in substantial reduction in the amount of water otherwise available for public water supplies?

Answer: No Impact

No impact is foreseeable. The structural and non-structural BMPs will not reduce public water supplies because the public water supplies are not drawn from stormwater or marine waters in the Lagoon.

3. Water. i. Will the proposal result in exposure of people or property to water related hazards such as flooding or tidal waves?

Answer: Potentially Significant Impact

Clean Culvert, Repair Tidal Gates, and Remove Sill/Structural Impedances

Implementation of these BMPs would not result in exposure of people or property to water related hazards such as flooding or tidal waves. No impact is anticipated. No mitigation measures are required.

Build Open Channel or Parallel Underground Culvert between Lagoon and Marine Stadium

The construction of an open channel or underground culvert between the Lagoon and Marine Stadium will improve tidal flushing and improve surface water quality. However, the project site is located in close proximity to Marine Stadium, Alamitos Bay, and the Pacific Ocean, which are water bodies susceptible to these risks such as flooding or tidal waves. Adequate modeling and planning can help mitigate any possible negative impacts caused by flooding or tidal waves.

Remove Contaminated Sediments - Dredging

Dredging would increase the depth of water in the lagoon. This increase of depth in the lagoon would allow more waters to enter the lagoon, thus reducing the hazards such as flooding or tidal waves.

Redirect Low Flows and First Flush Storm

If flow diversions are not properly designed and constructed to allow for bypass of stormwater during storms that exceed design capacity, low-flow diversions can potentially contribute to flooding. However, this potential impact can be mitigated through proper design features such as high-flow bypass, and maintenance procedures such as cleaning out diversions at an appropriate frequency.

Install Vegetated Bioswales

Vegetated Bioswales may result in flooding hazards if infiltration devices are not properly designed and constructed to allow for bypass of stormwater during storms that exceed design capacity. This potential impact can be mitigated through proper design. Potential risks of flooding due to clogging of devices with debris can be avoided by regular maintenance and inspection prior to storms. Pretreatment devices such as trash screens and biofiltration strips should be installed to minimize sediment load and clogging potential. Infiltration basins should be equipped with an observation well to monitor drain time and allow access if drainage is required (Caltrans, 2005). Bioswale devices may also reduce flooding hazards by reducing the peak storm flows in the Colorado Lagoon Watershed by diverting and retaining water on-site.

Install Trash Separation Devices

Trash separation devices may result in a potentially significant impact due to flooding hazards if the screens become blocked by trash and debris and prevent the discharge of storm water to the lagoon, or if the devices are not properly designed and constructed to allow for bypass of storm water during storm events that exceed the design capacity. This potential impact can be mitigated through the design of the trash separation devices with overflow/bypass structures and by performing regular maintenance to prevent the build up of trash and debris. Therefore, the exposure of people and property to flooding hazards after mitigation is less then significant.

Modify Sand Nourishment Practices

Replacing existing beach sand with different types of sand would not result in exposure of people or property to water related hazards such as flooding or tidal waves. No impact is anticipated. No mitigation measures are required.

Non-Structural BMPs

Non-structural BMPs would involve no change to the physical environment either directly or indirectly and would not result in exposure of people or property to water related hazards such as flooding or tidal waves. No impact is anticipated. No mitigation measures are required.

This SED impact analysis concludes that there are potentially significant impacts from implementation of the TMDL, but notes that there are mitigation measures available to reduce potentially significant environmental impacts to less than significant levels. However, implementation of these mitigation measures are within the jurisdiction of the responsible agencies listed in this TMDL (Title 14, California Code of Regulations, Section 15091(a)(2)). 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 (Title 14, California Code of Regulations, Section 15091(a)(3)).

4. Plant Life. a. Will the proposal result in change in the diversity of species, or number of any species of plants (including trees, shrubs, grass, crops, microflora and aquatic plants)?

Answer: Potentially Significant Impact

Clean Culvert, Repair Tidal Gates, and Remove Sill/Structural Impedances

Implementation of these BMPs would not result in change in the diversity of species, or number of any species of plants (including trees, shrubs, grass, crops, microflora and aquatic plants). No impact is anticipated. No mitigation measures are required.

Build Open Channel or Parallel Underground Culvert between Lagoon and Marine Stadium

The construction of an open channel or underground culvert between the Lagoon and Marine Stadium will result in change in the diversity of species, or number of any species of plants. Excavation activity will disturb and remove the number of plant species. Proper project modeling, siting, and planning can help mitigate impacts to the plant life.

Remove Contaminated Sediments - Dredging

Dredging operation may result in change in the diversity of species, or number of any species of plants. Increased dredging activity could temporarily increase turbidity of the water and suspended solids in the vicinity of dredging operation. This would reduce water clarity and decrease light penetration, possibly causing a decline in photosynthesis by nearby aquatic plants and phytoplankton. Dredging does not disturb the shoreline and will not impact aquatic or terrestrial vegetation directly along the shore. Proper project modeling, siting, and planning, such as limiting extent and duration of the dredging, can help mitigate impacts to the plant life.

Redirect Low Flows and First Flush Storm

Flow diversions, diverting the surface water runoff, may result in a change of the diversity of species, or number of any species of plants, especially in the dry-weather season. A decrease in flow may decrease plant diversity downstream of the diversion by reducing the number of species (including trees, shrubs, grass, crops, microflora and aquatic plants) of plants that require a more constant water supply. No adverse impacts are expected because the elimination of nuisance flows would return the stream bed's dry-weather flows to a more natural, pre-development condition. This in turn would facilitate the return of the stream's plant community to a more natural, pre-development condition and could impede the propagation of water-loving nonnative and invasive plant species. Impeding the propagation of invasive species is not a negative impact.

Install Vegetated Bioswales

Vegetated bioswales will use a variety of vegetation types. Vegetation is required to cover the whole width of the swale, be capable of withstanding design flows and be of sufficient density to prevent preferred flow paths and scour of deposited sediments. Vegetated bioswales may introduce new species of plants into the area. This results in a change of the diversity of species, or number of any species of plants. In addition, vegetated bioswales could result in reduced flows,

particularly during dry weather, and may adversely impact downstream plant life. Potential impacts to dry-weather flow should be considered at the project level.

Install Trash Separation Devices

Trash separation devices would be implemented in currently urbanized areas. Because these areas are already fully urbanized it is unlikely that the installation of trash separation devices would cause the removal, disturbance or change in diversity of any plant species or cause a change or reduction in the number of any unique, rare or endangered species of plants. However, depending on the final location of facilities, potential impacts to biological resources including special-status species and habitat, wetlands, and trees protected under local ordinances or policies could occur where facilities are located. Plant number and species diversity could be maintained by either preserving them prior, during, and after the construction of trash separation devices or by re-establishing and maintaining the plant communities post construction.

Modify Sand Nourishment Practices

Sand nourishment practices could result in temporary impact to plants in the construction zone. The number or diversity of plant species could be maintained by preserving them prior, during, and after the replacement of beach sand, or by reestablishing and maintaining the plant communities post construction. Proper project modeling, siting, and planning can help mitigate impacts to the plant life.

Non-Structural BMPs

Non-structural BMPs would not result in a change in the diversity of species, or number of any species of plants (including trees, shrubs, grass, crops, microflora and aquatic plants) because these BMPs would not introduce any physical effects that could impact plant life.

This SED impact analysis concludes that there are potentially significant impacts from implementation of the TMDL, but notes that there are mitigation measures available to reduce potentially significant environmental impacts to less than significant levels. However, implementation of these mitigation measures are within the jurisdiction of the responsible agencies listed in this TMDL (Title 14, California Code of Regulations, Section 15091(a)(2)). 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 (Title 14, California Code of Regulations, Section 15091(a)(3)).

4. Plant life. b. Will the proposal result in reduction of the numbers of any unique, rare or endangered species of plants?

Answer: No Impact

Mitigation measures could be implemented to ensure that potential impacts to unique, rare or endangered plant species are eliminated. When the specific projects are developed and sites identified, a search of the California Natural Diversity Database could be employed to confirm that any potentially sensitive plant species or biological habitats in the site area are properly identified and protected as necessary. Focused protocol plant surveys for special-status-plant

species could be conducted at each site location, if appropriate. If sensitive plant species occur on the project site mitigation should be required in accordance with the Endangered Species Act. Mitigation measures should be developed in consultation with the CDFG and the United States Fish and Wildlife Service (USFWS). Responsible agencies should endeavor to avoid compliance measures that could result in reduction of the numbers of any unique, rare or endangered species of plants, and instead opt for such measures and/or identify and install structural BMPs in areas that will not reduce the numbers of such plants.

Based on the study conducted by Chambers Group Inc. (2004), none of the 16 sensitive plant species were reported during the survey and none are expected to occur. Therefore, no impact is foreseeable. The structural and non-structural BMPs will not result in reduction of the numbers of any unique, rare or endangered species of plants that have the potential to occur in or within the vicinity of Colorado Lagoon.

4. Plant life. c. Will the proposal result in introduction of new species of plants into an area, or in a barrier to the normal replenishment of existing species?

Answer: Less Than Significant

Clean Culvert, Repair Tidal Gates, and Remove Sill/Structural Impedances

Implementation of these BMPs would not result in introduction of new species of plants into an area, or in a barrier to the normal replenishment of existing species. No impact is anticipated.

Build Open Channel or Parallel Underground Culvert between Lagoon and Marine Stadium

An open channel or underground culvert between the Lagoon and Marine Stadium may result in a barrier to the normal replenishment of existing species. Proper project modeling, siting, and planning can help mitigate impacts to the plant life.

Remove Contaminated Sediments - Dredging

Dredging in the lagoon would not result in introduction of new species of plants into an area. However, dredging could potentially cause a minor barrier to the normal replenishment of existing species. Dredging would temporarily increase turbidity and suspended solids in the water, which would decrease light penetration, causing a decline in photosynthesis by aquatic plants and phytoplankton. Proper project modeling, siting, and planning, such as limiting extent and duration of the dredging, can help mitigate impacts to the plant life.

Redirect Low Flows and First Flush Storm

Flow diversions divert the surface water runoff discharge. This would not result in the introduction of new species of plants into an area. However, the decrease in flow could be a barrier to the normal replenishment of existing species that require a more constant water supply. No adverse impacts are expected because the elimination of nuisance flows would return the stream bed's dry weather flows to a more natural, pre-development condition. This in turn would facilitate the return of the stream's plant community to a more natural, pre-development condition and could impede the propagation of water-loving nonnative and invasive plant species.

Impeding the propagation of invasive species is not a negative impact. Proper project siting and planning can help mitigate impacts to the plant life.

Install Vegetated Bioswales

Vegetated bioswales will use a variety of vegetation types. New species of plants may possibly be introduced into the project area. However, in cases where plants or landscaping is incorporated into the specific project design, the possibility of disruption of resident native species could be avoided or minimized by using only plants native to the area. The use of exotic invasive species or other plants listed in the Exotic Pest Plant of Greatest Ecological Concern in California (1999, California Invasive Plant Council, as amended) should be prohibited.

Install Trash Separation Devices

It is not reasonably foreseeable that implementation of trash separation devices would result in the introduction of exotic or invasive plant species into an area, nor will it result in a barrier to the normal replenishment of existing species. However, in the case that landscaping is incorporated into the specific project design, there is a possibility of disruption of resident native species. The possibility of disruption of resident native species could be avoided or minimized by using only plants native to the area. Use of exotic invasive species or other plants listed in the Exotic Pest Plant of Greatest Ecological Concern in California should be prohibited (CalEPPC, 1999).

Modify Sand Nourishment Practices

Sand nourishment practices on the beach would not result in introduction of new species of plants into an area, or act as a barrier to the normal replenishment of existing species. No impact is anticipated.

Non-Structural BMPs

Non-structural BMPs would involve no change to the physical environment either directly or indirectly and would have no impact resulting in the introduction of new species of plants, or in a barrier to the normal replenishment of existing species.

4. Plant life. d. Will the proposal result in reduction in acreage of any agricultural crop?

Answer: No impact

No impact is foreseeable. The project site is not used for agricultural production and is not designated Prime Farmland, Unique Farmland, or Farmland of Statewide Importance. The surrounding area is fully developed and generally characterized by park and residential uses. Therefore, the structural and non-structural BMPs will not result in reduction in acreage of any agricultural crop in the Colorado Lagoon Watershed.

5. Animal Life. a. Will the proposal result in change in the diversity of species, or numbers of any species of animals (birds, land animals including reptiles, fish and shellfish, benthic organisms, insects or microfauna)?

Answer: Less Than Significant

Depending on the implementation method chosen, it is possible that direct or indirect impact to animal life may occur. Responsible parties should consult with the CDFG and the USFWS prior to implementing compliance strategies that pose a potentially significant impact to animal life for both protected and non-protected species. Responsible parties may also choose to implement compliance strategies that incur less impact on animal life.

Clean Culvert, Repair Tidal Gates, and Remove Sill/Structural Impedances

Implementation of these BMPs may result in change in the diversity of species, or numbers of any species of animals (birds, land animals including reptiles, fish and shellfish, benthic organisms, insects or microfauna). The animals may travel easily between Lagoon and Marine Stadium. The clean culvert would create a larger corridor and enable more movement of wildlife between the Lagoon and Marine Stadium. Proper project modeling, siting, and planning can help mitigate impacts to the animal life.

Build Open Channel or Parallel Underground Culvert between Lagoon and Marine Stadium

An open channel or underground culvert between the Lagoon and Marine Stadium may result in a change in the diversity of species, or numbers of any species of animals (birds, land animals including reptiles, fish and shellfish, benthic organisms, insects or microfauna). The animals may travel more easily between Lagoon and Marine Stadium. The open channel would create a larger corridor and enable more movement of wildlife between the Lagoon and Marine Stadium. Proper project modeling, siting, and planning can help mitigate impacts to the animal life.

Remove Contaminated Sediments - Dredging

Dredging processes would disrupt activities of wildlife, such as birds, fish and shellfish, benthic organisms, insects or microfauna in the lagoon. The presence of the pipeline and barge, as well as tugboat and barge movements, could affect animal species in the lagoon for the duration of the dredging. Noise, human disturbance, and mechanical barriers from equipment and boats, all would affect wildlife, fish, and birds in the lagoon. Some sediment in the lagoon may contain toxic compounds that, when suspended, could affect water quality, which in turn could affect animal species.

The goal of a dredging project is normally to change the nature of the lagoon substrate. As a result, even after the dredging is complete the new substrate can be inhospitable to the previous benthic community and a reestablishment of the organisms is typically gradual. Moreover, other species (fish or birds) often rely upon the benthic community for food. A considerable reduction in the food source for this species may cause an adverse impact. Bird species may be required to travel to other areas in search of food; this may reduce the diversity of birds observed at the lagoon. Fish populations would be subject to in lagoon conditions, however their food source may temporarily supplemented in order to mitigate this impact. Proper project modeling, siting, and planning, such as limiting extent and duration of the dredging, can help mitigate impacts to the animal life.

Redirect Low Flows and First Flush Storm

Flow diversions in dry weather could eliminate some animal habitats dependant on those flows. These changes may result in a change in the diversity of species, or numbers of any species of animals (birds, land animals including reptiles, fish and shellfish, benthic organisms, insects or

microfauna) discussed above. Proper project modeling, siting, and planning can help mitigate impacts to the animal life.

Install Vegetated Bioswales

The installation of vegetated bioswales could increase the diversity or number of animal species, which is beneficial by creating habitat for those species. However, these types of structural BMPs could also increase the likelihood of vectors and pests. For example, vegetated swales may develop locations of pooled standing water that would increase the likelihood of mosquito breeding. Mitigation includes the prevention of standing water through the construction and maintenance of appropriate drainage slopes and through the use of aeration pumps. The introduction of mosquito larvae eating fish can help mitigate and reduce mosquito breeding in surface flow wetlands. Mitigation for vectors and pests should involve the use of appropriate vector and pest control strategies, maintenance, and frequent inspections.

Installation of non-vector producing structural BMPs can help mitigate vector production from standing water. Netting can be installed over vegetated bioswales to further mitigate vector production. Structural BMPs can be designed and sites can be properly protected to prevent accidental vector production. Vector control agencies should be involved for other types of mitigation. Proper project siting and planning can help mitigate impacts to the animal life.

Install Trash Separation Devices

In general, the activities that will take place with the implementation of the trash separation devices will be similar in nature to current urban activities that are already occurring in other watersheds. It is not reasonably foreseeable that either the construction/implementation or maintenance phase of potential projects will result in a significant impact to general wildlife species adapted to developed environments.

Modify Sand Nourishment Practices

Sand nourishment practices could change the habitats of some species and may result in a change to the diversity of species, or numbers of animal species such as sand microfauna or small sand crustaceans. The relatively small size of the beaches and the slight increase in sand permeability makes the impact on animal species less than significant.

Non-Structural BMPs

Non-structural BMPs would involve no change to the physical environment either directly or indirectly and would have no impact that results in a change in the diversity of species, or numbers of any species of animals.

5. Animal Life. b. Will the proposal result in reduction of the numbers of any unique, rare or endangered species of animals?

Answer: Potentially Significant Impact

A literature review resulted in 12 sensitive wildlife species that have a potential to occur in or within the vicinity of Colorado Lagoon. Five sensitive wildlife species are federal- and state-

listed endangered or threatened species, California brown pelican (*Pelecanus occidentalis californicus*), American peregrine falcon (*Falco peregrinus anatum*), Western snowy plover (*Charadrius alexandrinus nivosus*), California least tern (*Sterna antillarum browni*), and Belding's savannah sparrow (*Passerculus sandwichensis beldingi*). Although none of the sensitive wildlife species were observed during the survey, several have a high to moderate potential to occur within the project site (Chambers Group, Inc., 2004).

Depending on the structural BMPs selected, direct or indirect impacts to special-status animal species may possibly occur during and after construction. If special-status species are present during activities such as ground disturbance, construction, operation and maintenance activities associated with the potential projects, direct impacts to special-status species could result, including the following:

- Direct loss of a special-status species
- Increased human disturbance in previously undisturbed habitats
- Mortality by construction or other human-related activity
- Impairing essential behavioral activities, such as breeding, feeding or shelter/refugia
- Destruction or abandonment of active nest(s)/den sites
- Direct loss of occupied habitat

In addition, potential indirect impacts may include but are not limited to, the following:

- Displacement of wildlife by construction activities
- Disturbance in essential behavioral activities due to an increase in ambient noise levels and/or artificial light from outdoor lighting around facilities

Mitigation measures, however, could be implemented to ensure that special-status animals are not negatively impacted, nor their habitats diminished. For example, when the specific projects are developed and sites identified, a focus protocol animal survey and/or a search of the California Natural Diversity Database should be performed to confirm that any potentially special-status animal species in the site area are properly identified and protected as necessary.

If special-status animal species are potentially near the project site area, as required by the Endangered Species Act (ESA), two weeks prior to grading or the construction of facilities and per USFWS and/or CDFG protocols, pre-construction surveys to determine the presence or absence of special-status species would be conducted. The surveys should extend an appropriate distance (buffer area) off site to determine the presence or absence of any special-status species adjacent to the project site. If special-status species are present on the project site or within the buffer area, mitigation would be required under the ESA. To this extent, mitigation measures shall be developed with the USFWS and CDFG to reduce potential impacts.

Clean Culvert, Repair Tidal Gates, and Remove Sill/Structural Impedances

Implementation of these BMPs would not result in reduction of the numbers of any unique, rare or endangered species of animals. No impact is anticipated.

Build Open Channel or Parallel Underground Culvert between Lagoon and Marine Stadium

Construction activities of building an open channel or underground culvert could temporarily disturb sensitive animal species. These activities may result in reduction of the numbers of any unique, rare or endangered species of animals in the area. Proper project modeling, siting, and planning as discussed above can help mitigate impacts to the animal life. However, the animals may travel more easily between Lagoon and Marine Stadium when the construction of an open channel is completed. The open channel would create a larger corridor and enable more movement of wildlife between the Lagoon and Marine Stadium. This is a positive impact.

Remove Contaminated Sediments - Dredging

Dredging activities could temporarily disturb sensitive bird species using the lagoon. For example, depending on the extent of the disturbance, temporary loss of foraging habitat by the state and federal endangered California least tern could be a significant impact. California least terns use quiet areas such as Colorado Lagoon to train their young to forage after the chicks have fledged. Therefore, mitigation measures, such as performing activities such as dredging outside the nesting season of the least tern, may be necessary to protect this species. The city of Long Beach should consult with the USFWS and CDFG regarding potential impacts to least tern.

Redirect Low Flows and First Flush Storm

Flow diversions in dry weather could eliminate some animal habitats dependant on those flows. These changes may result in reduction of the numbers of any unique, rare or endangered species of animals. Proper project modeling, siting, and planning as discussed above can help mitigate impacts to the animal life.

Install Vegetated Bioswales

Vegetated bioswales could increase the diversity or number of animal species, by creating habitat for those species. The installation of bioswales may result in a temporary impact on the numbers of any unique, rare or endangered species of animals if they are found at the site of the installation. Proper project modeling, siting, and planning as discussed above can help mitigate impacts to the animal life.

Install Trash Separation Devices

Installation of trash separation devices may involve ground disturbance and noise. This could result in reduction of the numbers of any unique, rare or endangered species of animals if they are present in the area. Proper project modeling, siting, and planning as discussed above can help mitigate impacts to the animal life.

Modify Sand Nourishment Practices

Sand nourishment practices could change the habitats of some animal species. Construction equipment during sand replacement could also temporarily affect animal species. These activities

may result in reduction of the numbers of any unique, rare or endangered species of animals. Proper project planning as discussed above can help mitigate impacts to the animal life.

Non-Structural BMPs

Non-structural BMPs would involve no change to the physical environment either directly or indirectly, and would have no impact that results in the reduction of the numbers of any unique, rare or endangered species of animals.

This SED impact analysis concludes that there are potentially significant impacts from implementation of the TMDL, but notes that there are mitigation measures available to reduce potentially significant environmental impacts to less than significant levels. However, implementation of these mitigation measures are within the jurisdiction of the responsible agencies listed in this TMDL (Title 14, California Code of Regulations, Section 15091(a)(2)). 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 (Title 14, California Code of Regulations, Section 15091(a)(3)).

5. Animal Life. c. Will the proposal result in introduction of new species of animals into an area, or in a barrier to the migration or movement of animals?

Answer: Less Than Significant

It is not reasonably foreseeable that implementation of structural BMPs will result in the introduction of a new animal species. In addition, because potential projects would be established in previously heavily developed areas it is not expected that potential project sites would act as a travel route or regional wildlife corridor.

A travel route is generally described as a landscape feature (such as a ridgeline, canyon, or riparian strip) within a larger natural habitat area that is used frequently by animals to facilitate movement and provide access to necessary resources (e.g. water, food, den sites). Wildlife corridors are generally an area of habitat, usually linear in nature, which connect two or more habitat patches that would otherwise be fragmented or isolated from one another. It is unlikely that structural BMPs would be constructed in areas such as these. Structural BMPs would be sited in urbanized areas.

However, structural BMPs may potentially impact wildlife crossings. A wildlife crossing is a small narrow area relatively short and constricted, which allows wildlife to pass under or through obstacles that would otherwise hinder movement. Crossings are typically manmade and include culverts, underpasses, and drainage pipes to provide access across or under roads, highways, or other physical obstacles.

Construction activities are associated with the implementation of structural BMPs and may impact migratory avian species. These avian species may use portions of potential project sites, including ornamental vegetation, during breeding season and may be protected under the Migratory Bird Treaty Act (MBTA) while nesting. The MBTA includes provisions for protection of migratory birds under the authority of the CDFG and USFWS. The MBTA protects over 800

species including, geese, ducks, shorebirds, raptors, songbirds, and many other relatively common species.

If structural BMPs are implemented at locations where they would cause foreseeable adverse impacts on species migration or movement patterns, mitigation measures could be implemented to ensure that impacts which may result in a barrier to the migration or movement of animals is less than significant. Any site-specific wildlife crossings should be evaluated in consultation with CDFG. If a wildlife crossing would be significantly impacted in an adverse manner, then the design of the project should include a new wildlife crossing in the same general location. If construction occurs during the avian breeding season for special status species and/or MBTA-covered species, generally February through August, then prior (within 2 weeks) to the onset of construction activities, surveys for nesting migratory avian species would be conducted on the project site following CDFG and/or USFWS guidelines. If no active avian nests are identified on or within 200 feet of construction areas, no further mitigation would be necessary.

Alternatively, to avoid impacts, the agencies implementing the TMDL may begin construction after the previous breeding season for covered avian species and before the next breeding season begins. If a protected avian species was to establish an active nest after construction was initiated and outside of the typical breeding season (February – August), the project sponsor, would be required to establish a buffer of 200 feet or as required by USFWS between the construction activities and the nest site.

If active nests for protected avian species are found within the construction footprint or within the 200-foot buffer zone, construction would be required to be delayed within the construction footprint and buffer zone until the young have fledged or appropriate mitigation measures responding to the specific situation are developed in consultation with CDFG or USFWS. These impacts are highly site specific, and assuming they are foreseeable, they would require a project-level analysis and mitigation plan.

Finally, to the extent feasible, responsible agencies should endeavor to avoid compliance measures that could result in significant barriers to the beneficial migration or movement of animals, and instead opt for such measures as non-structural BMPs in sensitive areas.

Clean Culvert, Repair Tidal Gates, and Remove Sill/Structural Impedances

Implementation of these BMPs would not result in introduction of new species of animals into an area, or in a barrier to the migration or movement of animals. No impact is anticipated.

Build Open Channel or Parallel Underground Culvert between Lagoon and Marine Stadium

Construction activities of building an open channel or underground culvert could temporarily disturb the movement of animals. When the construction of an open channel is completed, the open channel would create a larger corridor and enable more movement of animal species between the Lagoon and Marine Stadium. This would be a positive impact. Proper project modeling, siting, and planning as discussed above can help mitigate impacts to the migration or movement of animals.

Remove Contaminated Sediments - Dredging

Dredging in the lagoon would not result in introduction of new species of animals into an area. However, dredging could potentially cause a minor barrier to the migration or movement of

animals. The presence of the pipeline and barge, as well as tugboat and barge movements, could affect the migration or movement of animals in the lagoon during the dredging. Noise, human disturbance, and mechanical barriers from equipment and boats may adversely impact the migration or movement of animals in the lagoon. Proper project modeling, siting, and planning, such as limiting extent and duration of the dredging, can help mitigate impacts to the migration or movement of animals.

Redirect Low Flows and First Flush Storm

Flow diversions would not result in the introduction of new species of animals into an area. However, construction activities could potentially cause a minor barrier to the movement of animals. No impact is anticipated.

Install Vegetated Bioswales

Construction of reasonably foreseeable vegetated bioswales would not restrict wildlife movement because the sizes of bioswales are generally too small to obstruct a corridor. Actually, vegetated swales may provide important habitat for animals. Proper project siting and planning as discussed above may mitigate impacts to the migration or movement of animals.

Install Trash Separation Devices

It is not reasonably foreseeable that implementation of the installation of trash separation devices will result in the introduction of a new animal species. However, constructed trash separation devices may potentially impact wildlife crossings. Proper project modeling, siting, and planning as discussed above can help mitigate impacts to the migration or movement of animals.

Modify Sand Nourishment Practices

Sand nourishment practices are temporary which would not result in the introduction of new species of animals into an area, or in a barrier to the migration or movement of animals. Proper project planning as discussed above can help mitigate impacts to the migration or movement of animals.

Non-Structural BMPs

Non-structural BMPs would involve no change to the physical environment either directly or indirectly and would have no impacts that result in introduction of new species of animals into an area, or in a barrier to the migration or movement of animals.

5. Animal Life. d. Will the proposal result in deterioration to existing fish or wildlife habitat?

Answer: Potentially Significant

Clean Culvert, Repair Tidal Gates, and Remove Sill/Structural Impedances

Implementation of these BMPs would not result in deterioration to existing fish or wildlife habitat. No impact is anticipated.

Build Open Channel or Parallel Underground Culvert between Lagoon and Marine Stadium

Construction activities of building an open channel or underground culvert could temporarily disturb the wildlife habitat. When the construction of an open channel is completed, the open channel would create a larger corridor and enable more movement of existing fish between the Lagoon and Marine Stadium. This would be a positive impact. Proper project modeling, siting, and planning as discussed above can help mitigate impacts to the wildlife habitat.

Remove Contaminated Sediments - Dredging

Dredging would increase suspended sediment in the vicinity of dredging activity, increasing turbidity of the water. This would reduce water clarity in the lagoon, which would result in the deterioration of existing fish or wildlife habitat. The increased turbidity would affect survival of phytoplankton and zooplankton, which form the prey basis for many of the wildlife, fish, and bird species in the lagoon. Dredging processes would disrupt activities of wildlife around Colorado Lagoon, and the presence of the pipeline and barge, as well as tugboat and barge movements, would affect biological resources in the lagoon for the duration of the dredging. Noise, human disturbance, and mechanical barriers from equipment and boats, all would affect wildlife, fish, and birds in the lagoon. Some sediment in the lagoon contains toxic compounds that, when suspended, could affect water quality, which in turn could affect existing fish or wildlife habitat.

Redirect Low Flows and First Flush Storm

Flow diversions divert dry-weather runoff and first flush storm runoff which may potentially change the fish and wildlife habitat within the lagoon. Existing fish and wildlife that thrived in the lagoon in the absence of nuisance flows should not be adversely impacted by habitat changes if the flows are eliminated. No adverse impacts are expected because the elimination of nuisance flows would return the lagoon bed to its more natural, pre-development condition.

Install Vegetated Bioswales

Construction of reasonably foreseeable vegetated bioswales would not would not likely result in deterioration to existing fish and wildlife habitat. In some cases, vegetated bioswales may actually provide important habitat for animals. Proper project modeling, siting, and planning can help mitigate impacts to the wildlife habitat.

Install Trash Separation Devices

Trash separation devices would not be located within the lagoon, but rather in the storm drain itself. As such, a foreseeable deterioration of existing fish or wildlife habitat is not anticipated. It is foreseeable, however, that the implementation of the trash separation devices will considerably improve fish or wildlife habitat by removing trash before it gets to the lagoon.

Modify Sand Nourishment Practices

Sand nourishment practices could result in temporary impact to wildlife and fish in the construction zone. The number or diversity of animal species could be maintained by preserving them prior, during, and after the replacement of beach sand. Proper project planning can help mitigate the temporary impacts to the wildlife. Changes in beach permeability could affect animals such as sand microfauna or small sand crustaceans. The relatively small size of the

beaches and the slight increase in sand permeability makes the impact on animal species less than significant.

Non-Structural BMPs

Non-structural BMPs would involve no change to the physical environment either directly or indirectly, and would have no impacts that result in deterioration to existing fish or wildlife habitat.

This SED impact analysis concludes that there are potentially significant impacts from implementation of the TMDL, but notes that there are mitigation measures available to reduce potentially significant environmental impacts to less than significant levels. However, implementation of these mitigation measures are within the jurisdiction of the responsible agencies listed in this TMDL (Title 14, California Code of Regulations, Section 15091(a)(2)). 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 (Title 14, California Code of Regulations, Section 15091(a)(3)).

6. Noise. a. Will the proposal result in increases in existing noise levels?

Answer: Potentially Significant Impact

Installation of structural BMPs would potentially involve removal of asphalt and concrete from streets and sidewalks, excavation and shoring, installation of reinforced concrete pipe, installation of the unit, and repaving of the streets and sidewalks. It is anticipated that installation activities would occur in limited, discrete, and discontinuous areas over a short duration. No major construction activities are anticipated. It is anticipated that excavation, for the purpose of installation, and repaving would result in the greatest increase in noise levels during the period of installation. Table 6-1 provides noise levels generated by different machinery that may be used in installing the structural BMPs units.

Table 6-1: Typical Installation Equipment Noise Emission Levels

Equipment	**Maximum Noise Level, (dBA) 50 feet from source**	**Equipment Usage Factor**	**Total 8-hr Leq exposure (dBA) at various distances**	
			50ft	**100ft**
Foundation Installation			**83**	**77**
Concrete Truck	***82***	***0.25***	**76**	**70**
Front Loader	***80***	***0.3***	**75**	**69**
Dump Truck	***71***	***0.25***	**65**	**59**
Generator to	***82***	***0.15***	**74**	**68**

vibrate concrete				
Vibratory Hammer	***86***	***0.25***	**80**	**74**
Equipment Installation			**83**	**77**
Flatbed truck	***78***	***0.15***	**70**	**64**
Forklift	***80***	***0.27***	**74**	**69**
Large Crane	***85***	***0.5***	**82**	**76**

Source; Caltrans, 2004

Contractors and equipment manufacturers have been addressing noise problems for many years, and through design improvements, technological advances, and a better understanding of how to minimize exposures to noise, noise effects can be minimized. An operations plan for the specific construction and/or maintenance activities could be developed to address the variety of available measures to limit the impacts from noise to adjacent homes and businesses. To minimize noise and vibration impacts at nearby sensitive sites, installation activities should be conducted during daytime hours to the extent feasible. There are a number of measures that can be taken to reduce intrusion without placing unreasonable constraints on the installation process or substantially increasing costs. These include noise and vibration monitoring to ensure that contractors take all reasonable steps to minimize impacts when near sensitive areas; noise testing and inspections of equipment to ensure that all equipment on the site is in good condition and effectively muffled; and an active community liaison program. A community liaison program should keep residents informed about installation plans so they can plan around noise or vibration impacts; it should also provide a conduit for residents to express any concerns or complaints.

The following measures would minimize noise and vibration disturbances at sensitive areas during installation:

- Use newer equipment with improved noise muffling and ensure that all equipment items have the manufacturers' recommended noise abatement measures, such as mufflers, engine covers, and engine vibration isolators intact and operational. Newer equipment will generally be quieter in operation than older equipment. All installation equipment should be inspected at periodic intervals to ensure proper maintenance and presence of noise control devices (e.g., mufflers and shrouding).

- Perform all installation in a manner to minimize noise and vibration. Use installation methods or equipment that will provide the lowest level of noise and ground vibration impact near residences and consider alternative methods that are also suitable for the soil condition. The contractor should select installation processes and techniques that create the lowest noise levels.

- Perform noise and vibration monitoring to demonstrate compliance with the noise limits. Independent monitoring should be performed to check compliance in particularly sensitive areas. Require contractors to modify and/or reschedule their installation

activities if monitoring determines that maximum limits are exceeded at residential land uses.

- Conduct truck loading, unloading and hauling operations so that noise and vibration are kept to a minimum by carefully selecting routes to avoid going through residential neighborhoods to the greatest possible extent. Ingress and egress to and from the staging area should be on collector streets or higher street designations (preferred).

- Turn off idling equipment.

- Temporary noise barriers shall be used and relocated, as practicable, to protect sensitive receptors against excessive noise from installation activities. Consider mitigation measures such as partial enclosures around continuously operating equipment or temporary barriers along installation boundaries.

- The installation contractor should be required by contract specification to comply with all local noise and vibration ordinances and obtain all necessary permits and variances.

These and other measures can be classified into three distinct approaches as outlined in Table 6-2.

Table 6-2: Noise Abatement Measures

Type of Control	Description
Source Control	***Time Constraints* – Prohibiting work during sensitive nighttime hours** ***Scheduling* – performing noisy work during less sensitive time periods** ***Equipment Restrictions* – restricting the type of equipment used** ***Substitute Methods* –using quieter equipment when possible** ***Exhaust Mufflers* – ensuring equipment have quality mufflers installed** ***Lubrication and Maintenance* – well maintained equipment is quieter** ***Reduced Power Operation* – use only necessary power and size** **Limit equipment on-site – only have necessary equipment on-site** ***Noise Compliance Monitoring* – technician on-site to ensure compliance**
Path Control	***Noise barriers* – semi-portable or portable concrete or wooden barriers** ***Noise curtains* – flexible intervening curtain systems hung from supports** ***Increased distance* – perform noisy activities further away from receptors**
Receptor Control	***Community participation* –open dialog to involve affected parties** ***Noise complaint process* – ability to log and respond to noise complaints**

Adapted from Thalheimer, 2000

Increases in ambient noise levels are expected to be less than significant once mitigation measures have been properly applied.

Clean Culvert, Repair Tidal Gates, and Remove Sill/Structural Impedances

Implementation of these BMPs would result in temporary increases in existing noise levels, but this would be short term and only exist until maintenance or construction is completed. Therefore, this noise impact is less than significant.

Build Open Channel or Parallel Underground Culvert between Lagoon and Marine Stadium

Construction activities of building an open channel would result in temporary increases in existing noise levels, but this would be short term and only exist until construction is completed. Therefore, this noise impact would reduce to less than significant level.

Remove Contaminated Sediments - Dredging

Dredging and excavation activities would result in increases in existing noise levels. Noise levels from the hydraulic dredge equipment exceeding a CNEL level of 60 dBA or more would indicate a significant noise impact. Noise mitigation opportunities should be reasonably available by selecting quieter running equipment and by providing supplemental noise shielding around engines and pumps. Noise level reductions of 10 dBA or more should be possible by selecting dredging equipment that produces noise levels below 80 dBA at 50 feet or by installing acoustical shielding panels around the sides of engine and pump equipment on the dredge. Implementing measures such as these would reduce dredging noise impacts to a less than significant level.

Redirect Low Flows and First Flush Storm

The construction and installation of flow diversions would result in temporary increases in existing noise levels, but this would be short term and only exist until construction is completed. Therefore, this noise impact would reduce to less than significant level.

Install Vegetated Bioswales

The construction and installation of vegetated bioswales would result in temporary increases in existing noise levels, but this would be short term and only exist until construction is completed. Therefore, this noise impact would reduce to less than significant level.

Install Trash Separation Devices

Trash separation devices would result in temporary increases in existing noise levels, but this would be short term and only exist until construction is completed. Therefore, this noise impact would reduce to less than significant level.

Modify Sand Nourishment Practices

Sand nourishment practices would result in temporary increase in existing noise levels. An operations plan for the specific construction and/or maintenance activities could be prepared to identify the variety of available measures to limit the impacts from noise to adjacent homes.

Non-Structural BMPs

Non-structural BMPs could result in increases in existing noise levels due to increased traffic from maintenance vehicles which may increase the noise level temporarily as the 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.

This SED impact analysis concludes that there are potentially significant impacts from implementation of the TMDL, but notes that there are mitigation measures available to reduce potentially significant environmental impacts to less than significant levels. However, implementation of these mitigation measures are within the responsible and jurisdiction of the responsible agencies listed in this TMDL (Title 14, California Code of Regulations, Section 15091(a)(2)). 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 (Title 14, California Code of Regulations, Section 15091(a)(3)).

6. Noise. b. Will the proposal result in exposure of people to severe noise levels?

Answer: Potentially Significant Impact

There will be noise associated with structural and non-structural BMPs (see 6 Noise a). Personnel conducting the operation and/or working in the general area may be exposed to severe noise levels. This would require that all personnel be required to wear ear protection in order to mitigate this exposure. The noise mitigation measures have been previously described in response to 6. Noise. a.

This SED impact analysis concludes that there are potentially significant impacts from implementation of the TMDL, but notes that there are mitigation measures available to reduce potentially significant environmental impacts to less than significant levels. However, implementation of these mitigation measures are within the responsible and jurisdiction of the responsible agencies listed in this TMDL (Title 14, California Code of Regulations, Section 15091(a)(2)). 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 (Title 14, California Code of Regulations, Section 15091(a)(3)).

7. Light and Glare. Will the proposal produce new light or glare?

Answer: No Impact

Implementation of the proposed structural and non-structural BMPs is not likely to produce new light or glare because none of the reasonably foreseeable means of compliance involve additional sources of light or glare.

8. Land Use. a. Will the proposal result in substantial alteration of the present or planned land use of an area?

Answer: No Impact

It is not anticipated that reasonably foreseeable methods of compliance of structural and non-structural BMPs will result in substantial alteration of the present or planned land use of an area. The BMPs will not physically divide an established community, nor will they conflict with any land use plan.

9. Natural Resources. a. Will the proposal result in increase in the rate of use of any natural resources,

Answer: No Impact

Structural and/or non-structural BMPs will not increase the rate of use of any natural resources. Implementation of structural and/or non-structural BMPs should not require quarrying, mining,

dredging, or extraction of locally important mineral resources. Operation of construction and maintenance vehicles could increase the use of fossil fuels, and some types of structural BMPs may consume electricity to operate pumps. Fuel and energy consumption are discussed in greater detail in item 15 Energy, listed below.

9. Natural Resources. b Will the proposal result in substantial depletion of any non-renewable natural resource

Answer: No Impact

See 9.Natural Resources. a.

10. Risk of Upset. Will the proposal involve a risk of an explosion or the release of hazardous substances (including, but not limited to: oil, pesticides, chemicals or radiation) in the event of an accident or upset conditions?

Answer: Potentially Significant Impact

There is the possibility that hazardous materials (e.g. oil and gasoline) may be present during implementation and/or operation of the structural and non-structural BMPs. Potential risk of exposure and explosion can be mitigated with proper handling and storage procedures. Compliance with the requirement of California Occupational Health and Safety Administration (Cal OSHA) and local safety regulations during installation, operations, and maintenance of these alternatives would help to prevent any worksite accidents or accidents involving the release of hazardous materials into the environment. Mitigation may include properly storing hazardous materials in protected areas with fencing and signs to prevent health hazards.

This SED impact analysis concludes that there are potentially significant impacts from implementation of the TMDL, but notes that there are mitigation measures available to reduce potentially significant environmental impacts to less than significant levels. However, implementation of these mitigation measures are within the jurisdiction of the responsible agencies listed in this TMDL (Title 14, California Code of Regulations, Section 15091(a)(2)). 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 (Title 14, California Code of Regulations, Section 15091(a)(3)).

11. Population. Will the proposal alter the location, distribution, density, or growth rate of the human population of an area?

Answer: No Impact

It is not anticipated that reasonably foreseeable methods of compliance will result in an impact to population in the altering the location, distribution, density, or growth rate of human population of an area.

12. Housing. Will the proposal affect existing housing, or create a demand for additional housing?

Answer: No Impact

Structural BMPs

It is not anticipated that reasonably foreseeable methods of compliance will result in an impact to existing housing, or create a demand for additional housing. Small infrastructure projects like low flow diversions, and wet-weather BMPs such as vegetated swales and the use of porous pavement, would be placed in existing storm drains, swales and parking lots, so no additional space would be necessary. Some wet-weather BMPs such as additional detention and infiltration basins could require space, but such BMPs are small, and responsible agencies would not need to impact existing housing in any way to site them.

Non-Structural BMPs

It is not reasonably foreseeable that non-structural BMPs would affect existing housing, or create a demand for additional housing.

13. Transportation/Circulation. a. Will the proposal result in generation of substantial additional vehicular movement?

Answer: Less Than Significant

Structural and/or non-structural BMPs will not result in generation of substantial additional long-term vehicular movement. There may be additional vehicular movement during construction of structural BMPs and during maintenance activities. However, vehicular movement during construction would be temporary, and vehicular movement during maintenance activities would be periodic and only as the vehicle passes through the area. This may generate minor additional vehicular movement.

In order to reduce the impact of construction traffic, a construction traffic management plan could be prepared for traffic control during any street closure, detour, or other disruption to traffic circulation. The plan could identify the routes that construction vehicles would use to access the site, hours of construction traffic, and traffic controls and detours. The plan could also include plans for temporary traffic control, temporary signage and stripping, location points for ingress and egress of construction vehicles, staging areas, and timing of construction activity which

appropriately limits hours during which large construction equipment may be brought on or off site.

13. Transportation/Circulation. b. Effects on existing parking facilities, or demand for new parking?

Answer: Potentially Significant Impact

Clean Culvert, Repair Tidal Gates, and Remove Sill/Structural Impedances

Implementation of these BMPs may result in temporary impacts to existing parking facilities, if maintenance requires use of existing parking. Maintenance events should be scheduled to be performed at the same time as other maintenance activities performed by the municipalities, and/or at times when these activities have lower impact, such as periods of low traffic activity and parking demand.

Build Open Channel or Parallel Underground Culvert between Lagoon and Marine Stadium

Construction of an open channel or underground culvert may result in short-term impacts to existing parking facilities, if construction operations require use of existing parking. Open space may be required for the staging of excavation activities and for the temporary stockpiling of soil removed from the park. All parking effects from the construction should be limited and temporary only, and equipment and materials are to be removed at the completion of construction operations.

Remove Contaminated Sediments - Dredging

Dredging and excavation activities would result in short-term impacts to existing parking facilities. Open space may be required for the staging of dredging activities and for the temporary stockpiling of material removed from the lagoon bottom. All parking effects from the dredging itself should be limited and temporary only, and equipment and materials are to be removed at the completion of dredging operations.

Redirect Low Flows and First Flush Storm

The installation of the flow diversions may result in temporary impacts to parking facilities. Parking areas may temporarily be required for the staging of the installation of the flow diversions. All parking effects from the installation of the flow diversions should be limited and temporary only, and equipment and materials are to be removed at the completion of construction operations.

Install Vegetated Bioswales

The installation of the vegetated bioswales may result in temporary impacts to parking facilities. Parking areas may temporarily be required for the staging of the installation of the vegetated bioswales. All parking effects from the installation of the vegetated bioswales should be limited and temporary only, and equipment and materials are to be removed at the completion of construction operations.

Install Trash Separation Devices

The installation of trash separation devices may result in short-term impacts to existing parking facilities. Trash separation devices can be designed to accommodate space constraints or be placed under parking spaces and would not significantly decrease the amount of parking available in existing parking facilities. Available parking spaces can be reconfigured to provide equivalent number of spaces or provide functionally similar parcel for use as offsite parking to mitigate potential adverse parking impacts.

Modify Sand Nourishment Practices

Sand nourishment practices may result in short-term impacts to existing parking facilities, if sand nourishment practices require use of existing parking. Maintenance events should be scheduled to be performed at times when these activities have lower impact, such as periods of low traffic activity and parking demand.

Non-Structural BMPs

Non-structural BMPs may result in short-term impacts to existing parking facilities, if construction operations require use of existing parking. Non-structural BMPs should be scheduled at times when these activities have lower impact, such as periods of low traffic activity and parking demand.

This SED impact analysis concludes that there are potentially significant impacts from implementation of the TMDL, but notes that there are mitigation measures available to reduce potentially significant environmental impacts to less than significant levels. However, implementation of these mitigation measures are within the jurisdiction of the responsible agencies listed in this TMDL (Title 14, California Code of Regulations, Section 15091(a)(2)). 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 (Title 14, California Code of Regulations, Section 15091(a)(3)).

13. Transportation/Circulation. c. Will the proposal result in substantial impacts upon existing transportation systems?

Answer: Less than significant

Structural BMPs

Depending on the structural BMPs selected, temporary alterations to existing transportation systems may be required during construction and installation activities. The potential impacts would be limited and short-term. Potential impacts could be reduced by limiting or restricting hours of construction so as to avoid peak traffic times, and by providing temporary traffic signals and flagging to facilitate traffic movement.

Non-Structural BMPs

It is not reasonably foreseeable that non-structural BMPs would result in substantial impacts upon existing transportation systems.

13. Transportation/Circulation. d. Will the proposal result in alterations to present patterns of circulation or movement of people and/or goods?

Answer: Less than significant

See response to "Transportation/Circulation." 13.b., and 13.c.

13. Transportation/Circulation. e. Will the proposal result in alterations to waterborne, rail or air traffic?

Answer: No Impact

It is not reasonably foreseeable that structural and non-structural BMPs would result in alterations to waterborne, rail or air traffic.

13. Transportation/Circulation. f. Will the proposal result in increase in traffic hazards to motor vehicles, bicyclists or pedestrians?

Answer: Less Than Significant Impact

Structural BMPs

The foreseeable methods of compliance may entail short-term disturbances during construction of structural BMPs. It is not foreseeable that this proposal will result in significant increases in traffic hazards to motor vehicles, bicyclists or pedestrians, especially when considered in light of those hazards currently endured in an ordinary urbanized environment.

The specific project impacts can be mitigated by appropriate mitigation methods during construction. To the extent that site-specific projects entail excavation in roadways, such excavations should be marked, barricaded, and traffic flow controlled with signals or traffic control personnel in compliance with authorized local police or California Highway Patrol requirements. These methods would be selected and implemented by responsible local agencies considering project level concerns. Standard safety measures should be employed including fencing, other physical safety structures, signage, and other physical impediments designed to promote safety and minimize pedestrian/bicyclists accidents.

Non-Structural BMPs

It is not reasonably foreseeable that non-structural BMPs would result in increases in traffic hazards to motor vehicles, bicyclists or pedestrians.

14. Public Service. a. Will the proposal have an effect upon, or result in a need for new or altered governmental services in any of the following areas: Fire protection?

Answer: Less Than Significant

Structural BMPs

During construction and installation of structural BMPs, temporary delays in response time of fire vehicles due to road closure/traffic congestion during construction activities may occur. However, any construction activities would be subject to applicable building and safety and fire prevention regulations and codes. The responsible agencies could notify local emergency service providers of construction activities and road closures and could coordinate with local providers to establish alternative routes and appropriate signage. In addition, an Emergency Preparedness Plan could be developed for the construction of proposed new facilities in consultation with local emergency providers to ensure that the proposed project's contribution to cumulative demand on emergency response services would not result in a need for new or altered fire protection services. Most jurisdictions have in place established procedures to ensure safe passage of emergency vehicles during periods of road maintenance, construction, or other attention to physical infrastructure. In any case, the installation of structural devices would not create any more significant impediments than such other ordinary activities.

Non-structural BMPs

It is not reasonably foreseeable that non-structural BMPs would result in a need for new or altered governmental services in fire protection.

14. Public Service. b. Will the proposal have an effect upon, or result in a need for new or altered governmental services in any of the following areas: Police protection?

Answer: Less Than Significant

Structural BMPs

It is not reasonably foreseeable that this proposal will have an effect upon or result in a need for new or altered governmental facilities for police protection services, the construction of which could cause significant environmental impacts. This is because compliance with the TMDL would not result in development of land uses for residential, commercial, and/or industrial uses nor would it result in increased growth. In addition, an Emergency Preparedness Plan could be developed for the construction of proposed new facilities in consultation with local emergency providers to ensure that the proposed project's contribution to cumulative demand on emergency response services is less than significant and would not result in a need for new or altered police protection services.

Any potential impact to police protection due to diversion of resources is not an "environmental" impact that involves changes in the physical environment. There is potential for temporary delays in response time of police vehicles due to road closure/traffic congestion during construction activities. The responsible agencies could notify local emergency service providers

of construction activities and road closures and could coordinate with local providers to establish alternative routes and appropriate signage. Most jurisdictions have in place established procedures to ensure safe passage of emergency vehicles during periods of road maintenance, construction, or other attention to physical infrastructure, and there is no evidence to suggest that installation of structural devices would create any more significant impediments than such other ordinary activities.

Non-Structural BMPs

It is not reasonably foreseeable that non-structural BMPs would result in a need for new or altered governmental services in police protection.

14. Public Service. c. Will the proposal have an effect upon, or result in a need for new or altered governmental services in any of the following areas: Schools?

Answer: Less Than Significant

The proposed structural and non-structural BMPs do not include new residential development and are not expected to increase the need for school services. Impacts related to public services, including schools are expected to be less than significant.

14. Public Service. d. Will the proposal have an effect upon, or result in a need for new or altered governmental services in any of the following areas: Parks or other recreational facilities?

Answer: Potentially Significant Impact

Clean Culvert, Repair Tidal Gates, and Remove Sill/Structural Impedances

Implementation of these BMPs may result in temporary impacts to parks or other recreational facilities. Proper project planning can help mitigate impacts to Parks or other recreational facilities.

Build Open Channel or Parallel Underground Culvert between Lagoon and Marine Stadium

Construction of an open channel or underground culvert may result in short-term impacts to Marina Vista Park or other recreational facilities. Open space may be required for the staging of excavation activities and for the temporary stockpiling of soil removed from the park. All parking effects from the construction should be limited and temporary only, and equipment and materials are to be removed at the completion of construction operations. Proper project modeling, siting, and planning can help mitigate adverse impacts to parks or other recreational facilities.

Remove Contaminated Sediments - Dredging

Dredging activities would result in short-term impacts to recreational use of the Colorado Lagoon and park. Open space may be required for the staging of dredging activities and for the temporary stockpiling of sediment removed from the lagoon bottom. All impacts from the dredging itself should be limited and temporary only, and equipment and materials are to be removed at the completion of dredging operations. Proper project siting and planning can help mitigate adverse impacts to parks or other recreational facilities.

Redirect Low Flows and First Flush Storm

The installation of the flow diversions may result in temporary impacts to parks or other recreational facilities. All impacts from the installation of the flow diversions should be limited and temporary only, equipment and materials are to be removed at the completion of construction operations. Proper project siting and planning can help mitigate adverse impacts to parks or other recreational facilities.

Install Vegetated Bioswales

The installation of the vegetated bioswales may result in temporary impacts to parks or other recreational facilities. All impacts from the installation of the vegetated bioswales should be limited and temporary only, and equipment and materials are to be removed at the completion of construction operations. Proper project siting and planning can help mitigate adverse impacts to parks or other recreational facilities.

Install Trash Separation Devices

The installation of the trash separation devices may result in temporary impacts to parks or other recreational facilities. All impacts from the installation of the trash separation devices should be limited and temporary only, and equipment and materials are to be removed at the completion of construction operations. Proper project siting and planning can help mitigate adverse impacts to parks or other recreational facilities.

Modify Sand Nourishment Practices

Sand nourishment practices may result in short-term impacts to parks or other recreational facilities. Proper project planning can help mitigate adverse impacts to parks or other recreational facilities.

Non-Structural BMPs

It is not foreseeable that non-structural BMPs will have a negative impact upon, or result in a need for new or altered governmental services to parks or other recreational facilities.

This SED impact analysis concludes that there are potentially significant impacts from implementation of the TMDL, but notes that there are mitigation measures available to reduce potentially significant environmental impacts to less than significant levels. However, implementation of these mitigation measures are within the jurisdiction of the responsible agencies listed in this TMDL (Title 14, California Code of Regulations, Section 15091(a)(2)). 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 (Title 14, California Code of Regulations, Section 15091(a)(3)).

14. Public Service. e. Will the proposal have an effect upon, or result in a need for new or altered governmental services in any of the following areas: maintenance of public facilities, including roads?

Answer: Potentially Significant Impact

Structural BMPs

Structural BMPs and infrastructure improvements could potentially impact public service requiring additional maintenance to ensure proper operation. Culvert cleaning, flow diversion devices, vegetated bioswales, and trash separation devices require some degree of maintenance, though the frequency and intensity of maintenance vary per BMPs. Other structural BMPs and infrastructure improvements do not require frequent maintenance. These devices can be further designed and engineered to lessen the amount of maintenance and servicing required. While these requirements may result in increases in maintenance costs, any increase will be outweighed by the resulting overall improvement in water quality and protection of aquatic life and water supply beneficial uses.

Non-Structural BMPs

It is not foreseeable that non-structural BMPs will have a negative impact upon, or result in a need for new or altered governmental services in any of the following areas: maintenance of public facilities including roads.

This SED impact analysis concludes that there are potentially significant impacts from implementation of the TMDL, but notes that there are mitigation measures available to reduce potentially significant environmental impacts to less than significant levels. However, implementation of these mitigation measures are within the jurisdiction of the responsible agencies listed in this TMDL (Title 14, California Code of Regulations, Section 15091(a)(2)). 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 (Title 14, California Code of Regulations, Section 15091(a)(3)).

14. Public Service. f. Will the proposal have an effect upon, or result in a need for new or altered governmental services in any of the following areas: other government services?

Answer: Potentially Significant Impact

Structural BMPs

As discussed above, structural BMPs may include additional maintenance to ensure proper operation of newly installed structural BMPs. Maintenance events could be scheduled to be performed at the same time as other maintenance activities performed by the municipalities, or at times when these activities have lower impact, such as periods of low traffic activity and parking demand.

Non-Structural BMPs

Implementation of the TMDL will result in the need for some increased monitoring on the storm drains and Colorado Lagoon to track compliance with the TMDL. However, no impact on the environment would be expected from these monitoring activities. Increased public outreach and education, street cleaning, storm drain cleaning, and trash removal may potentially impact

government services. Nevertheless, these types of alterations to governmental services are not "environmental" impacts that involve a change in the physical environment. Friends of Colorado Lagoon volunteers may help mitigate adverse impacts associated with non-structural BMPs.

This SED impact analysis concludes that there are potentially significant impacts from implementation of the TMDL, but notes that there are mitigation measures available to reduce potentially significant environmental impacts to less than significant levels. However, implementation of these mitigation measures are within the jurisdiction of the responsible agencies listed in this TMDL (Title 14, California Code of Regulations, Section 15091(a)(2)). 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 (Title 14, California Code of Regulations, Section 15091(a)(3)).

15. Energy. a. Will the proposal result in use of substantial amounts of fuel or energy?

Answer: Less Than Significant Impact

Structural BMPs

Compliance should not result in the use of substantial additional amounts of fuel or energy, or a substantial increase in demand upon existing sources of energy, or require the development of new sources of energy.

Construction of infrastructure improvements and structural BMPs require energy and fuel for heavy equipment, machinery, and vehicles. Energy demands during construction are temporary. Responsible parties can further mitigate fuel and energy consumption during construction through the use of more energy efficient vehicles and equipment.

Reasonably foreseeable infrastructural improvements and structural BMPs require infrequent maintenance and are unlikely to use substantial amount of fuel or energy, substantially increase demand upon existing sources of energy, or require the development of new sources of energy.

Non-Structural BMPs

Increases in administrative action, and outreach and education may also increase consumption and demand for fuel and energy. Responsible parties may also employ volunteers and choose to employ outreach activities and use of more energy efficient vehicles.

15. Energy. b. Will the proposal result in a substantial increase in demand upon existing sources of energy, or require the development of new sources of energy.

Answer: Less Than Significant Impact

See response to "15. Energy. a." Compliance with the TMDL will not require the development of new sources of energy.

16. Utilities and Service Systems. a. Will the proposal result in a need for new systems, or substantial alterations to the following utilities: power or natural gas?

Answer: Less Than Significant Impact

Structural BMPs

Installation of structural BMPs may require alterations or installation of new power or natural gas lines. Power and natural gas lines might need to be rerouted to accommodate the addition of structural BMPs. The degree of alteration depends upon local system layouts which careful placement and design can minimize. However, that the installation of structural BMPs will result in a substantial increased need for new systems, or substantial alterations to power or natural gas utilities, is not reasonably foreseeable, because none of these BMPs are large enough to substantially tax current power or natural gas sources. No long-term effects on the environment are expected if alterations to power or natural gas utilities are required.

Non-Structural BMPs

Non-structural BMPs will not result in a need for new systems or alterations to power or natural gas utilities because none of the BMPs would introduce any physical effects that could impact this characteristic.

16. Utilities and Service Systems. b. Will the proposal result in a need for new systems, or substantial alterations to the following utilities: communications systems?

Answer: Less Than Significant Impact

Structural BMPs

New systems or alterations to communications systems are not necessarily required for structural BMPs. It is anticipated that construction and maintenance crews will use various communication systems such as, telephones, cell phones, and radios. These types of communication devices and systems are used daily by the construction and maintenance personnel as part of regular business activities. It is not expected that the implementation of this TMDL would create undue stress on the established communication systems and will not require substantial alterations to the current communication system or a new communication system. However, that municipalities could install a remote monitoring system, which could include a new communications system, is possible. A telephone line or wireless communications system could be installed, which would not be a substantial alteration.

Non-Structural BMPs

Non-structural BMPs will not result in a need for new systems or alterations to communications systems because none of the BMPs would introduce any physical effects that could impact this characteristic. Current forms of communications used in maintenance vehicles could still be used.

16. Utilities and Service Systems. c. Will the proposal result in a need for new systems, or substantial alterations to the following utilities: water?

Answer: No Impact

Non-structural and/or structural BMPs will not result in a need for new systems or alterations to water supply. The need for new municipal or recycled water to implement this TMDL is not foreseeable.

16. Utilities and Service Systems. d. Will the proposal result in a need for new systems, or substantial alterations to the following utilities: Sewer or septic tanks?

Answer: Potentially Significant Impact

Structural BMPs

It is not reasonably foreseeable that structural BMPs except the flow diversions described below would result in a need for new systems, or substantial alterations to the following utilities: Sewer or septic tanks

Redirect low flows and first flush storm

Diverting the low-flow and storm first flush flows to the City's and/or County's sanitary sewer lines would increase the wastewater treatment demand and decrease the available capacity of the existing treatment facilities. This implementation measure will result in a need for new systems, or substantial alterations to sewer or septic tanks. This impact may be mitigated by installing high-flow bypasses along with the diversions. High-flow bypasses are designed to bypass the diversion in the event high-flow events, like storm events, to prevent overflow, flooding, and exhaustion of wastewater treatment plant's capacity.

Depending on the number of diversions installed and flow potential, low-flow and first flush storm diversion may significantly impact the treatable capacity of local POTWs. Responsible parties should study the layout of each diversion to determine the optimal amount of diversions necessary and the flow potential associated with those diversions. Responsible parties should also consult with local POTW to determine the average flow rate and treatable capacity of each POTW.

Non-Structural BMPs

It is not reasonably foreseeable that non-structural BMPs would result in a need for new systems, or substantial alterations to the following utilities: Sewer or septic tanks

This SED impact analysis concludes that there are potentially significant impacts from implementation of the TMDL, but notes that there are mitigation measures available to reduce potentially significant environmental impacts to less than significant levels. However, implementation of these mitigation measures are within the jurisdiction of the responsible agencies listed in this TMDL (Title 14, California Code of Regulations, Section 15091(a)(2)).

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 (Title 14, California Code of Regulations, Section 15091(a)(3)).

16. Utilities and Service Systems. e. Will the proposal result in a need for new systems, or substantial alterations to the following utilities: storm water drainage?

Answer: Potentially Significant Impact

Clean Culvert, Repair Tidal Gates, and Remove Sill/Structural Impedances

Implementation of these BMPs would not result in a need for new systems, or substantial alterations to storm water drainage.

Build Open Channel or Parallel Underground Culvert between Lagoon and Marine Stadium

The open channel or underground culvert between Lagoon and Marine Stadium would provide both tidal conveyance between the two water bodies and storm water drainage/flood flow conveyance. Proper project modeling, siting, and planning can help mitigate adverse impacts and substantial alterations to storm water drainage.

Remove Contaminated Sediments - Dredging

Dredging activities would not result in a need for new systems, or substantial alterations to storm water drainage. No impact is expected.

Redirect Low Flows and First Flush Storm

The development of flow diversion systems has the potential to result in a need for new systems, or substantial alterations to storm water drainage. The systems involve construction of diversion structures, drain lines, and wet well. These types of devices may result in a potentially significant impact due to changes in drainage patterns or flooding hazards if devices become blocked by trash and debris. Any device installed in a storm drain, especially an older, under-capacity drain could have a negative effect on the drain's ability to convey runoff. These negative impacts can be mitigated through design of devices with overflow/bypass structures, by performing regular maintenance of these devices and, if necessary, enlargement of the stormdrain upstream of the devices. Proper project modeling, siting, and planning can help mitigate adverse impacts and substantial alterations to storm water drainage.

Install Vegetated Bioswales

The installation of the vegetated bioswales may result in substantial alterations to storm water drainage. This impact may be mitigated by installing high-flow bypasses along with the bioswales. High-flow bypasses are designed to bypass the diversion in the event high-flow events, like storm events, to prevent overflow, flooding, and exhaustion of wastewater treatment plant's capacity. Proper project modeling, siting, and planning can help mitigate adverse impacts to substantial alterations to storm water drainage.

Install Trash Separation Devices

Trash separation devices are designed to allow the incoming flow of urban runoff or storm water to pass through the device while capturing trash and other debris within the unit. These types of devices may result in a potentially significant impact due to flooding hazards if the screens become blocked by trash and debris and prevent the discharge of storm water to the lagoon, or if the trash separation devices are not properly designed and constructed to allow for the bypass of storm water during storm events that exceed the design capacity. This potential impact can be mitigated through the design of the units with overflow/bypass structures, and by performing regular maintenance to prevent the build up of trash and debris. The trash separation devices may cause a significant change in the drainage patterns, and rate and amount of surface water runoff. These units may impede or slow overland flow to the storm drain system. Any device installed in a storm drain, especially an older, under-capacity drain could have a negative effect on the drain's ability to convey surface waters, including flood waters. Proper project modeling, siting, and planning can help mitigate adverse impacts and substantial alterations to storm water drainage.

Modify Sand Nourishment Practices

Sand nourishment practices would not result in a need for new systems, or substantial alterations to storm water drainage. No impact is expected.

Non-structural BMPs

Non-structural BMPs will not result in a need for new systems, or substantial alterations to stormwater drainage systems because none of the BMPs would introduce any physical effects that could impact this characteristic.

This SED impact analysis concludes that there are potentially significant impacts from implementation of the TMDL, but notes that there are mitigation measures available to reduce potentially significant environmental impacts to less than significant levels. However, implementation of these mitigation measures are within the jurisdiction of the responsible agencies listed in this TMDL (Title 14, California Code of Regulations, Section 15091(a)(2)). 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 (Title 14, California Code of Regulations, Section 15091(a)(3)).

16. Utilities and Service Systems. f. Will the proposal result in a need for new systems, or substantial alterations to the following utilities: solid waste and disposal?

Answer: Potentially Significant Impact

Clean Culvert, Repair Tidal Gates, and Remove Sill/Structural Impedances

The debris and sediment removed in the culvert cleaning require proper disposal. However, no new solid waste or disposal systems would be needed to handle the relatively small volume generated by these projects. Sediment and solid wastes that may be collected can be disposed of at appropriate landfill and/or disposal facilities.

Build Open Channel or Parallel Underground Culvert between Lagoon and Marine Stadium

The development of an open channel or underground culvert between Lagoon and Marine Stadium would produce significant amounts of debris and sediment. The sediment would be transported to the Port of Long Beach or other disposal sites. Proper project modeling, siting, and planning can help mitigate adverse impacts and substantial alterations to solid waste and disposal.

Remove Contaminated Sediments - Dredging

The purpose of dredging is to remove sediments from the lagoon bottoms. This dredged material requires disposal. One option for disposal of dredged materials is a landfill site; this could potentially impact solid waste utilities. Concentrations of lead in composite samples collected from the western arm of the Lagoon exceeded the State-modified EPA PRG for lead in residential soils of 150 mg/kg. Because these concentrations of lead exceed the State modified PRG for lead in residential soil, the reuse of these western arm sediments on site is not feasible and requires off-site disposal at a State certified landfill or at an approved Port of Long Beach landfill site. The closest Class I landfill facility is the Kettleman Hills Landfill located in Kings County on the Interstate 5 (I-5) corridor, north of the City of Bakersfield. Due to the location, the preferred disposal location is at a designated Port of Long Beach landfill. Therefore, there is a potential that construction of a Port landfill will be needed for the disposal of contaminated sediment. The disposal of the contaminated sediment at a Port landfill project is constrained by the timing between the Lagoon dredge activities and the construction of the Port landfill. If the timing of these activities do not coincide, the contaminated sediment would be hauled to the Kettleman Hills Landfill.

Redirect Low Flows and First Flush Storm

The installation of flow diversion systems may generate construction debris. Additionally, installed flow diversion systems may collect sediment and solid wastes that will require disposal. Construction debris can be recycled at aggregate recycling centers or disposed of at landfills. Improved sorting and recycling methods can reduce the total amount of disposable stormwater wastes. Existing landfills in the area have adequate capacity to accommodate this limited amount of construction debris. Impacts on the disposal of solid waste would be less than significant. It is not foreseeable that this proposal will result in a need for new systems, or substantial alterations to solid waste and disposal utilities.

Install Vegetated Bioswales

The installation of the vegetated bioswales may generate construction debris. Additionally, installed vegetated bioswales may collect sediment and solid wastes that will require disposal. Construction debris can be recycled at aggregate recycling centers or disposed of at landfills. Improved sorting and recycling methods can reduce the total amount of disposable wastes. Existing landfills in the area have adequate capacity to accommodate this limited amount of construction debris. Impacts on the disposal of solid waste would be less than significant. It is not foreseeable that this proposal will result in a need for new systems, or substantial alterations to solid waste and disposal utilities.

Install Trash Separation Devices

The installation of the trash separation devices may generate construction debris. Additionally, installed trash separation devices may collect sediment and solid wastes that will require disposal. Construction debris can be recycled at aggregate recycling centers or disposed of at landfills.

Improved sorting and recycling methods can reduce the total amount of disposable stormwater wastes. Existing landfills in the area have adequate capacity to accommodate this limited amount of construction debris. Impacts on the disposal of solid waste would be less than significant. It is not foreseeable that this proposal will result in a need for new systems, or substantial alterations to solid waste and disposal utilities.

Modify Sand Nourishment Practices

The sand nourishment practices may generate construction debris that will require disposal. Construction debris can be recycled at aggregate recycling centers or disposed of at landfills. Existing landfills in the area have adequate capacity to accommodate this limited amount of construction debris. Impacts on the disposal of solid waste would be less than significant. It is not foreseeable that this proposal will result in a need for new systems, or substantial alterations to solid waste and disposal utilities.

Non-structural BMPs

Non-structural BMPs will not result in a need for new systems, or substantial alterations to solid waste and disposal utilities because none of the BMPs would introduce significant amounts of waste that could impact this characteristic.

This SED impact analysis concludes that there are potentially significant impacts from implementation of the TMDL, but notes that there are mitigation measures available to reduce potentially significant environmental impacts to less than significant levels. However, implementation of these mitigation measures are within the jurisdiction of the responsible agencies listed in this TMDL (Title 14, California Code of Regulations, Section 15091(a)(2)). 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 (Title 14, California Code of Regulations, Section 15091(a)(3)).

17. Human Health. a. Will the proposal result in creation of any health hazard or potential health hazard (excluding mental health)?

Answer: Potentially Significant Impact

Structural BMPs

It is reasonably foreseeable that hazards or hazardous materials could be encountered during the installation of structural BMPs. Contamination could exist depending on the current and historical land uses of the area. Depending on their location, structural BMPs could be proposed in areas of existing oil fields and/or methane zones or in areas with contaminated soils or groundwater. The use of hazardous materials (e.g., paint, oil, gasoline) and potential for accidents is also likely during installation.

Debris and sediment that are removed during construction of structural BMPs could become hazardous to the public or to maintenance workers who collect and transport the debris and sediment if they are not handled in a timely manner and disposed of appropriately.

Installation of structural BMPs could result in the temporary interference of emergency response or evacuation plans if construction equipment, road closures, or traffic interfered with emergency vehicles traveling through the installation area.

To the extent that installation of structural BMPs could involve work with or near hazards or hazardous materials, potential risks of exposure can be mitigated with proper handling and storage procedures. The health and safety plan prepared for any project should address potential effects from cross contamination and worker exposure to contaminated soils and water and should include a plan for temporary storage, transportation, and disposal of contaminated soils and water. Compliance with the requirements of California Occupational Health and Safety Administration (CalOSHA) and local safety regulations during installation, operation, and maintenance of these systems would prevent any worksite accidents or accidents involving the release of hazardous materials into the environment, which could harm the public, nearby residents and sensitive receptors such as schools. Systems can be redesigned and sites can be properly protected with fencing and signs to prevent accidental health hazards.

To the extent that trash trapped by trash separation devices could become hazardous, impacts to maintenance workers and the public could be avoided or mitigated by educating the local community about the effects of improper disposal of such wastes, enforcing litter ordinances, and timely cleaning out trash separation devices.

To the extent that flow diversion systems, trash separation devices, and vegetated bioswales become a source of standing water and vector production, design at the project level can help mitigate vector production from standing water. Vector control agencies may be employed as another source of mitigation. Systems that are prone to standing water can be selectively installed away from high-density areas and away from residential housing and/or by requiring oversight and treatment of those systems by vector control agencies. Appropriate planning, design, siting, and implementation can reduce or eliminate potential health hazards due to the installation of structural BMPs.

Non-Structural BMPs

Non-structural BMPs would involve no change to the physical environment either directly or indirectly and would have no impact related to hazards, hazardous materials, or human health.

This SED impact analysis concludes that there are potentially significant impacts from implementation of the TMDL, but notes that there are mitigation measures available to reduce potentially significant environmental impacts to less than significant levels. However, implementation of these mitigation measures are within the jurisdiction of the responsible agencies listed in this TMDL (Title 14, California Code of Regulations, Section 15091(a)(2)). 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 (Title 14, California Code of Regulations, Section 15091(a)(3)).

17. Human Health. b. Will the proposal result in exposure of people to potential health hazards?

Answer: Potentially Significant Impact

See response to 17 Human Health a.

This SED impact analysis concludes that there are potentially significant impacts from implementation of the TMDL, but notes that there are mitigation measures available to reduce potentially significant environmental impacts to less than significant levels. However, implementation of these mitigation measures are within the responsible and jurisdiction of the responsible agencies listed in this TMDL (Title 14, California Code of Regulations, Section 15091(a)(2)). 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 (Title 14, California Code of Regulations, Section 15091(a)(3)).

18. Aesthetics. a. Will the proposal result in the obstruction of any scenic vista or view open to the public?

Answer: Less Than Significant Impact

Clean Culvert, Repair Tidal Gates, and Remove Sill/Structural Impedances

Implementation of these BMPs would not result in the obstruction of any scenic vista or view open to the public.

Build Open Channel or Parallel Underground Culvert between Lagoon and Marine Stadium

Construction of an open channel will alter the existing visual character of Marina Vista Park and result in a temporary impairment of scenic vista or view open to the public. Project construction would require site grading, stockpiling and storage of construction materials, and the use of construction equipment. This construction impact would be localized and short-term, lasting during the normal working hours at specific locations. Construction BMPs like screening and landscaping can help mitigate aesthetic impacts. Construction materials and equipment shall be removed from the site as soon as they are no longer necessary. After construction, the improvement projects including gently sloping banks, rock riprap construction, native landscaping, and a trail along the banks would provide a positive aesthetic effect on the surrounding areas.

Remove Contaminated Sediments - Dredging

Dredging will require that a dredge be floating on the lagoon in order to remove sediment materials. In addition, there may be visual impacts associated with open space areas that are used for the staging of dredging activities and for the temporary stockpiling of material removed from the lagoon bottom. These temporary changes would not significantly result in the obstruction of any scenic vista or view open to the public.

Redirect Low Flows and First Flush Storm

Construction of flow diversion systems could potentially result in a temporary impairment of scenic vista or view open to the public and create aesthetically offensive sites open to the public view. Project construction would require site grading, stockpiling and storage of construction materials, and the use of construction equipment. This construction impact would be localized

and short-term, lasting during the normal working hours at specific locations. Construction BMPs like screening and landscaping can help mitigate aesthetic impacts. Construction materials and equipment shall be removed from the site as soon as they are no longer necessary. After construction, the scenic vista or view would return to the condition it was prior to the construction.

Install Vegetated Bioswales

Construction of vegetated bioswales could potentially result in a temporary impairment of scenic vista or view open to the public and create aesthetically offensive sites open to the public view. This construction impact would be localized and short-term, lasting during the normal working hours at specific locations. Construction BMPs like screening and landscaping can help mitigate aesthetic impacts. Construction materials and equipment should not be stored on public streets. Excess excavated material should be removed from the site immediately. Once constructed, densely vegetated systems may actually improve the aesthetic appeal of the surrounding areas of Colorado Lagoon.

Install Trash Separation Devices

Trash separation devices are subsurface devices and therefore installing them at a particular location is unlikely to result in an impairment of scenic and opens views to the public. Since these units will be installed within the already existing storm drain network, it is also not foreseeable that the installation of trash separation devices may substantially damage scenic resources and/or degrade the existing visual character or quality of any particular location and its surrounding areas. It is not foreseeable that the installation activities would result in any substantial adverse effect on the scenic vistas of the location. However, in the unlikely event that such activities should create aesthetically offensive impacts, these can be mitigated with screening and other construction BMPs. Screening can be used to reduce temporary impacts from aesthetically offensive installation activities.

Modify Sand Nourishment Practices

Temporary impacts to aesthetics could occur during the sand nourishment practices. These practices would be localized and short-term, lasting during the normal working hours at specific locations. Excess excavated sand would be removed from the site shortly. After construction, the scenic vista or view would return to the condition it was prior to the construction.

Non-structural BMPs

Non-structural BMPs will not result in the obstruction of any scenic vista or view open to the public because none of the BMPs would introduce any physical effects that could impact this characteristic.

18. Aesthetics. b. Will the proposal result in the creation of an aesthetically offensive site open to public view?

Answer: Less Than Significant Impact

See response to 18. Aesthetics. a.

19. Recreation. a. Will the proposal result in impacts on the quality or quantity of existing recreational opportunities?

Answer: Less Than Significant Impact

Structural BMPs

During construction and installation of structural BMPs, beaches or other recreational areas could be temporarily affected. Construction activities could potentially be performed near or within a beach or recreational area. Potential impacts would be limited and short-term, and could be avoided through proper planning, and scheduling of construction activities.

In the event that the municipalities might install facilities on a scale that could alter a beach or recreational area, the structural BMPs could be designed in such a way as to be incorporated into the beach or recreational area. Additionally, many structural BMPs, if necessary, may be constructed underground to minimize impacts on the quality or quantity of existing recreational opportunities. Mitigation to replace lost areas may include the creation of new open space recreation areas and/or improved access to existing open space recreation areas.

Additionally, improvement of water quality could create new recreation opportunities in Colorado Lagoon by providing the opportunity to recreate in and near a clean water body with a robust and diverse population of plants and animals.

Non-Structural BMPs

It is not reasonably foreseeable that non-structural BMPs would impact the quality or quantity of existing recreational opportunities.

20. Archeological/Historical. Will the proposal result in the alteration of a significant archeological or historical site structure, object or building?

Answer: Potentially Significant Impact

Clean Culvert, Repair Tidal Gates, and Remove Sill/Structural Impedances

Implementation of these BMPs would not result in the alteration of a significant archeological or historical site structure, object or building.

Build Open Channel or Parallel Underground Culvert between Lagoon and Marine Stadium

Construction of an open channel or underground culvert would adversely affect a known historic resource. At least one archeological site is known to exit within 400 ft of the project area. It is recommended that the construction of an open channel or underground culvert should be monitored by a qualified archaeologist. Likewise, in the event that cultural resources are discovered all work should be halted until a qualified archaeologist can visit the site and assess the significance. Site management including recordation, evaluation, and data recovery may be

required. Proper project modeling, siting, and planning can help mitigate adverse impacts to the alteration of a significant archeological or historical resource.

Remove Contaminated Sediments - Dredging

The Colorado Lagoon was developed from a mudflat through dredging in the 1920s. Dredging is the removal of accumulated sediments from the lagoon bottom. The dredging has no potential to uncover a buried archeological site and artifacts.

Redirect Low Flows and First Flush Storm

Construction of flow diversion systems would not result in the alteration of a significant archeological or historical site structure, object or building. Because these areas are already fully urbanized it is unlikely that implementation of structural diversion devices would cause a substantial adverse change to historical or archeological resources, destroy paleontological resources, or disturb human remains. However, depending on the final location of facilities, potential impacts to cultural resources could occur.

Install Vegetated Bioswales

The existing Lagoon was created (dredged from a mudflat) in the 1920s and the Marina Vista Park area was created by fill in the 1960s for a contemplated freeway that was never built. Therefore, construction of vegetated bioswales located adjacent to the lagoon would not result in the alteration of a significant archeological or historical site structure, object or building.

Install Trash Separation Devices

Installation of trash separation devices on storm drains would not result in the alteration of a significant archeological or historical site structure, object or building. Because these areas are already fully urbanized it is unlikely that implementation of trash separation devices would cause a substantial adverse change to historical or archeological resources, destroy paleontological resources, or disturb human remains. However, depending on the final location of facilities, potential impacts to cultural resources could occur.

Modify Sand Nourishment Practices

Sand nourishment practices would not result in the alteration of a significant archeological or historical site structure, object or building.

Non-structural BMPs

Non-structural BMPs would involve no change to the physical environment either directly or indirectly and would not result in the alteration of a significant archeological or historical site structure, object or building.

21. Mandatory Findings of Significance.

21.a Potential to degrade. 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, 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?

Answer: Potentially Significant Impact

Taken all together, the potential impacts of the project will not cause a significant degradation to the environment with appropriate implementation of available mitigation measures. The implementation of this TMDL will result in improved water quality in the waters of the Region and will have significant beneficial impacts to the environment over the long term.

This SED impact analysis concludes that there are potentially significant impacts from implementation of the TMDL, but notes that there are mitigation measures available to reduce potentially significant environmental impacts to less than significant levels. However, implementation of these mitigation measures are within the jurisdiction of the responsible agencies listed in this TMDL (Title 14, California Code of Regulations, Section 15091(a)(2)). 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 (Title 14, California Code of Regulations, Section 15091(a)(3)).

21.b Short-term. Does the project have the potential to achieve short-term, to the disadvantage of long-term, environmental goals?

Answer: No Impact

This TMDL is directed to long-term environmental goals, and does not sacrifice long-term for short-term benefit. There are no short-term beneficial effects on the environment from the implementation of non-structural and/or structural BMPs that would be at the expense of long-term beneficial effects on the environment. The implementation and compliance with this TMDL will result in improved water quality in the waters of the Region and will have significant beneficial impacts to the environment over the long term.

21.c. Cumulative. Does the project have impacts which are individually limited, but cumulatively considerable?

Answer: Potentially Significant Impact

Each compliance measure is expected to have nominal environmental impacts if performed properly. Mitigation measures are available for most of these impacts. It is not expected that implementation of the TMDL will cause cumulatively considerable impacts if available mitigation measures are properly implemented.

This SED impact analysis concludes that there are potentially significant impacts from implementation of the TMDL, but notes that there are mitigation measures available to reduce potentially significant environmental impacts to less than significant levels. However, implementation of these mitigation measures are within the jurisdiction of the responsible

agencies listed in this TMDL (Title 14, California Code of Regulations, Section 15091(a)(2)). 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 (Title 14, California Code of Regulations, Section 15091(a)(3)).

21. d. Substantial adverse. Does the project have environmental effects which will cause substantial adverse effects on human beings, either directly or indirectly?

Answer: Potentially Significant Impact

Without implementation of recommended mitigation measures, potentially significant environmental impacts, such as impacts to air, noise, and transportation, can result from implementation projects. In some cases, mitigation measures even if performed may not reduce the impacts to less than significant levels. The significance of these impacts is discussed in detail above, as well as elsewhere in this document. The project will not cause substantial adverse effects on human beings.

This SED impact analysis concludes that there are potentially significant impacts from implementation of the TMDL, but notes that there are mitigation measures available to reduce potentially significant environmental impacts to less than significant levels. However, implementation of these mitigation measures are within the jurisdiction of the responsible agencies listed in this TMDL (Title 14, California Code of Regulations, Section 15091(a)(2)). 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 (Title 14, California Code of Regulations, Section 15091(a)(3)).

7. OTHER ENVIRONMENTAL CONSIDERATIONS

This section evaluates several other environmental considerations of reasonably foreseeable methods of complying with the OC Pesticides, PCBs, PAHs, Sediment Toxicity, and Metals TMDL, specifically:

7.1. Cumulative Impacts of the Program Alternatives (as required by CEQA Guidelines Section 15130);

7.2. Potential Growth-Inducing Effects of the Program Alternatives (as required by CEQA Guidelines Section 15126); and

7.3. Unavoidable Significant Impacts (as required by CEQA Guidelines Section 15126.2).

7.1 CUMULATIVE IMPACTS

Cumulative impacts, defined in Section 15355 of the CEQA Guidelines, refer to two or more individual effects, that when considered together, are considerable or that increase other environmental impacts. Cumulative impact assessment must consider not only the impacts of the proposed TMDL, but also the impacts from other municipal and private projects, which would occur in the watershed during the period of implementation.

The areas of cumulative impacts analyzed in this section include: 1) the program level cumulative impacts and 2) the project level cumulative impacts. On the program level, the impacts from multiple TMDLs, if they exist, are analyzed. On the project level, while the full environmental analysis of individual projects are the purview of the implementing municipalities and agencies, the cumulative impact analysis included here entails consideration of construction activities occurring in the vicinity of one another as a result of other projects being built in the same general time frame and location. The OC Pesticides, PCBs, PAHs, Sediment Toxicity, and Metals TMDL projects, if occurring with other construction projects, could contribute to temporary cumulative noise and vibration effects that would not occur with only one project.

7.1.1 PROGRAM CUMULATIVE IMPACTS

Currently there are no other TMDLs adopted for Colorado Lagoon. Based on the 303(d) list, the future TMDLs likely be developed is the Colorado Lagoon Bacteria TMDL. When other TMDLs are developed in the future, the programmatic cumulative impacts will be analyzed in the SED documents for those TMDLs. None of the implementation approaches for other TMDLs should disrupt any structural BMPs as applied for OC pesticides, PCBs, PAHs, sediment toxicity, and metals. In fact, potential implementation strategies discussed in this SED for the OC Pesticides, PCBs, PAHs, Sediment Toxicity, and Metals TMDL may contribute to the implementation of other TMDLs near the Colorado Lagoon in the future.

7.1.2 PROJECT CUMULATIVE IMPACTS

Specific TMDL projects must be environmentally evaluated and cumulative impacts considered as the implementing municipality or agency designs and sites the project. However, as examples, TMDL projects and other construction activities may result in cumulative effects of the following

nature:

Noise and Vibration - Local residents in the near vicinity of installation and maintenance activities may be exposed to noise and possible vibration. The cumulative effects, both in terms of added noise and vibration at multiple OC Pesticides, PCBs, PAHs, Sediment Toxicity, and Metals TMDL installation sites, and in the context of other related projects, are not considered cumulatively significant due to the temporary nature of noise increases. Noise mitigation methods including scheduling of construction or implementation device installation are available as discussed in the checklist. In addition, the fact that implementation BMP installation activities are being conducted in the same vicinity as other projects will not make mitigation methods less implementable.

Air Quality - Implementation of the OC Pesticides, PCBs, PAHs, Sediment Toxicity, and Metals TMDL Program may cause additional emissions of criteria pollutants and slightly elevated levels of carbon monoxide during construction or BMP device installation activities. The TMDL, in conjunction with all other construction activity, may contribute to the region's non-attainment status during the installation period. SCAQMD prepared the Air Quality Management Plan (AQMP) (2003) to bring the region into compliance with the National Ambient Air Quality Standards as set by the EPA under the Clean Air Act Amendments (1990). The AQMP is essentially designed to address the cumulative air pollutants released into the South Coast Air Basin (SCAB). Because these installations -related emissions are temporary, and because the AQMP addresses cumulative air pollution in the SCAB, compliance with the TMDL would not result in long-term significant cumulative air quality impacts. In the short term, cumulative impacts could be significant if the combined emissions from the individual TMDL projects exceed the threshold criteria for the individual pollutants.

Transportation and Circulation - Compliance with the OC Pesticides, PCBs, PAHs, Sediment Toxicity, and Metals TMDL involves installation activities occurring simultaneously at a number of surface sites in this TMDL area. Installation of BMP devices may be occurring in the same general time and space as other related or unrelated projects. In these instances, surface construction activities from all projects could produce cumulative traffic effects which may be significant, depending upon a range of factors including the specific location involved and the precise nature of the conditions created by the dual construction activity. Special coordination efforts may be necessary to reduce the combined effects to an acceptable level. Overall, significant cumulative impacts are not anticipated because coordination can occur and because transportation mitigation methods are available as discussed in the checklist. In addition, the fact that BMP device installation activities are being conducted in the same vicinity as other projects will not make mitigation methods less implementable.

Public Services - The cumulative effects on public services in the OC Pesticides, PCBs, PAHs, Sediment Toxicity, and Metals TMDL study area would be limited to traffic inconveniences discussed above. These effects are not considered cumulatively significant as discussed above.

Aesthetics - Construction activities associated with other related projects may be ongoing in the vicinity of one or more OC Pesticides, PCBs, PAHs, Sediment Toxicity, and Metals TMDL construction sites. To the extent that combined construction activities do occur, there would be temporary adverse visual effects of less than cumulatively significant proportions as discussed in the checklist.

7.2 GROWTH-INDUCING IMPACTS

This section presents the following:

7.2.1) an overview of the CEQA Guidelines relevant to evaluating growth inducement,

7.2.2) a discussion of the types of growth that can occur in the Colorado Lagoon Watershed,

7.2.3) a discussion of obstacles to growth in the watershed, and

7.2.4) an evaluation of the potential for the TMDL Program Alternatives to induce growth.

7.2.1 CEQA GROWTH-INDUCING GUIDELINES

Growth-inducing impacts are defined by the State CEQA Guidelines as (CEQA Guidelines, Section 15126.2(d)):

> 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. Included in this 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 characteristics of some projects… may encourage and facilitate other activities that could significantly affect the environment, either individually or cumulatively. It is not assumed that growth in any area is necessarily beneficial, detrimental, or of little significance to the environment.

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Growth inducement indirectly could result in adverse environmental effects if the induced growth is not consistent with or accommodated by the land use plans and growth management plans and policies. Local land use plans provide for land use development patterns and growth policies that encourage orderly urban development supported by adequate public services, such as water supply, roadway infrastructure, sewer services, and solid waste disposal services.

Public works projects that are developed to address future unplanned needs (i.e., that would not accommodate planned growth) could result in removing obstacles to population growth. Direct growth inducement would result if, for example, a project involved the construction of new wastewater treatment facilities to accommodate populations in excess of those projected by local or regional planning agencies. Indirect growth inducement would result if a project accommodated unplanned growth and indirectly established substantial new permanent employment opportunities (for example, new commercial, industrial, or governmental enterprises) or if a project involved a construction effort with substantial short-term employment opportunities that indirectly would stimulate the need for additional housing and services. Growth inducement also could occur if the project would affect the timing or location of either population or land use growth, or create a surplus in infrastructure capacity.

7.2.2 TYPES OF GROWTH

The primary types of growth that occur within the OC Pesticides, PCBs, PAHs, Sediment Toxicity, and Metals TMDL area are:

1) development of land, and

2) population growth (Economic growth, such as the creation of additional job opportunities, also could occur; however, such growth generally would lead to population growth and, therefore, is included indirectly in population growth.)

Growth in land development

Growth in land development is the physical development of residential, commercial, and industrial structures in the OC Pesticides, PCBs, PAHs, Sediment Toxicity, and Metals TMDL area. Land use growth is subject to general plans, community plans, parcel zoning, and applicable entitlements and is dependent on adequate infrastructure to support development.

Population Growth

Population growth is growth in the number of persons that live and work in the OC Pesticides, PCBs, PAHs, Sediment Toxicity, and Metals TMDL area and other jurisdictions within the boundaries of the area. Population growth occurs from natural causes (births minus deaths) and net emigration to or immigration from other geographical areas. Emigration or immigration can occur in response to economic opportunities, life style choices, or for personal reasons.

Although land use growth and population growth are interrelated, land use and population growth could occur independently from each other. This has occurred in the past where the housing growth is minimal, but population within the area continues to increase. Such a situation results in increasing population densities with a corresponding demand for services, despite minimal land use growth.

Overall development in the City of Long Beach is governed by the City' General Plan, which is intended to direct land use development in an orderly manner. The General Plan is the framework under which development occurs, and, within this framework, other land use entitlements (such as variances and conditional use permits) can be obtained. Because the General Plan guides land use development and allows for entitlements, it does not represent an obstacle to land use growth. The cities within the OC Pesticides, PCBs, PAHs, Sediment Toxicity, and Metals TMDL area also have plans which direct land use development.

7.2.3 EXISTING OBSTACLES TO GROWTH

Obstacles to growth could include such things as inadequate infrastructure, such as an inadequate water supply that results in rationing, or inadequate wastewater treatment capacity that results in restrictions in land use development. Policies that discourage either natural population growth or immigration also are considered to be obstacles to growth.

7.2.4 POTENTIAL FOR COMPLIANCE WITH THE PROPOSED TMDL TO INDUCE GROWTH.

Direct Growth Inducement

Because the reasonably foreseeable methods of compliance with the proposed OC Pesticides, PCBs, PAHs, Sediment Toxicity, and Metals TMDL focus on structural BMPs, non-structural BMPs and improvements to the storm drain system which are located throughout the urbanized portion of this TMDL area, this TMDL would not result in the construction of new housing and, therefore, would not directly induce growth.

Indirect Growth Inducement

Two areas of potential indirect growth inducement are relevant to a discussion of the proposed TMDL: (1) the potential for compliance with the TMDL to generate economic opportunities that could lead to additional immigration, and (2) the potential for the proposed TMDL to remove an obstacle to land use or population growth.

Installation and/or construction of structural BMPs to comply with the proposed TMDL would occur over a 7-year time period. Installation and maintenance spending for compliance would generate jobs throughout the region and elsewhere where goods and services are purchased or used to install structural BMPs. Based on the above annual construction cost estimates, the alternatives would result in direct jobs and indirect jobs. The creation of jobs in the region is considered a benefit.

Although the construction activities associated with the OC Pesticides, PCBs, PAHs, Sediment Toxicity, and Metals TMDL would increase the economic opportunities in the area and region, this construction is not expected to result in or induce substantial or significant population or land use development growth because the majority of the new jobs that would be created by this construction are expected to be filled by persons already residing in the area or region, based on the existing surplus of unemployed persons in the area and region. SCAG estimates that the SCAG region had over 405,000 unemployed persons (City of Los Angeles, 2005).

The second area of potential indirect growth inducement is through the removal of obstacles to growth. As discussed above, no obstacles exist to land use or to population growth in the watershed.

7.3 UNAVOIDABLE SIGNIFICANT ADVERSE IMPACTS

Section 15126.2(c) of the CEQA Guidelines requires a discussion of potential significant, irreversible environmental changes that could result from a proposed project. 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. Although the proposed TMDL would require resources (materials, labor, and energy) they do not represent a substantial irreversible commitment of resources.

In addition, implementation of the TMDL will have substantial benefits to water quality and will enhance beneficial uses. Enhancement of the recreational beneficial uses (both water contact recreation and non-contact water recreation) will have positive social and economic effects by decreasing potential OC pesticides, PCBs, PAHs, sediment toxicity, and metals hazards and increasing the aesthetic experience at beaches, parks around the lagoon, and other recreation areas. In addition, habitat carries a significant non-market economic value. Enhancement of habitat beneficial uses will also have positive indirect economic and social benefits. Section 6 of this SED identifies the anticipated environmental effects for each resource area, identifies mitigation measures for potentially significant impacts, and determines that impacts after implementation of mitigation are insignificant.

8. STATEMENT OF OVERRIDING CONSIDERATIONS AND DETERMINATION

The Regional Board staff has balanced the economic, legal, social, technological, and other benefits of this proposed OC Pesticides, PCBs, PAHs, Sediment Toxicity, and Metals TMDL against the unavoidable environmental risks in determining whether to recommend that the Regional Board approves this project. Upon review of the environmental information generated for this project and in view of the entire record supporting the TMDL, staff has determined that the specific economic, legal, social, technological, and other benefits of this proposed OC Pesticides, PCBs, PAHs, Sediment Toxicity, and Metals TMDL outweigh the unavoidable adverse environmental effects, and that such adverse environmental effects are acceptable under the circumstances.

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. Enhancement of the recreational beneficial uses (both water contact recreation and non-contact water recreation) will have positive social and economic effects by decreasing potential hazards and increasing the aesthetic experience at the waterbodies of concern in the Colorado Lagoon Watershed. Specific projects employed to implement the Basin Plan amendment may have adverse significant impacts to the environment, but these impacts are generally expected to be limited, short-term or may be mitigated through design and scheduling.

The Staff Report, Basin Plan Amendment, and this SED provide the necessary information pursuant to Public Resources Code section 21159 to conclude that properly designed and implemented BMPs generally should not foreseeably have a significant adverse effect on the environment. Any potential impacts can be mitigated at the subsequent project level when specific sites and methods have been identified, and responsible agencies can and should implement the recommended mitigation measures.

For this TMDL, mitigation measures are available to reduce environmental impacts to less than significant levels and in most cases are routine measures that are typically used in construction projects and infrastructure maintenance. Routine construction and maintenance of power lines and storm sewer systems are regular and expected activities carried out by responsible parties. Sewer and power line maintenance, traffic alterations, and environmental impacts from them already occur and are expected. This project will foreseeably require these types of projects and their individual impacts are not expected to be extraordinary in the magnitude or severity of impacts.

Specific projects to comply with this TMDL that may have a significant impact will be implemented by responsible jurisdictions and would therefore be subject to a separate environmental review. The lead agency for the TMDL Implementation 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. Notably, in almost all circumstances, where unavoidable or immitigable impacts would present unacceptable hardship upon nearby receptors or venues, the local agencies have a variety of alternative implementation measures available instead. Cumulatively, the many, small individual projects may have a significant effect upon life and the environment throughout the region.

This TMDL is required by law under section 303(d) of the federal Clean Water Act (CWA), and if this Regional Board does not establish this TMDL, the USEPA will be required to develop a TMDL. The CWA requires states to establish a priority ranking for waters on the 303(d) list of

impaired waters and to develop and implement TMDLs for these waters (40 CFR §130.7). The impacts associated with USEPA's establishment of the TMDL would be significantly more severe, as discussed herein, because USEPA will not provide a compliance schedule, and the final waste load allocations, pursuant to federal regulations, would need to be complied with upon incorporation into the relevant stormwater permits. (40 CFR 122.44(d)(1)(vii)(B).) Since compliance would not be authorized over a period of years, all of the impacts associated with complying would be truncated into a short time frame, thus exacerbating the magnitude of the cumulative effect of performing all projects relatively simultaneously throughout the region.

The implementation of this TMDL will result in improved water quality in the Colorado Lagoon Watershed, but it may result in short-term localized significant adverse impacts to the environment as a variety of small construction projects may be undertaken in the vicinity of the waterbodies of concern in the Colorado Lagoon Watershed. Individually, these impacts are generally expected to be limited, short-term or may be mitigated through careful design and scheduling. The Staff Report for the Colorado Lagoon OC Pesticides, PCBs, PAHs, Sediment Toxicity, and Metals TMDL and this checklist provide the necessary information pursuant to Public Resources Code section 21159 to conclude that properly designed and implemented structural or non-structural BMPs of compliance should mitigate and generally avoid significant adverse effects on the environment, and all agencies responsible for implementing the TMDL should ensure that their projects are properly designed and implemented.

All of the potential impacts must, however, 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. The Regional Board does not have legal authority to specify the manner of compliance with its orders or regulations (Wat. C. § 13360), and thus cannot dictate that an appropriate location be selected for any particular project, that it be designed consistent with standard industry practices, or that routine and ordinary mitigation measures be employed. These measures are all within the jurisdiction and authority of the agencies that will be responsible for implementing this TMDL, and those agencies can and should employ those alternatives and mitigation measures to reduce any impacts as much as feasible. (14 Cal. Code Regs., § 15091(a)(2).)

Implementation of the TMDL is both necessary and beneficial. To the extent that the alternatives, mitigation measures, or both, that are examined in this analysis are not deemed feasible by responsible agencies, the necessity of implementing the federally required TMDL and removing the OC pesticides, PCBs, PAHs, sediment toxicity, and metals impairment from the Colorado Lagoon Watershed (an action required to achieve the express, national policy of the Clean Water Act) remains.

DISCUSSION OF ENVIRONMENTAL EVALUATION (Based on information in the Colorado Lagoon OC Pesticides, PCBs, PAHs, Sediment Toxicity, and Metals TMDL Staff Report and Substitute Environmental Document for the Colorado Lagoon OC Pesticides, PCBs, PAHs, Sediment Toxicity, and Metals TMDL)

This SED impact analysis concludes that there are potentially significant impacts from implementation of the TMDL, but notes that there are mitigation measures available to reduce potentially significant environmental impacts to less than significant levels. However, implementation of these mitigation measures are within the jurisdiction of the responsible agencies listed in this TMDL (Title 14, California Code of Regulations, Section 15091(a)(2)). 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 (Title 14, California Code of Regulations, Section 15091(a)(3)).

PRELIMINARY STAFF DETERMINATION

☐ The proposed project COULD NOT have a significant effect on the environment, and, therefore, no alternatives or mitigation measures are proposed.

☑ The proposed project MAY have a significant or potentially significant effect on the environment, and therefore alternatives and mitigation measures have been evaluated.

Signature	Date
Printed Name	For

Note: Authority cited: Sections 21083 and 21087, Public Resources Code. Reference: Sections 21080(c), 21080.1, 21080.3, 21082.1, 21083, 21083.3, 21093, 21094, 21151, Public Resources Code; Sundstrom v. County of Mendocino, 202 Cal.App.3d 296 (1988); Leonoff v. Monterey Board of Supervisors, 222 Cal.App.3d 1337 (1990).

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