

Substitute Environmental Document

Machado Lake Pesticides and PCBs TMDL

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

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TABLE OF CONTENTS

Executive Summary	3
Project Purpose.....	6
Legal Background	6
Water Quality Standards Applicable to the Waters Subject to the TMDLs	8
Problem Identification.....	9
Alternatives Analysis	9
Description of Alternatives.....	10
Program Alternatives.....	11
Alternative 1 - The TMDL as it is proposed for Regional Board adoption	11
Alternative 2 – USEPA TMDL	12
Alternative 3 - No Program Alternative	13
Recommended Program Alternative	14
Project Level Alternatives	15
Description Of Potential Implementation Alternatives	15
Stormdrain Systems.....	15
Settings, Impacts, And Mitigation	19
Introduction.....	19
Approach to Environmental Setting and Impact Analysis	19
Program Level versus Project-Level Analysis	20
Environmental Setting.....	20
CEQA Checklist and Determination.....	26
Environmental Impact Analysis	33
Other Environmental Considerations.....	95
Cumulative Impacts	96
Program Cumulative Impacts.....	96
Project Cumulative Impacts	96
Growth-Inducing Impacts	97
CEQA Growth-Inducing Guidelines.....	98
Types of Growth	98
Existing Obstacles to Growth.....	99
Potential for Compliance with the Proposed TMDL to Induce Growth.	99
Unavoidable Significant Adverse Impacts	100
Statement Of Overriding Considerations And Determination.....	100
References.....	105

List of Figures

Figure 1. Regional Location Map of Machado Lake Area	21
Figure 2 Dominguez Channel Watershed and Machado Lake Sub-watershed	22
Figure 3 Aerial View Ken Malloy Harbor Regional Park and Machado Lake.....	24

List of Tables

Table 1 Designated Beneficial Uses of Machado Lake.....	8
Table 2 Pollutant waterbody combination.....	8
Table 3 Designated Beneficial Uses of Machado Lake.....	25
Table 4 Typical Installation Equipment Noise Emission Levels.....	65

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 pesticides and PCBs in Machado Lake. This Substitute Environmental Document (SED) analyzes environmental impacts that may occur from reasonably foreseeable methods of implementing a TMDL for pesticides and PCBs in Machado Lake. This SED is based on a proposed TMDL 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 TMDL is described in the Staff Report, Tentative Board Resolution and Tentative Basin Plan Amendment available on the Regional Board website. This SED analyzes foreseeable methods of compliance with the 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 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 10590 15090 of CEQA Guidelines (Title 14 of CCR)).

Machado Lake is identified on the 1998, 2002, 2006, and 2008 Clean Water Act 303(d) list of impaired water bodies as impaired due to chlordane, DDT, dieldrin, Chem A, and PCBs in tissue.

Chem A (abbreviation for chemical group A) is a suite of bio-accumulating pesticides that includes chlordane and dieldrin. The 1998 303(d) listing (and subsequent listings) for Chem A was predominately based on fish tissue concentrations of chlordane and dieldrin. Therefore, the TMDL only addresses the Chem A pollutants (chlordane and dieldrin) that are causing impairment.

Because of potential harm to human health and the environment, the use of these pollutants has been banned for many years; however, the physio-chemical properties of the pollutants make them very persistent in the environment. These pollutants, bound to soil particles, are easily transported with runoff to surface waterbodies. Contaminated sediments accumulate in the waterbodies and aquatic organisms are exposed to the toxic pollutants. Moreover, all of these pollutants bioaccumulate as they move through the food chain, thereby not only spreading throughout the food chain, but increasing exposure as well. Finally, sediment toxicity has been reported at Machado Lake, and it is likely that pesticides and PCBs contribute to the toxic condition of the sediments. Pesticides and PCBs in Machado Lake result in impairments of beneficial uses associated with recreation (REC 1 and REC 2) and aquatic life (WARM, WILD, RARE, and WET).

A pesticides and PCBs TMDL 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 (US EPA). This consent decree requires that all TMDLs for the Los Angeles Region be adopted within 13 years, and prescribes

schedules for certain TMDLs. The objective of the TMDL is to restore the beneficial uses of Machado Lake that are currently impaired by pesticides and PCBs, in accordance with Clean Water Act section 303(d).

The pesticides and PCBs 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 Los Angeles County Municipal Separate Storm Sewer System (MS4) permit and the California Department of Transportation (Caltrans) Statewide Stormwater permit. LAs will be implemented through a Memorandum of Agreement in accordance with the Water Quality Control Policy for Addressing Impaired Waters: Regulatory Structure and Options ("Policy"), Cleanup and Abatement Order or other appropriate regulatory order. The implementation plan includes lake management strategies/lake treatment options that will be implemented directly at the lake and watershed strategies for stormwater runoff throughout the watershed to treat and reduce pesticides and PCBs loading to the lake. Potential adverse impacts to the environment stem principally from the installation, operation, and maintenance of stormwater treatment options such as sand/organic filters, vegetated swales, and filter strips, and lake remediation strategies such as hydraulic dredging and sediment capping.

This SED analyzes three Program Alternatives and two types of Implementation 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 Machado Lake 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 TMDL Responsible Jurisdictions. Consequently, this environmental analysis is structured in accordance with guidelines for a Tier 1 Program SED rather than a Tier 2 Project SED.

Municipalities and agencies that will implement specific projects and best management practices (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 have responsibility for environmental review of the projects they determine necessary 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. 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 cities and municipalities implementing TMDL projects.

Many of the specific projects and BMPs analyzed in this SED will involve small construction projects and maintenance of equipment and stormdrain 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, and additional light and glare. These foreseeable impacts are analyzed in detail in 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, BMPs, 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. 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 TMDL by focusing on improvements to the stormdrain system and lake management activities. BMPs and lake management activities in the Machado Lake pesticides and PCBs TMDL area generally would not cause significant impacts that cannot be mitigated through commonly used construction and maintenance practices. The SED finds that environmental impacts from the TMDL are those impacts related to installation and maintenance of lake management activities 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 TMDL. To the extent that there are unavoidable adverse environmental impacts, the benefits of this TMDL outweigh these impacts.

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 TMDL.

Many of the mitigation measures identified in the SED are common practices currently employed by agencies when planning and implementing stormwater 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 stormwater BMPs (Caltrans, 2002, CASQA, 2003a, CASQA, 2003b, WERF, 2005). 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 alternatives analysis section of this SED discusses the program level alternatives for the TMDL and presents implementation alternatives to achieve compliance with the

WLAs and LAs. Some implementation alternatives are discussed in the SED as well. Site specific environmental impacts and the CEQA Checklist and Determination with in-depth analysis of each resource area, as well as other environmental considerations are also discussed.

PROJECT PURPOSE

The Regional Board proposes an amendment to the Water Quality Control Plan for the Los Angeles Region, also known as the Basin Plan, to incorporate a TMDL to reduce pesticides and PCBs in Machado Lake.

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 pesticides and PCBs in Machado Lake; and
- To establish a TMDL for Machado Lake 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 US EPA'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 the 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.

LEGAL BACKGROUND

The TMDL for pesticides and PCBs in Machado Lake is designed to attain the water quality standards for pesticides and PCBs in this Lake. The TMDL is prepared pursuant to state and federal requirements to preserve and enhance water quality in Machado Lake. 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 Basin Plan sets water quality standards for surface waters and ground waters in the region. These standards are comprised of designated beneficial uses (both existing and potential) for surface and ground water, and numeric and narrative objectives or criteria necessary to support beneficial uses, and the state's antidegradation policy. Water quality standards are mandated for all waterbodies within the state under the Porter-Cologne Water Quality Act, and for waters of the United States, by the federal Clean Water Act (CWA). In addition, the Basin Plan describes implementation programs to protect all waters in the region. The Basin Plan guides implementation of the Porter-

Cologne Water Quality Control Act (commencing at Section 13000 of the “California Water Code”) and serves as the State Water Quality Control Plan applicable to Machado Lake.

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. Waters identified as impaired are compiled and submitted biennially to USEPA as the state’s “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 identified water, whether “listed” or not. Those TMDLs, the waters identified as impaired, and the 303(d) List, must be submitted to USEPA for approval under section 303(d)(2). Under the plain language of the CWA and as confirmed in *Cities of Arcadia v. SWRCB* (2006) 135 Cal.App.4th 1392, 1418, the CWA neither prohibits a Regional Board from identifying a water body as impaired and establishing a TMDL for it at essentially the same time, nor indicates that formal listing is a prerequisite to establishing a TMDL. In any event, the CWA requires TMDLs be established for all waters, impaired or not. While section 303(d)(1)(C) and (d)(1)(D) together require TMDLs for all waters identified as impaired, section 303(d)(3) requires TMDLs for all other waters, that is, those that have not been identified as impaired. Section 303(d)(3) TMDLs, however, are not subject to approval by USEPA. From California’s perspective, no practical distinction exists between (d)(1) and (d)(3) TMDLs except the requirement for USEPA approval of the former under subdivision (d)(2). All TMDLs are ultimately memorialized in the basin plan, and are subject to implementation pursuant to California Water Code section 13242.

Section 303(d)(1)(C) requires TMDLs to be established at a level necessary to attain the applicable water quality standards, considering seasonal variations and a margin of safety. The TMDL must also include an allocation of parts of the total allowable load (or loading capacity) to all point sources and to 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 an impaired reach or to an unimpaired upstream tributary.

As referenced above, 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 and TMDLs for such waters. If any identification or TMDL is disapproved, USEPA must establish its own TMDL or conduct his own identification.

The consent decree requires that all TMDLs for the Los Angeles Region, for 1998 303(d) listed waters, be adopted within 13 years. The consent decree also prescribed schedules for certain TMDLs. According to the consent decree, Machado Lake Pesticides and PCBs TMDL must be approved or established by USEPA by March 2012.

The California Resources Agency has approved the Regional Boards’ basin planning process as a “certified regulatory program” (Public Resources Code section 21080.5)

that adequately satisfies the California Environmental Quality Act (CEQA) (Public Resources Code, Section 21000 et seq) requirements for preparing environmental documents. (14 Cal. Code Regs. § 15251(g); 23 Cal. Code Regs. § 3782.) As such, the Regional Board’s basin planning documents together with an Environmental Checklist are the “substitute documents” that contain the required environmental documentation under CEQA. (23 Cal Code Regs. § 3777.)

These Substitute Environmental Documents and accompanying tentative resolution and basin plan amendment for adoption by the Regional Board are being released for public comment. These documents along with the CEQA checklist dated April 14, 2010; the Machado Lake Pesticides and PCBs TMDL staff report dated April 14, 2010; response to comments dated **[Insert Date]**; and any subsequent responses to comments, fulfill the requirements of Public Resources Code section 21080.5 and 23 Cal Code Regulations §3777.

WATER QUALITY STANDARDS APPLICABLE TO THE WATERS SUBJECT TO THE TMDLS

CWA section 303(d)(1)(C) requires TMDLs to be established at a level necessary to implement the “applicable water quality standards”. In this case, the applicable water quality standards include numerous designated beneficial uses and water quality objectives identified in the Basin Plan for the Los Angeles Regional Board (Basin Plan). The Basin Plan for the Los Angeles Regional Board (LARWQCB, 1994) defines seven beneficial uses for Machado Lake (Table 1). These uses are recognized as existing (E), potential (P) or intermittent (I) uses. Pesticides and PCBs loading to Machado Lake may result in impairments of beneficial uses associated with recreation (REC 1 and REC 2) and aquatic life (WARM, WILD, RARE, and WET).

Table 1 Designated Beneficial Uses of Machado Lake

Reach	MUN	REC 1	REC 2	WARM	WILD	RARE	WET
Machado Lake	P*	E	E	E	E	E	E

P* indicates a conditional designation, which is not recognized under federal law and is not a water quality standard requiring TMDL development at this time.

The following pollutant-waterbody combination was identified as impaired for failing to attain water quality objectives, and placed on the 303(d) List (Table 2).

Table 2 Pollutant waterbody combination.

Waterbody	Pollutant/Stressor	Date Impairment Identified
Machado Lake (Harbor Park Lake)	Chem A (tissue) Chlordane (tissue), DDT (tissue) Dieldrin (tissue) PCBs (Polychlorinated biphenyls) (tissue)	1998, 2002, 2006, and 2008 303(d) List

WATER QUALITY OBJECTIVES

Narrative water quality objectives are specified by the 1994 Los Angeles Regional Board Basin Plan. The following narrative objectives are most pertinent to the Machado Lake Pesticides and PCBs 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.*

PROBLEM IDENTIFICATION

Machado Lake is impaired for chlordane, DDT, dieldrin, and PCBs in tissue and chlordane, DDT, and PCBs in sediment. Because of potential harm to human health and the environment, the use of these pollutants has been banned for many years; however, the physio-chemical properties of the pollutants make them very persistent in the environment. These pollutants, bound to soil particles, are easily transported with runoff to surface waterbodies. Contaminated sediments accumulate in the waterbodies and aquatic organisms are exposed to the toxic pollutants. Moreover, all of these pollutants bioaccumulate as they move through the food chain, thereby not only spreading throughout the food chain, but increasing exposure as well. Finally, sediment toxicity has been reported at Machado Lake, and it is likely that OC pesticides and PCBs contribute to the toxic condition of the sediments.

The exposure of the Machado Lake ecosystem to chlordane, DDT, dieldrin, and PCBs has impaired the aquatic life (WARM, WILD, RARE, WET) and recreation (REC 1, REC2) beneficial uses of the lake. As a result, Machado Lake was placed on the Clean Water Act 303(d) list of impaired waterbodies in 1998, 2002, 2006 and 2008. TMDLs are developed to reduce sediment contamination in Machado Lake for chlordane, DDT, dieldrin, and PCBs.

ALTERNATIVES ANALYSIS

According to CEQA Guidelines section 15126.6:

“An EIR shall describe a range of reasonable alternatives to the proposed project, or to the location of the project, that could feasibly attain most of the basic objectives of the project but would avoid or substantially lessen any of the significant effects of the project, and evaluate the comparative merits of the alternatives. An EIR need not consider every conceivable alternative to a project. Rather it must consider a reasonable range of potentially feasible alternatives that will foster informed decision making and public participation.”

Under the regulation, the alternatives to be analyzed are limited to those that are feasible, would accomplish most of the basic objectives of the project, and would avoid or substantially lessen any of the significant effects of the project. “Feasible means capable of being accomplished in a successful manner within a reasonable period of time, taking into account economic, environmental, legal, social, and technological factors.” (14 Cal. Code Regs. §15364.)

Notably, the purpose of the alternatives analysis is to ascertain whether alternatives exist that offer substantial environmental advantages over the project proposal....; and (2) may be ‘feasibly accomplished in a successful manner’ considering the economic, environmental, social and technological factors involved. (Guide to CEQA, Remy, Thomas, Moose, & Manley, 10th Ed. (1999), p. 432, citing, *Citizens of Goleta Valley v. Board of Supervisors* (1990) 52 Cal.3d 553, 566.)

DESCRIPTION OF ALTERNATIVES

In this alternatives analysis, the Regional Board has evaluated three potential program-level alternatives, set forth individually below. This analysis concludes that Alternatives 2 and 3 are not feasible, would not achieve the project’s purposes, or would not result in less significant impacts than the project as proposed. The program alternatives include:

- 1) The TMDL as it is proposed for Regional Board adoption;
- 2) A TMDL established by the US EPA;
- 3) A No Program Alternative in which a TMDL is not implemented.

While a no-program alternative is unlawful, because a TMDL is required by Section 303(d) of the Clean Water Act and a federal consent decree, this alternative is analyzed to allow decision makers to compare the impacts of approving a proposed alternative and its components with the impacts of not approving a proposed alternative.

The Regional Board also considered but declines to further analyze several alternatives brought up by stakeholders in other Regional Board adopted TMDLs (e.g., the Los Angeles River and Ballona Creek Metals TMDLs) where the Superior Court already denied challenges to the Regional and State Water Resources Control Boards’ conclusion that they were either infeasible or would not achieve the project’s purpose. These include (1) developing a “super TMDL” that would address all pollutants at the same time; (2) allowing third parties to develop the TMDL; (3) deferring to other federal or state programs in lieu of a TMDL.

The substitute documents do not analyze a “partial” TMDL; for example, a TMDL which would achieve only 70% or only an 80% of the required reduction in target pollutants. 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, and to the extent that a “partial” TMDL may, 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 pesticides and PCBs would not be established at a level necessary to implement the applicable water quality standards.

The components assessed at a program level generally are program elements that would be implemented as part of the 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 specifics of the many projects which would make up a program alternative are discussed in the substitute environmental documents and include structural and non-structural BMPs and lake sediment remediation projects that are reasonably foreseeable to be implemented under the TMDL program alternatives. The project-level components will be subject to additional future environmental review, including review by cities and municipalities implementing TMDL projects.

PROGRAM ALTERNATIVES

ALTERNATIVE 1 - THE TMDL AS IT IS PROPOSED FOR REGIONAL BOARD ADOPTION

This program alternative is based on the TMDL that is presently proposed for Regional Board consideration. The proposed TMDL focuses on the reduction of pesticides and PCBs in Machado Lake.

The TMDL WLAs and LAs are established through an amendment to Basin Plan. Waste load allocations are assigned to municipal stormwater discharges, general industrial and construction stormwater discharges. Load allocations are assigned to internal lake sediments. This alternative provides a program for addressing the adverse impacts of pesticides and PCBs through a progressive reduction in pesticides and PCBs discharged to Machado Lake 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.

POTENTIAL ENVIRONMENTAL IMPACTS

Potential environmental impacts associated with this alternative are related to the implementation of WLAs and LAs assigned to responsible jurisdictions. Stormwater WLAs will be implemented through the Los Angeles County MS4 permit and the Caltrans Statewide Stormwater permit. LAs for nonpoint sources will be implemented through a MOA in accordance with the Water Quality Control Policy for Addressing

Impaired Waters: Regulatory Structure and Options (“Policy”), a Cleanup and Abatement Order or other appropriate regulatory order.

During the development of the TMDL, the reasonably foreseeable means of compliance were examined. The implementation plan includes lake management strategies/lake treatment options that will be implemented directly at the lake and watershed strategies for stormwater runoff throughout the watershed to treat and reduce pollutant loading to the lake. Lake management strategies include sediment capping, dredging/hydraulic dredging, and monitored natural attenuation of contaminants. Watershed strategies for stormwater runoff include installation of sand/organic filters, vegetated swales, filter strips, and non-structural stormwater BMPs. The removal efficiencies of these treatment options as reported by USEPA, the Federal Highway Administration (FHWA), and Caltrans, further support their use as reasonable means of compliance.

This TMDL program alternative anticipates compliance through a combination lake management and, non-structural and structural BMPs. Non-structural BMPs may include source control programs such as public education, planning management in developing areas, and illegal dumping controls. Structural BMPs may include the installation of stormwater treatment devices specifically designed to reduce sediment loadings, such as infiltration trenches and sand or organic filters, at critical points in the stormwater conveyance system. Such devices may also incorporate surge control, such as underground storage vaults or detention basins.

Potential adverse impacts to the environment stem principally from the installation, operation, and maintenance of lake management and stormwater treatment options such as sediment capping, dredging/hydraulic dredging, and monitored natural attenuation of contaminants, sand/organic filters, vegetated swales, and filter strips. Potential associated negative impacts can be avoided or mitigated by proper design, siting, and maintenance. In addition, the Regional Board determined that any significant impacts can be mitigated or that there are alternative means of compliance available. T

ANALYSIS OF ALTERNATIVE 1

This alternative is reasonable and feasible. It accomplishes the project’s purposes, as described in the Project Purpose section. It complies with state and federal law and the consent decree by establishing a TMDL as required by section 303(d). It also achieves the Regional Board’s goal of removing impairments due to pesticides and PCBs from Machado Lake over a reasonable implementation schedule.

ALTERNATIVE 2 – USEPA TMDL

This program alternative is based on a TMDL that would be established by US EPA, pursuant to the consent decree. This would occur if the Regional Board fails to adopt a TMDL. Because the TMDL technical analysis would be similar to the Regional Board analysis, and because the same laws and regulations apply, it is assumed that the technical portions and allocations of this TMDL Program Alternative will be essentially the same as Program Alternative 1. In other words, any TMDL must implement the water quality objectives irrespective of which agency establishes it. However, because such a TMDL would not be implemented through a Basin Plan amendment, the WLAs

will be implemented directly 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.

POTENTIAL ENVIRONMENTAL IMPACTS

Like Alternative 1, this TMDL program alternative also anticipates compliance through installation of lake management strategies/lake treatment options that will be implemented directly at the lake and watershed strategies for dischargers to treat and reduce contaminant loading to the lake. Potential adverse impacts to the environment likewise stem principally from the installation, operation, and maintenance of the proposed implementation alternatives. The installation of implementation projects are of relatively short duration and typical of “baseline” construction and maintenance projects. The reduction in pesticides and PCBs in the lake as the result of the proposed implementation actions is a positive impact and any associated negative impacts can be avoided or mitigated by proper design, siting, and maintenance. In addition, any significant impacts can be mitigated or there are alternative means of compliance available that would have less impacts.

ANALYSIS OF ALTERNATIVE 2

Alternative 2 assumes the Regional Board would abdicate its responsibility under section CWA section 303(d), as delegated to it by CWC section 13160. This alternative does not achieve the project’s purpose that the Regional Board comply with 303(d) to prevent federal assumption of water quality planning in California.

Further, if USEPA established the TMDL, any adverse impacts would be more significant, not less. The same WLAs and LAs will need to be met and the same technological choices will be available under both this alternative, and Alternative 1. 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 five years. The environmental impacts due to Alternative 2 may be of greater severity however, 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, temporal distribution of compliance measures resulting in less concentration of 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.

ALTERNATIVE 3 - NO PROGRAM ALTERNATIVE

This program alternative assumes that neither the USEPA nor the Regional Board implements a TMDL. While responsible parties could implement BMPs on a discretionary basis, this CEQA analysis is based on the assumption that no additional BMPs or lake management activities 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 US EPA. Therefore, the failure to implement a TMDL is unlawful. Further, the no-program

alternative does not achieve any of the projects purposes, and is inconsistent with the Regional Board's mission.

POTENTIAL ENVIRONMENTAL IMPACTS

To the extent that significant adverse environmental impacts would be created by compliance with the TMDL as proposed, a no program alternative may avoid those environmental impacts associated with compliance. However, a no program alternative would have none of the environmental benefits of the TMDL as proposed, and would not achieve the goals of the CWA or the Porter-Cologne Act.

ANALYSIS OF ALTERNATIVE 3

This alternative is inconsistent with (a) CWA section 303(d), which requires the "state" to establish the TMDLs; (b) CWC section 13160, which delegates to the Regional Board the responsibility to implement the Clean Water Act; (c) state policy for water quality control; (d) the mission of the Regional Boards; and (e) the purposes of the CWA and Porter-Cologne Act which require restoration and attainment of water quality standards. Nothing in section 303(d) authorizes an alternative to a state established TMDL (except an EPA established TMDL), and nothing in CWC section 13160 authorizes the Regional Board to delegate the authority therein to stakeholders. Section 303(d) does not authorize a section 102 planning process as an alternative to a TMDL either. It says "each *state* shall establish...." Accordingly, an alternative that would involve no TMDL is not legal, and therefore not feasible.

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 to Machado Lake or attain water quality standards and represents a continued impairment of the environment. The ongoing impairment of this waterbody is far more significant than the nominal impacts that the responsible parties discharging pollutants will be forced to endure from construction and implementation of compliance measures because Machado Lake provides habitat for numerous species of threatened and endangered birds, and other wildlife and provides recreational opportunities for the community such as picnicking and fishing. Furthermore, the lake allows nature to exist in the urban environment, where parks and open space are scarce. The no-program alternative would allow continued impairment of these uses and continued degradation of water quality to the detriment of public health, property values, flood control capacity, cleaner streets, and green spaces.

Alternative 3 is not a feasible alternative because, while it avoids impacts due to discrete installation and management projects, it is illegal, and it does not achieve any of the project purposes to restore and maintain water quality standards and avert federal intervention in state water quality planning.

RECOMMENDED PROGRAM ALTERNATIVE

This environmental analysis finds that Program Alternative 1 is the most environmentally advantageous alternative, has the least associated significant adverse impacts, and is the only alternative that would achieve all the project purposes.

Either Alternative 1 or 2 will restore beneficial uses in Machado Lake and attain water quality standards by reducing pollutant loading to Machado Lake. As such, either TMDL Alternative 1 or 2 represents a benefit to the environment. The key environmental difference between program Alternatives 1 and 2 is the establishment of an implementation schedule. Alternative 1 contains an implementation schedule that allows compliance projects to be spread out over time to lessen potential environmental impacts. Alternative 2, therefore would foreseeably result in more significant impacts, not less. The key programmatic difference between Alternatives 1 and 2 is that Alternative 1 maintains state responsibility and control over water quality planning in California; Alternative 2 abdicates that responsibility to USEPA. Alternative 1, therefore meets all project purposes. Alternative 1 is therefore the recommended alternative.

PROJECT LEVEL ALTERNATIVES

The program alternatives above present many alternatives and options and do not require any specific projects to achieve compliance. Rather, a project level analysis must be performed by the responsible parties 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 responsible parties 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 (March 18, 2010) during which the manner of compliance was discussed. Potential compliance measures include structural stormwater BMPs such as diversion and treatment systems and lake management projects such as hydraulic dredging.

The components assessed at a project level have specific locations which will be determined by responsible parties. The project-level components will be subject to additional future environmental review, including review by responsible parties implementing TMDL projects. This SED includes an extensive discussion of the project alternatives.

DESCRIPTION OF POTENTIAL IMPLEMENTATION ALTERNATIVES

This Section of the SED begins with a description of the stormwater system in the TMDL area and a description of the type of sites where structural devices or controls might be placed in compliance with the TMDL.

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

STORMDRAIN SYSTEMS

Underground stormdrains are typically designed to carry the runoff from up to a 10-year storm. Open channels are typically designed to carry the runoff from up to a 50-year

storm, and in some cases, this design flow rate is increased to accommodate debris-laden flows. The rate of runoff a drain can safely convey, expressed in cubic feet per second, is called its peak capacity. While a drain's capacity will not diminish over the years, the amount of runoff generated by a given storm event can increase over the years. This potential increase could be due to a number of factors including: an increase in the amount of development and impervious surfaces within the tributary area, and; the addition of smaller upstream tributary drains that deliver runoff more quickly to the collecting drain. The potential for such increases should always be considered in selecting the appropriate structural BMP for a particular site.

Storms are commonly referred to by their "frequency." For example, a 1-year storm, having a long-term probability of happening at least once a year, is a very common occurrence. On the other hand, a 50-year storm event is a much rarer occurrence, with a long-term probability of occurring only once in 50 years. The actual rate of runoff from storms of a given size or frequency depends on a number of factors, including the intensity and duration of the rainfall, the size of the tributary area, the topography, the soil types within the tributary drainage area, and the overall connected imperviousness of the tributary area.

LAKE MANAGEMENT IMPLEMENTATION ALTERNATIVES

Lake management activities may include projects and devices that are designed to reduce and manage toxic pollutant loading in the lake itself. This may include projects such as hydraulic dredging to remove polluted sediments. Described below are various lake management alternatives that may be implemented by responsible parties as part of TMDL compliance.

SEDIMENT CAPPING

The objective of sediment capping is to cover contaminated sediments by a layer of clean sediment, clay, gravel, or other material. The cap reduces the mobility of the pollutants and places a physical barrier between the water column and the contaminated sediment. Capping can be an effective remediation action; however it is most effective in large deep waterbodies under certain conditions. For example, the bottom sediments of the waterbody must be able to support the cap and the hydrologic conditions of the waterbody must not disturb the cap site. This option would require long term monitoring and maintenance to ensure that the contaminated sediments are not moving and that the cap is still in place. A feasibility study considering the conditions of Machado Lake would be necessary before this option could be implemented.

DREDGING/HYDRAULIC DREDGING

Dredging is the removal of accumulated sediments from the lake bottom. In the case of Machado Lake, the objective would be to remove the sediments that are contaminated with pesticides and PCBs. Therefore, it would be necessary to dredge to a depth that would ensure the removal of all contaminated sediments. A method of sediment removal from lakes is hydraulic dredging. A hydraulic dredge floats on the water and is approximately the size of boat. It has a flexible pipe that siphons a mix of water and sediment from the bottom of the lake. The flexible pipe is attached to a stationary pipe that extends to an off site location. The sediment that is removed from the lake bottom

is pumped to a settling pond to dry prior to disposal. Hydraulic dredging does not require draining the lake or damage to the shoreline of the lake; however, it can cause damage to aquatic life, create short term turbid conditions, low dissolved oxygen, and mobilize pollutants. Hydraulic dredging does require careful planning and mitigation for non-target disturbances.

MONITORED NATURAL ATTENUATION OF CONTAMINANTS

Natural attenuation encompasses the physical, chemical, and biological processes that the sediments may undergo, which over time will attenuate (i.e. reduce concentration and bioavailability) the impacts of contamination. These are natural processes that will occur without other remediation actions. Monitoring would be required, as part of this remediation strategy, to demonstrate that contaminants are in fact attenuating and that human health and the environment are protected. A disadvantage of choosing natural attenuation as a remediation strategy is that it generally requires long periods of time to be effective given the long half lives of the pollutants of concern.

STORMWATER IMPLEMENTATION ALTERNATIVES

Structural stormwater BMPs may include the installation of stormwater treatment devices designed to reduce pollutants loadings, such as infiltration areas and sand or organic filters at critical points in the stormwater conveyance system. Sources of stormwater pollutants are diffuse and often require coordinated cooperation to reduce and control. Structural BMPs that may be implemented by responsible parties as part of TMDL compliance are listed below.

DIVERSION AND TREATMENT

Diversion and treatment programs would include the installation of facilities to divert stormwater or provide capture and storage of dry and or wet weather runoff with diversion of the stored runoff to location for treatment. Once the water was treated it could be routed back to the lake. Treatment options to reduce pollutants could include sand or media filters. A typical sand/organic filter system contains two or more chambers. The first is the sedimentation chamber for removing floatables and heavy sediments. The second is the filtration chamber, which removes additional pollutants by filtering the runoff through a sand bed. This type of treatment system provides high removal efficiency for sediment (CASQA, 2003).

INFILTRATION STORMWATER BMPs

VEGETATED SWALES

Vegetated swales are constructed drainageways used to convey stormwater runoff. Vegetation in swales 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. Swales planted with native vegetation offer higher resistance to flow and provide a better environment for filtering and trapping pollutants from stormwater. Vegetated swales generally have a trapezoidal or parabolic shape with relatively flat side slopes. Individual vegetated swales generally treat small drainage areas (five acres or less). A conservative estimate would say that a properly designed vegetated swale may achieve a 25 to 50 percent reduction in particulate pollutants, including sediment.

FILTER STRIPS

Filter strips are densely vegetated, uniformly graded areas that treat sheet flow from adjacent impervious surfaces. They reduce runoff velocities, which traps sediment and other pollutants as they settle out. The reduced velocities also result in some infiltration. Filter strips are commonly planted with turf grass, but they may also employ native vegetation. Trees and shrubs may also be used to create visual screening and physical barriers. Filter strips are frequently used as a pretreatment system for stormwater that will be treated with other BMPs. Filter strips must be designed depending on the site.

BIORETENTION

Bioretention uses a combination of soils and woody and herbaceous plants to remove pollutants from stormwater runoff. Runoff is conveyed to the treatment area, which consists of a grass buffer strip, sand bed, ponding area, organic layer or mulch layer, planting soil, and plants. The sand bed slows the runoff's velocity and distributes it evenly along the length of the ponding area. The ponding area has a surface organic layer and/or ground cover and the underlying planting soil. The ponding area is graded, and the center is depressed. Water is ponded to a depth of approximately 6 inches, and either infiltrates the ground, or is evapotranspired. Bioretention removes stormwater pollutants through both physical and biological processes. Common particulates removed from stormwater include particulate organic matter, phosphorus, and suspended solids.

INFILTRATION BASIN

An infiltration basin is an impoundment that captures stormwater and allows it to infiltrate into the ground over a period of days. The basin temporarily stores runoff for a specific design frequency storm. The bottom of the basin is vegetated, which is very important, as deep rooted plants increase the infiltration capacity of the basin. The roots create conduits for the water to infiltrate. The soil needs to be permeable enough to allow the water to infiltrate, but not so permeable that the water infiltrates too quickly and does not have ample time to be treated. The applicability of an infiltration basin depends on soil type, slope, depth to the water table, depth to the bedrock or impermeable layer, contributing watershed area, land use, and proximity to wells and surface waters. Infiltration basins generally require pretreatment of stormwater to remove large particulates and suspended solids before entering the basin.

NON-STRUCTURAL BMPs

Non-structural BMPs include prevention practices designed to improve water quality by reducing pollutant sources. Non-structural BMPs provide for the development of pollutant control programs that include, but are not limited to prevention, education, and regulation. Education and outreach to residents may minimize the potential for contamination of stormwater runoff; residents and businesses can be encouraged to pick up litter, minimize runoff from residential and commercial facilities, and control excessive irrigation. The public is often unaware of the fact that excess water discharged on streets and lawns ends up in receiving waters or the contamination caused by the polluted runoff.

Local agencies can provide educational materials to the public via television, radio, and print media, distribute brochures, flyers, and community newsletters, create information

hotlines to outreach to educators and schools, develop community events, and support of volunteer monitoring and cleanup programs. Stormdrain 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).

Non-structural BMPs focus on education and outreach and do not involve a change to the physical environment, either directly or indirectly; thus, they would not result in any adverse environmental impacts to any of the impact categories on the Environmental Checklist.

SETTINGS, IMPACTS, AND MITIGATION

INTRODUCTION

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

APPROACH TO ENVIRONMENTAL SETTING AND IMPACT ANALYSIS

Any potential environmental impacts associated with the Machado Lake Pesticides and PCBs TMDL depend upon the specific compliance projects selected by the responsible parties, most of whom are public agencies subject to their own CEQA obligations. (See Pub. Res. Code § 21159.2.) This CEQA substitute document identifies broad mitigation approaches that could be considered at the program level. Consistent with PRC§21159, the substitute 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 Machado Lake and surrounding area as shown in Figure 3. This area is the geographic area for assessing impacts of the different implementation alternatives, because the discharge of pollutants generated in this area to the lake 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 evaluated 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 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).

PROGRAM LEVEL VERSUS PROJECT-LEVEL ANALYSIS

As previously discussed, the Regional Board is the lead agency for the TMDL program, while the responsible parties 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 parties 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 TMDL compliance, PRC §21159 places the responsibility of project-level analysis on the agencies that will implement the Regional Board's TMDL.

ENVIRONMENTAL SETTING

Machado Lake is located in the Ken Malloy Harbor Regional Park (KMHRP), which is a 231 acre Los Angeles City Park serving the Wilmington and Harbor City areas (Figure 1). The Park is located west of the Harbor freeway (110) and east of Vermont Street between the Conoco Phillips Refinery on the south and the Pacific Coast Highway on the North. Machado Lake is one of the last lake and wetland systems in Los Angeles; the area is approximately 103.5 acres in total size. The upper portion, which includes the open water area, is approximately 40 acres and the lower wetland portion is about 63.5 acres. This TMDL will address the 40 acre open water lake. The lake was originally developed as part of Harbor Regional Park in 1971 and intended for boating and fishing. Over the years water quality generally declined; boating was stopped and signs were posted warning of the risk of eating fish from the lake.

Machado Lake is located within the Machado Lake Sub-watershed which is approximately 20 square miles and positioned within the larger 110 square mile Dominguez Channel Watershed. The watershed is located in southern Los Angeles County and includes all or a portion of the following communities Harbor City, Los Angeles, Torrance, Carson, Lomita, Rolling Hills, Rolling Hills Estates, and Palos Verdes Estates. (Figure 2)

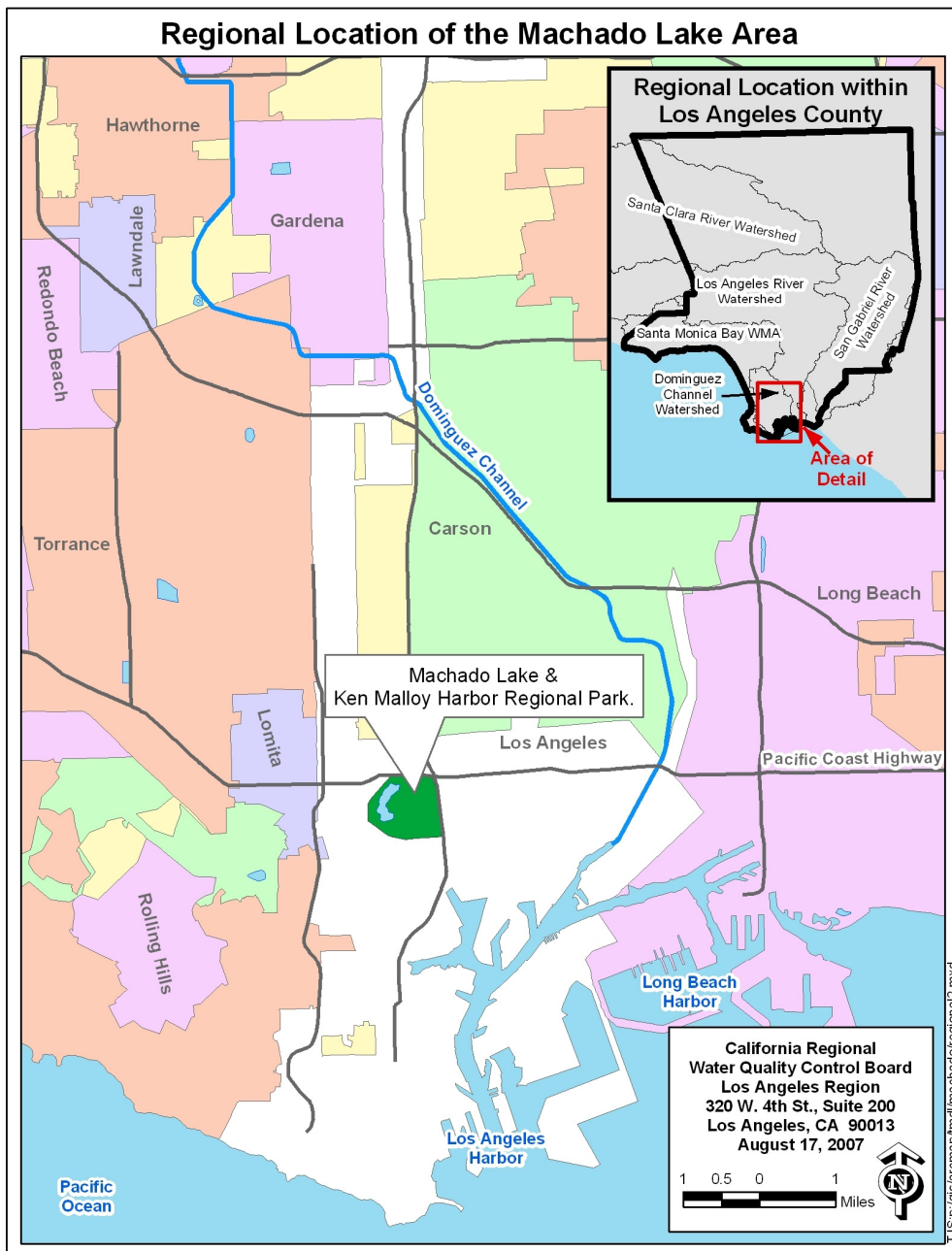


Figure 1. Regional Location Map of Machado Lake Area

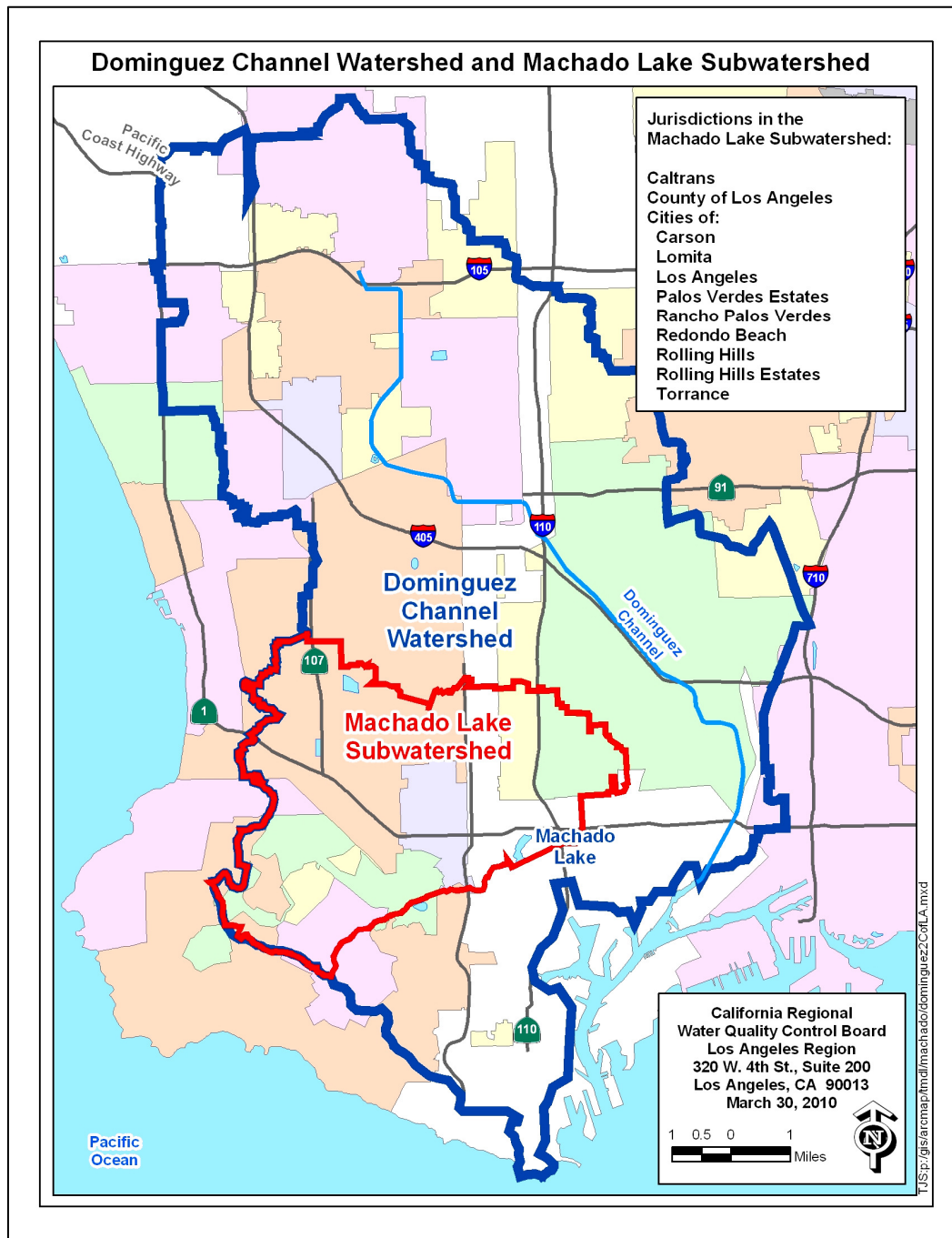


Figure 2 Dominguez Channel Watershed and Machado Lake Sub-watershed

The dominant land use in the Machado Lake Watershed is high density single family residential accounting for approximately 45% of the land use. Industrial, vacant, retail/commercial, multi-family residential, transportation, and educational institutions each account for 5-7 % of the land use while “all other” accounts for the remaining 23 %. Machado Lake is a receiving body of urban and stormwater runoff from a network of stormdrains throughout the watershed. There are three discharge points into Machado Lake from the following stormdrain channels (Figure 3):

- Wilmington Drain
- Project No. 77
- Harbor City Relief Drain.

Machado Lake is part of one of the last freshwater wetland habitats in Los Angeles area. Although, the lake is generally located in a highly urbanized area it is surround by critical habitat and designated a significant ecological area by Los Angeles County (Basin Plan, p 1-17). Immediately bordering the lake are emergent wetland vegetation types such as bulrushes, cattails, and water primrose. On the north end of the lake, near the Wilmington Drain inlet, there is a well established willow riparian forest and an area where cottonwoods and sycamore have been planted. The willow riparian habitat continues along the east side of the lake creating a buffer between the lake and the Harbor Regional Golf Course. South of the lake, below the dam, resides the 63 acre seasonal wetland; this area contains several sensitive habitats and vegetation types. The west side of the lake is landscaped and considered the active recreation area for activities such as picnicking. There have been several recent sightings of threatened and endangered bird species residing and foraging in the area.

Machado Lake is a shallow polymictic lake; the depth is generally 1.2 – 2.0 meters (4-6 feet) the average depth is approximately 1.0 meters. The northwest portion of the lake is slightly shallower (approximately 0.6- 0.9 meter deep). There is a well established macrophyte community along the edge of the lake. The water normally has a brown – yellowish tint through out the year although, the lake can be quite green and subject to algal blooms in the summer months. The fish population includes goldfish, carp, and largemouth bass.

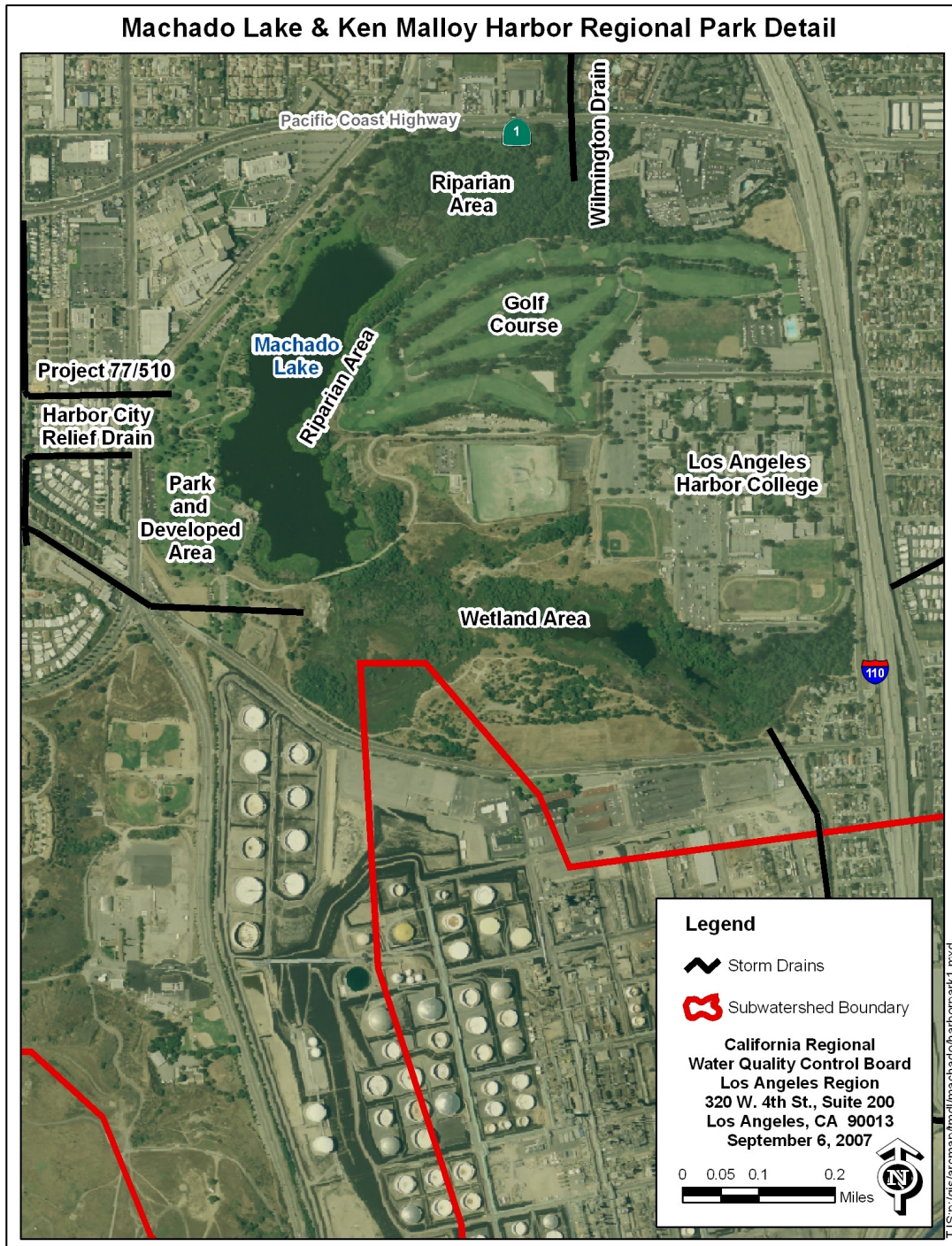


Figure 3 Aerial view Ken Malloy Harbor Regional Park and Machado Lake

BENEFICIAL USES OF MACHADO LAKE

The Basin Plan for the Los Angeles Regional Board (LARWQCB, 1994) defines seven beneficial uses for Machado Lake (Table 3). These uses are recognized as existing (E), potential (P) or intermittent (I) uses. Pesticide and PCBs loading to Machado Lake results in impairments of beneficial uses associated with recreation (REC 1 and REC 2) and aquatic life (WARM, WILD, RARE, and WET).

Table 3 Designated Beneficial Uses of Machado Lake

Reach	MUN	REC 1	REC 2	WARM	WILD	RARE	WET
Machado Lake	P*	E	E	E	E	E	E

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 for implementing the TMDL. The municipality or public agency decisions in designing and siting structural devices and lake management projects may depend on the catchment land use. Site specific BMPs will likely be employed throughout the TMDL area to reduce pollutant loading to Machado Lake, and specific BMPs will be best suited to particular land uses.

CEQA CHECKLIST AND DETERMINATION

	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

	ENVIRONMENTAL CHECKLIST	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant	No Impact
5.	Animal Life. Will the proposal 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)?	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			

	ENVIRONMENTAL CHECKLIST	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant	No Impact
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:				
	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. Stormwater drainage?	X			
	f. Solid waste and disposal?			X	
17.	Human Health. Will the proposal result in:				

	ENVIRONMENTAL CHECKLIST	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant	No Impact
	a. Creation of any health hazard or potential health hazard (excluding mental health)?	X			
	b. Exposure of people to potential health hazards?	X			
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				
	a. Does the project have the potential to degrade the quality of the environment, substantially reduce the habitat of a fish or wildlife species, cause a fish or wildlife population to drop below self-sustaining levels, threaten to eliminate a plant or animal community, 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			

	ENVIRONMENTAL CHECKLIST	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant	No Impact
	b. Does the project have impacts that are individually limited, but cumulatively considerable? ("Cumulatively considerable" means that the incremental effects of a project are considerable when viewed in connection with the effects of past projects, the effects of other current projects, and the effects of probable future projects)?	X			
	c. Does the project have environmental effects which will cause substantial adverse effects on human beings, either directly or indirectly?	X			

ENVIRONMENTAL IMPACT ANALYSIS

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

Answer: Less than significant

LAKE MANAGEMENT IMPLEMENTATION ALTERNATIVES

Sediment Capping

Sediment capping would not be of the depth or scale to result in unstable conditions or changes in the geological substructures.

Hydraulic Dredging

Hydraulic dredging involves the removal of the top layers of sediment, primarily unconsolidated silt, and would not be of the depth or scale to result in unstable conditions or changes in the geological substructures to result in unstable earth conditions.

Monitored Natural Attenuation of Contaminants

Monitored natural attenuation of contaminants is not anticipated to result in adverse impacts to geologic substructures or result in unstable earth conditions.

STORMWATER IMPLEMENTATION ALTERNATIVES

Infiltration Stormwater BMPs

Infiltration devices like biofiltration, vegetated swales, filter strips, bioretention, and infiltration basins would not be of the size or scale to result in unstable earth conditions or in changes in 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 from increased groundwater flow. Geological surveys can be conducted prior to installation to aid in siting the devices.

Diversion and Treatment

Construction of diversion and treatment facilities, like sand and media filters would not be of the size or scale to result in unstable earth conditions or in changes in geologic substructures. Construction of diversion and treatment facilities requires relatively shallow earthwork. Sand filters require a minimum of 18 inches of sand overlaying 6 inches over 2 inches of gravel (CASQA, 2003).

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

Answer: Potentially Significant

LAKE MANAGEMENT IMPLEMENTATION ALTERNATIVES

Sediment Capping

Sediment capping would not be of the depth or scale to result in disruptions, compaction or overcoming of the soil. Contaminated layers of sediment and soil in the lake bottom will be covered; however, this displacement is considered a positive impact.

Dredging/Hydraulic Dredging

Dredging/Hydraulic dredging involves the removal of the top layers of sediment, primarily unconsolidated silt, and would not be of the depth or scale to result in disruptions, compaction or overcoming of the soil. Contaminated layers of sediment and soil in the lake bottom will be removed and displaced; however, this displacement is considered a positive impact. Dewatering of dredged material could result in disruptions, compaction or overcoming of the soil. Materials should be disposed of away from areas with loose or compressible soils or areas with slopes that could destabilize from dewatered material.

Monitored Natural Attenuation of Contaminants

Monitored natural attenuation of contaminants is not expected to result in disruptions, displacements, compaction, or overcoming of the soil.

STORMWATER IMPLEMENTATION ALTERNATIVES

Infiltration StormWater BMPs

The use of infiltration stormwater BMPs to treat a portion of stormwater could potentially result in disruptions of the soil, increased risk of liquefaction, or slope instability by increasing the rate at which water is discharged to the ground. This impact could be mitigated to less than significant levels if devices are properly designed and sited in areas where the risk of soil disruption is minimal. Suitable sites would be determined by geotechnical studies, conducted prior to construction of infiltration stormwater BMPs, to define site-specific surface and subsurface conditions, infiltration rates, and soil and groundwater characteristics.

Site specific studies should also evaluate on-site and off-site structural stability due to extended subgrade saturation and/or head loading of the permeable layer, including potential impacts to down gradient properties, especially on hills with known side-hill seeps. A minimum of 10 feet of groundwater separation is required (Caltrans, 2002). Investigations would be conducted to demonstrate the absence of potentially liquefiable soils or to prove that such soils are not and will not become saturated. If the project were determined to have the potential to cause an increased risk of liquefaction, monitoring and contingency measures should be required to reduce impacts to a less-than-significant level.

Such measures could include the installation of new monitoring wells to detect any substantial increase in groundwater levels and the re-routing of stormwater to other facilities as applicable if a substantial increase was detected. Infiltration devices should not be sited less than 10 feet down gradient or 100 feet up gradient from structural foundations when infiltrating to near surface groundwater (Caltrans, 2002). Potentially suitable methods for mitigation of lateral spread hazards to nearby structures may include edge containment structures, removal or treatment of liquefiable soils, ground improvements, reinforced foundations, or design of facilities to withstand predicted ground softening and/or displacements to an acceptable level of risk (CGS, 2002).

Finally, runoff from areas with inadequate depth to groundwater or unsuitable soils for infiltration should be treated with alternative structural treatment devices such as sand filters (CASQA, 2003) or nonstructural BMPs.

Diversion and Treatment

Disruption of the soil may occur during construction activities associated with installation of media filters or diversion and treatment facilities. Much of the upstream areas of the Machado Lake subwatershed is located in highly urbanized of single family residential housing and industrial, commercial, educational, and transportation land uses (see section 1.3 of the staff report). This high amount of urbanization has already led to soil compaction and hardscaping. However, to the extent that any soil is disturbed during construction, standard construction techniques, including but not limited to, shoring, piling and soil stabilization can mitigate these potential short-term impacts.

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

LAKE MANAGEMENT IMPLEMENTATION ALTERNATIVES

Sediment Capping

Sediment capping would not be of the depth or scale to result in change in topography or ground surface relief features.

Dredging/Hydraulic Dredging

Dredging/hydraulic dredging requires temporary storage of the dredged material for drying prior to disposal. The area where the dredged material is contained and stored for drying may be impacted by a temporary change in topography or surface relief features. This impact would be temporary and short-term. To mitigate potential impacts, the dredged material should be properly disposed of in a timely manner.

Monitored Natural Attenuation of Contaminants

Monitored natural attenuation of contaminants is not expected to result in change in topography or ground surface relief features.

STORMWATER IMPLEMENTATION ALTERNATIVES

Infiltration Stormwater BMPs and Diversion and Treatment

No impact is expected because infiltration stormwater BMPs and diversion and treatment facilities would not be of the size or scale to result in change in 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 feature?

Answer: Potentially Significant

LAKE MANAGEMENT IMPLEMENTATION ALTERNATIVES

Sediment Capping

The storage of sediment capping material prior to use may result in physical landscape changes that could cause the destruction, covering, or modification of any unique geologic or physical feature. This impact is temporary and exists only for the duration of the capping operation. Temporary staging of the capping material may help mitigate potential impacts.

Dredging/Hydraulic Dredging

The storage of dredged material may result in physical landscape changes that could cause the destruction, covering, or modification of any unique geologic or physical feature. This impact is temporary and exists only for the duration of the dredging

operation. Temporary staging of the dredged material may help mitigate potential impacts of dredging.

Monitored Natural Attenuation of Contaminants

Monitored natural attenuation of contaminants is not expected to result in the destruction, covering or modification of any unique geologic or physical feature.

STORMWATER IMPLEMENTATION ALTERNATIVES

Infiltration Stormwater BMPs and Diversion and Treatment

Implementation stormwater BMPs are not of the size or scale to alter unique geologic or physical features. Upstream portions of the Machado Lake subwatershed are highly urbanized with modification and hardscaping.

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

Answer: Potentially Significant

LAKE MANAGEMENT IMPLEMENTATION ALTERNATIVES

Sediment Capping

The storage of sediment capping material prior to use may result in increase in wind or water erosion of soils. This impact is temporary and exists only for the duration of the capping operation. Temporary staging of the capping material may help mitigate potential impacts.

Dredging/Hydraulic Dredging

Hydraulic dredging is not expected to result in increased wind or water erosion of soil. The containment and storage of dredged materials may be subject to erosion processes during drying. This erosion may occur as a short-term impact and can be mitigated by measures to minimize offsite sediment movement, such as covering dredged materials during windy or rainy conditions. Once the dredged material is dry and disposed of, potential erosion processes will cease.

Monitored Natural Attenuation of Contaminants

Monitored natural attenuation of contaminants is not expected to result in any increase in wind or water erosion of soils, either on or off the site.

STORMWATER IMPLEMENTATION ALTERNATIVES

Infiltration Stormwater BMPs

The use of infiltration stormwater BMPs to treat runoff could result in erosion of the surface and underlying soil by increasing the rate at which water is discharged to the ground. This potential impact could be mitigated to less than significant levels if structural management practices are designed in compliance with existing regulations, standard specifications and building codes and sited in areas where risks to soil erosion are minimal. Proper siting, aided by geotechnical studies to define site-specific soil conditions, will help to determine identify site capable of supporting excess infiltration of stormwater as well site devices, such that they do result in an increase of wind erosion of soils. Soil types are restricted to HSG Class A, B, or C soils and soils with less than 30% clay and less than 40% combined silt and clay (Caltrans, 2002). Use of vegetated or other buffer strips can help reduce flow velocities to further mitigate water erosion of soils and improve infiltration and treatment efficiency.

Construction of infiltration stormwater BMPs could result in erosion of soils onsite. Cover plants and buffer strips may be planted prior to the completion of infiltration stormwater BMPs to reduce run-off and promote infiltration. Construction plans should also minimize clearing and grading activities and phase construction to limit soil exposure, stabilize exposed soils immediately, protect steep slopes and cuts, and install sediment controls (USEPA, 2005). Furthermore, 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. Both permits are already designed to minimize or eliminate erosion impacts on receiving water.

Diversion and Treatment

Sand and media filters consist of coarser grade sediment and is less likely to be susceptible to erosion than finer grained material or uncovered soils. Use of vegetated or other buffer strips can help reduce flow velocities to further mitigate water erosion of soils and improve treatment efficiency as well as direct the flow across the filter uniformly.

Construction of sand and media filters and diversion and treatment facilities could result in erosion of soils onsite. Cover plants and buffer strips may be planted prior to the completion of infiltration stormwater BMPs to reduce run-off and promote infiltration. Construction plans should also minimize clearing and grading activities and phase construction to limit soil exposure, stabilize exposed soils immediately, protect steep slopes and cuts, and install sediment controls (USEPA, 2005). Furthermore, 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. Both permits are already designed to minimize or eliminate erosion impacts on receiving water.

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 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

LAKE MANAGEMENT IMPLEMENTATION ALTERNATIVES

Sediment Capping

Sediment capping will not increase lake sedimentation. There is a change in the lake bed under this implementation alternative, but it is a positive change and improves water quality in the lake. There may be increased clean sediment suspension in the lake during capping. This impact is temporary and exists only for the duration of the capping operation and this impact is generally not significant.

Dredging/Hydraulic Dredging

Dredging/hydraulic dredging will modify the lake bed by removing materials that have been deposited in the lake from years of sedimentation processes. Hydraulic dredging will not increase lake sedimentation. There is a change in the lake bed under this implementation alternative, but it is a positive change and improves the water quality in lake. There may be increased sediment resuspension in the lake; however this impact is temporary and generally not significant.

Monitored Natural Attenuation of Contaminants

Monitored natural attenuation of contaminants is not expected to result in changes in or erosion of beach sands, or changes in siltation, deposition or erosion which may modify the bed of the lake.

STORMWATER IMPLEMENTATION ALTERNATIVES

Infiltration Stormwater BMPs and Diversion and Treatment

Infiltration stormwater BMPs and diversion and treatment facilities may impact siltation or deposition of sand. Infiltration stormwater BMPs and diversion and treatment facilities are designed to treat, retain, filter, and or infiltration run-off. Minimal deposition currently occurs within the concrete lined drains. Reduction in siltation in the lake may be considered a positive impact as fine sediments may reduce the overall habitat of the lake and decrease water levels.

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. 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: No Impact

LAKE MANAGEMENT IMPLEMENTATION ALTERNATIVES

It is not anticipated that reasonably foreseeable methods of lake management would be of the size or scale to result in an exposure of people or property to geological hazards such as earthquakes, landslides, mudslides, ground failure, or similar hazards.

STORMWATER IMPLEMENTATION ALTERNATIVES

Infiltration Stormwater BMPs and Diversion and Treatment

Proper siting conducted with geotechnical studies prepared at the project level would avoid the risk of damage from seismic-related hazards. It is not reasonably foreseeable that responsible agencies would choose to comply with this TMDL through structural means in areas where doing so would result in exposure of people or property to geologic hazards. For example, the Caltrans Stormwater Quality Handbook restricts usage of infiltration devices in seismic impact zones, unstable areas, or highly expansive/collapsible soils (Caltrans, 2002).

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

Answer: Potentially Significant

LAKE MANAGEMENT IMPLEMENTATION ALTERNATIVES

Sediment Capping

Sediment capping will require the use of heavy equipment; for example, capping equipment and trucks to transport capping material. The adverse impacts to ambient air quality may result from short-term operation of the capping equipment and an increase in truck traffic for capping 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 capping 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.

Dredging/Hydraulic Dredging

Dredging/hydraulic dredging will require the use of heavy equipment; for example, the dredge itself and trucks to transport dredged material. The adverse impacts to ambient air quality may result from short-term operation of the dredge and increased in truck traffic for dredged 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.

Monitored Natural Attenuation of Contaminants

Monitored natural attenuation of contaminants is not expected to result in substantial air emissions or deterioration of ambient air quality.

STORMWATER IMPLEMENTATION ALTERNATIVES

Infiltration Stormwater BMPs

Short term and increases in traffic during the construction and installation of infiltration stormwater devices and long-term intermittent increases in traffic caused by ongoing maintenance of these devices (e.g., delivery of materials and maintenance activities) are potential sources of increased air pollutant emissions. Construction activities could also potentially cause re-suspension of dry sediments. However, emission levels for potentially emitted pollutants are expected to be below the SCAQMD Air Quality Significance thresholds considering the scale of the TMDL program. Detailed analysis can only be done at project level. Any potential air emissions resulting from construction or maintenance activities would be subject to regulation by SCAQMD or the California Air Resources Board.

Mitigation measures for increased air emissions due to increased vehicle trips or increased use of construction equipment include: (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, (4) design of treatment devices to minimize the frequency of maintenance trips, and (5) proper maintenance of construction vehicles. Mitigation measures for re-suspension of sediments caused by construction activities include the use of vapor barriers and moisture controls to reduce transfer of small sediments to air. Exposed areas can be revegetated or covered to reduce fugitive dust.

Diversion and Treatment

Short term increases in traffic and emissions during the construction of diversion and treatment facilities and long term emissions caused by operation and maintenance of these facilities are potential sources of increased air pollutant emissions.

Routing water to and from treatment facilities could require pumping stations along pipelines, which could generate air emissions through operation and maintenance of pump stations and offsite electricity generation. Pump station operational intensity is dependant on flow. High flow storm events may exasperate the usage of pumps and adversely increase air pollution. Any potential air emissions would be subject to regulation by SCAQMD or the California Air Resources Board.

Mitigation measures for increased air emissions due to increased vehicle trips or increased use of construction equipment include: 1) use of construction 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 construction vehicles. Mitigation measures for re-suspension of sediments caused by construction activities include the use of vapor barriers and moisture controls to reduce transfer of small sediments to air. Exposed areas can be revegetated or covered to reduce fugitive dust.

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

LAKE MANAGEMENT IMPLEMENTATION ALTERNATIVES

Sediment Capping

Sediment capping will require the use of heavy equipment; for example, capping equipment and trucks to transport capping material. Objectionable odors may be created due to exhaust from the operation of equipment and vehicles, but these impacts are temporary and localized to the area of operation of heavy equipment. BMPs such as those recommended by the SCAQMD can be implemented to mitigate air quality impacts.

Dredging/Hydraulic Dredging

Dredging/hydraulic dredging may result in objectionable odors due to the anaerobic nature of sediments. Odors could be released during the dredging process. Dewatering of dredged material could cause odor issues. However, this odor would be temporary and localized to personnel operating the dredge and would quickly dissipate and not be a significant impact. 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 area of operation of heavy equipment. BMPs such as those recommended by the SCAQMD can be implemented to mitigate air quality impacts

Monitored Natural Attenuation of Contaminants

Monitored natural attenuation of contaminants is not expected to result in creation of objectionable odors.

STORMWATER IMPLEMENTATION ALTERNATIVES

Infiltration Stormwater BMPs and Diversion and Treatment

Infiltration stormwater BMPs and diversion and treatment facilities 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 infiltration basins, sand and media filters, and bioretention devices 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 and maximize pollutant uptake (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.

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

LAKE MANAGEMENT IMPLEMENTATION ALTERNATIVES

It is not anticipated that reasonably foreseeable methods of lake management projects or structural BMPs will result in an impact to air in the alteration of air movement, moisture or temperature, or any change in climate, either locally or regionally.

STORMWATER IMPLEMENTATION ALTERNATIVES

Infiltration Stormwater BMPs and Diversion and Treatment

It is not reasonably foreseeable that infiltration stormwater BMPs and diversion and treatment facilities would not 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 freshwaters.

Answer: Potentially Significant

LAKE MANAGEMENT IMPLEMENTATION ALTERNATIVES

Sediment Capping

During sediment capping water movement within the lake may be impacted, however this impact is temporary and only exists during the capping process. Sediment capping is not expected to permanently change currents or the direction of water movements in the lake, after the capping has been completed.

Dredging/Hydraulic Dredging

Dredging/hydraulic dredging involves the usage of a floatable dredge similar to the size of a boat for the removal of the top layers of sediment. During dredging, water movement within the lake may be impacted, however this impact is temporary and only exists during the hours in which the dredge is operating. Hydraulic dredging at Machado Lake is not expected to permanently change currents or the direction of water movements in the lake, after the dredging has been completed.

Monitored Natural Attenuation of Contaminants

Monitored natural attenuation of contaminants is not expected to result in changes in currents, or the course of direction or water movements in either marine or freshwaters.

STORMWATER IMPLEMENTATION ALTERNATIVES

Infiltration Stormwater BMPs and Diversion and Treatment

Sand and media filters and biofiltration may impede or slow overland flow to stormdrains if 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. A change in freshwater movement may occur if compliance with the TMDL is achieved in part through infiltration or diversion of stormwater from open channels to wastewater or urban runoff treatment facilities. Reductions in dry and wet-weather flow 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 United States Fish and Wild Life Service (USFWS). Diverted run-off can be discharged back into the lake following treatment to maintain minimum flow.

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 adsorption rates, drainage patterns or the rate and amount of surface runoff.

Answer: Potentially Significant

LAKE MANAGEMENT IMPLEMENTATION ALTERNATIVES

The lake management alternatives are not expected to change the adsorption rate, drainage pattern, or rate and amount of surface runoff, except potentially the hydraulic dredging alternative. Hydraulic dredging involves the removal of lake bed sediment and has minimal affect on surface sediments. To the extent that temporary staging of dredged materials, use of construction equipment, and maintenance or other vehicles may cause significant compaction of soils such that they significantly impact absorption rates, construction BMPs and mitigation measures are available to mitigate the potential impact.

Also see 1. Earth a. and 1. Earth b.

STORMWATER IMPLEMENTATION ALTERNATIVES

Infiltration Stormwater BMPs

Changes in drainage patterns and the rate and amount of surface water runoff will occur if a portion of stormwater is diverted, captured, treated, and infiltrated to achieve compliance with the TMDL. Infiltration stormwater BMPs will also have a positive impact on the rate of water absorption. Such devices address the effects of development and increased impervious surfaces in the watershed (USEPA, 2002). Potential negative 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 CDFG and the USFWS.

Diversion and Treatment

Sand and media filters are flow-through devices that may cause a change in the rate of surface water runoff. These units may impede or slow overland flow to the stormdrain system. Any device installed on-line, especially an older, under-capacity stormdrain 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 sand and media filters with flow splitters or overflow/bypass structures and by performing regular maintenance of these devices and if necessary enlargement of the stormdrain upstream of the device (CASQA, 2003).

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: Potentially Significant

LAKE MANAGEMENT IMPLEMENTATION ALTERNATIVES

The implementation of lake management alternatives is not expected to change the course of flow of flood waters. These projects will not prevent the lake from overtopping the dam and providing water to the lower wetlands, which is the current flood regime at Machado Lake

STORMWATER IMPLEMENTATION ALTERNATIVES

Infiltration Stormwater BMPs

The use of infiltration stormwater BMPs could result in the diversion and infiltration of a portion of stormwater, altering its current course of flow into the lake. To mitigate any potential impacts, channels leading to infiltration devices should be designed to minimize erosion. Infiltration basins should be designed to treat only small storms, (i.e., only for water quality) and should be designed off-line. Potential impacts to the course of flow of flood waters may be considered a positive impact, as infiltration stormwater BMPs are likely to reduce the flow rate need for additional stormwater conveyance infrastructure.

Diversion and Treatment

Diversion and treatment facilities of a portion of stormwater would alter its current course of flow into the river. Any device into a stormdrain, especially an older, under-capacity drain could have a negative effect on the drain's ability to convey waters, including flood waters. This negative impact can be mitigated through proper design and maintenance of these devices. The size of the contributing drainage area should not exceed standard specifications (e.g., surface sand filters should treat no more than 25 acres and underground sand filters should treat no more than 2 acres) (CASQA, 2003).

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 d. Will the proposal result in change in the amount of surface water in any waterbody?

Answer: Potentially Significant

LAKE MANAGEMENT IMPLEMENTATION ALTERNATIVES

Sediment Capping

Sediment capping may reduce lake depth and would result in a change in the amount of surface water in the lake. This impact could be mitigated by conducting studies to determine the lake level needed to support flood control and the aquatic, wildlife, and recreational uses of the lake and to design any potential capping project accordingly.

Dredging/Hydraulic Dredging

Dredging/hydraulic dredging could remove water from the lake system. The goal of dredging/hydraulic dredging is to remove years of accumulated sediment and restore the lake depth to a level that will improve water quality. The increase in lake depth would provide greater storage area for water in the lake. This would be considered to be a positive impact and would help to improve water quality.

Monitored Natural Attenuation of Contaminants

Monitored natural attenuation of contaminants is not expected to result in change in the amount of surface water in any waterbody.

STORMWATER IMPLEMENTATION ALTERNATIVES

Infiltration Stormwater BMPs

A change in the amount of surface water may occur if compliance with the TMDL is achieved in part through infiltration stormwater BMPs or diversion and treatment of stormwater which would otherwise enter stormdrain system discharging into the lake. Machado Lake supports sensitive freshwater wetland habitat (see section 1.3 in the staff report). 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 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 CDFG and the USFWS.

Diversion and Treatment

Sand and media filters may impede or slow overland flow to stormdrains if not properly designed and maintained and could change the amount of surface water. Devices should be designed to allow adequate drainage of water and maintained to remove clogged material to mitigate this impact. Reductions in dry and wet-weather flow 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 CDFG and USFWS.

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 into surface waters, or any alteration of surface water quality, including but not limited to temperature, dissolved oxygen, or turbidity.

Answer: Potentially Significant

LAKE MANAGEMENT IMPLEMENTATION ALTERNATIVES

The TMDL will improve sediment and surface water quality with respect to PCBs and Pesticides.

Sediment Capping

Sediment capping does disturb the sediments and can cause increased turbidity during capping activities. However, this is a generally a localized effect. Sediment capping will not create permanent increased turbidity conditions and will improve lake water quality in the long term.

Dredging/Hydraulic Dredging

Dredging/hydraulic dredging will cause a potential positive impact to surface water quality by increasing the lake depth which will help to promote a healthy lake system. It is anticipated that temperature changes will continue to reflect seasonal changes and that dissolved oxygen in the lake will be reflective of lake mixing cycles. Hydraulic dredging does disturb the sediments and can cause increased turbidity during dredging activities; however, this impact is temporary and generally not significant. Dredging will not create permanent increased turbidity conditions.

After dredging, the sediments would be dewatered and it is possible that the water from dredged sediments could be discharged into surface waters. If so, the discharge should avoid any alteration of surface water quality.

Monitored Natural Attenuation of Contaminants

Monitored natural attenuation of contaminants is not expected to result in discharge into surface waters, or any alteration of surface water quality, including but not limited to temperature, dissolved oxygen, or turbidity. However, it would allow continued contamination of the lake..

STORMWATER IMPLEMENTATION ALTERNATIVES

Infiltration Stormwater BMPs and Diversion and Treatment

The use of infiltration stormwater BMPs and diversion and treatment facilities to treat dry-weather and stormwater runoff will result in a change in the quality of surface water. This will positively impact water quality and associated aquatic life and water supply beneficial uses of surface waters. Several BMPs have multiple pollutant treatment potential. Sand and media filters have been effective at remove metals as well as bacteria and other pollutants (WERF, 2005).

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 groundwater?

Answer: Less than significant

LAKE MANAGEMENT IMPLEMENTATION ALTERNATIVES

Machado Lake overlies the West Coast Groundwater Basin, the general flow of groundwater in this basin is south and west towards the Pacific Ocean. It is not anticipated that any of the lake management implementation alternatives will result in an alteration of the direction or rate of groundwater flow.

STORMWATER IMPLEMENTATION ALTERNATIVES

Infiltration Stormwater BMPs

A change in the rate of flow of ground waters may occur if compliance with the TMDL is achieved through significant infiltration of stormwater. When properly managed, increased groundwater recharge would be considered a positive impact by the proposal, as it would contribute to replenishing local water supplies and reducing reliance on imported water.

Diversion and Treatment

Diversion and treatment facilities are above ground devices to treat stormwater and will have no impact on the direction or rate of flow of ground waters. They would be installed in areas that are already developed and installation activities would occur at depths that

would not impact ground water. Diversion and treatment facilities are overflow devices that treat run-off through filtration and precipitation.

3 Water g. Will the proposal result in change in the quantity or quality of groundwater, either through direct additions or withdrawals or through interception of an aquifer by cuts or excavations.

Answer: Potentially Significant

LAKE MANAGEMENT IMPLEMENTATION ALTERNATIVES

The reasonably foreseeable lake management implementation methods act upon the surface water of Machado Lake and will not include direct additions or withdrawals of groundwater or interception of an aquifer by cuts or excavations.

STORMWATER IMPLEMENTATION ALTERNATIVES

Infiltration Stormwater BMPs

A change in the quantity of ground waters may occur if compliance with the TMDL is achieved through significant infiltration of stormwater. However, if infiltration stormwater BMPs are improperly designed, sited, and constructed, ground water quality could be adversely impacted. For instance, flow above designed capacity of biofiltration devices may lead to groundwater contamination from untreated stormwater. The potential for adverse impacts may be mitigated through proper design and siting of infiltration devices, pretreatment prior to infiltration, and groundwater monitoring.

Proper design and siting includes providing adequate groundwater separation with soils suitable for infiltration, and complying with any applicable groundwater permitting requirements. For example, in their BMP guidance manual, Caltrans recommends 10 feet separation to groundwater and a maximum infiltration rate of 2.5 inches per hour. They recommend against siting devices over contaminated groundwater plumes or in areas containing fractured bedrock within 3 feet of bottom (Caltrans, 2002). It is recommended that sand filters be used where soils or groundwater contamination are a concern (CASQA, 2003). However, where separation to groundwater is adequate, there is a low probability of groundwater contamination by infiltrated runoff because the soils attenuate pollutants and soil amendments can increase metals removal (CASQA, 2003).

Diversion and Treatment

Diversion and treatment facilities are above ground devices to treat stormwater and will have no impact on the quantity or quality of ground waters. They would be installed in areas that are already developed and at depths that would not impact ground water. 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 h. Will the proposal result in substantial reduction in the amount of water otherwise available for public water supplies.

Answer: Potentially Significant

LAKE MANAGEMENT IMPLEMENTATION ALTERNATIVES

It is not anticipated that reasonably foreseeable lake management implementation alternatives will result in a substantial reduction in the amount of water otherwise available for public water supplies. These implementation alternatives do not require the use of public water supplies.

STORMWATER IMPLEMENTATION ALTERNATIVES

Infiltration Stormwater BMPs and Diversion and Treatment

Implementation of the TMDL would result in an increase in the amount of water available for public water supplies if compliance with the TMDL is achieved through significant infiltration of stormwater or treatment and reuse of stormwater. Sand and media filters are flow through devices to treat stormwater and treated stormwater can be pumped back into the stormwater system. No impact on the amount of water otherwise available for public water supplies is anticipated through diversion and treatment 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)).

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

LAKE MANAGEMENT IMPLEMENTATION ALTERNATIVES

The lake management implementation alternatives are implemented directly in Machado Lake and not anticipated to require significant alteration to the existing storm water conveyance systems nor are the alternatives anticipated to result in exposure of people or property to water related hazards such as flooding or tidal waves.

STORMWATER IMPLEMENTATION ALTERNATIVES

Infiltration Stormwater BMPs

Implementation 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, 2002). Infiltration devices may also reduce flooding hazards by reducing the peak storm flows in the Machado Lake subwatershed by diverting and retaining water on-site.

Diversion and Treatment

Diversion and treatment facilities divert stormwater from stormwater conveyances for treatment prior to discharge into wastewater treatment facilities or stormwater system is a positive effect, as it will reduce the potential for flooding during storm events. Implementation may result in flooding hazards if sand and media filters are not properly designed, maintained, 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.

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

LAKE MANAGEMENT IMPLEMENTATION ALTERNATIVES

Sediment Capping

Sediment capping may have the potential to reduce aquatic plant species. Particularly in shallow areas, there may impacts to aquatic vegetation. Recolonization of capping areas is typically gradual, but provides the opportunity to improve the vegetative habitat to enhance the ecology of the lake.

Dredging/Hydraulic Dredging

Dredging/hydraulic dredging may have the potential to reduce aquatic plant species. Particularly in shallow areas, there may be impacts to aquatic vegetation. Hydraulic dredging in areas with dense vegetation beds can cause clogging of the dredge pipeline. It is often suggested that temporary plant control such as harvesting take place prior to hydraulic dredging activities. Recolonization of dredged areas is typically gradual, but provides the opportunity to improve the vegetative habitat to enhance the ecology of the lake. Hydraulic dredging does not disturb the shoreline and will not impact aquatic or terrestrial vegetation directly along the shore. Hydraulic dredging has overall fewer impacts to the lake when compared with traditional dredging methods.

Dredging may also impact the ability of rooted aquatic vegetation to colonize the main body of the lake. The amount of sediment removed (i.e. the new depth) and the associated light penetration will be critical to the ability of submerged plants to grow. However, some rooted plant re-growth is expected and is desirable for lake habitat and function. It is not expected that hydraulic dredging will be done to a depth that would prevent the re-establishment of desired and healthy aquatic plants.

Monitored Natural Attenuation of Contaminants

Monitored natural attenuation of contaminants is not expected to result in change in the diversity of species, or number of any species of plants.

STORMWATER IMPLEMENTATION ALTERNATIVES

Infiltration Stormwater BMPs and Diversion and Treatment

If infiltration stormwater BMPs or diversion and treatment facilities are used, impact to plant life in terms of diversity of species, number of species, or reduce the number of unique, rare or endangered species would most likely occur if facilities are located in critical habitat. Urban land uses tend to be landscaped and often with common, non-native species. The Machado Lake subwatershed is located in primarily urbanized landscape. However, a critical freshwater wetland habitat is also located in the subwatershed (see section 1.3 of the staff report). Infiltration stormwater BMPs or diversion and treatment facilities may be sited away from this critical habitat. It is not reasonable or foreseeable for responsible jurisdictions to construct and site devices in such a manner as to adversely impact species diversity.

Proper timing may need to be exercised to avoid construction during critical periods of plant and animal development. Consultation with agencies including the CDFG and USFWS, having jurisdiction over identified resources would occur to identify specific mitigation measures such as restoration efforts designed to re-vegetate unique, rare or endangered species of plants. 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 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 and animal species occur on the project site mitigation shall be required in accordance with the Endangered Species Act. Mitigation measures shall be

developed in consultation with the CDFG and the 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 as enforcing litter ordinances in sensitive habitat areas. Plant number and species diversity could be maintained by either preserving them prior to, during, and after installation of facilities or by re-establishing and maintaining the plant communities post construction.

Infiltration stormwater BMPs and diversion and treatment facilities 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. Mitigation measures to maintain minimal flow to support downstream plant life-related beneficial uses should be reviewed and approved by the CDFG and USFWS.

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: Potentially Significant

LAKE MANAGEMENT IMPLEMENTATION ALTERNATIVES

Lake management activities may have the potential to reduce aquatic plant species. Particularly in shallow areas, there may impacts to aquatic vegetation. 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 CDFG and 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.

STORMWATER IMPLEMENTATION ALTERNATIVES

See response to Response to 4. Plant life. 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 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 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: Potentially Significant

LAKE MANAGEMENT IMPLEMENTATION ALTERNATIVES

Sediment Capping

Sediment capping may have the potential to introduce new plant species into the lake if the capping equipment has not properly been decontaminated in between projects. However, this risk can be easily mitigated by ensuring that there are approved procedures for capping equipment cleaning after each project. It is expected that capping will reduce the establishment of some aquatic vegetation; however, it is not expected that it will prevent the replenishment of species to healthy habitat levels.

Dredging/Hydraulic Dredging

Dredging/hydraulic dredging may have the potential to introduce new plant species into the lake if the dredging contractor has not properly decontaminated the dredge in between projects. However, this risk can be easily mitigated by ensuring that there are approved procedures for dredging cleaning after each project. It is expected that dredging will reduce the establishment of some aquatic vegetation; however it is not expected that it will prevent the replenishment of species to healthy habitat levels.

Monitored Natural Attenuation of Contaminants

Monitored natural attenuation of contaminants is not expected to result in introduction of new species of plants into an area, or in a barrier to the normal replenishment of existing species.

STORMWATER IMPLEMENTATION ALTERNATIVES

Infiltration Stormwater BMPs

Vegetated infiltration stormwater BMPs may be used in conjunction with other structural treatment devices, which could result in the introduction of new species of plants into an area. Based on the waste load allocations for stormwater permittees, it is most likely that structural BMPs would be sited in urbanized areas. Urban land uses tend to be landscaped and often with common, non-native species. However, to the extent

possible, Vegetated infiltration stormwater BMPs should be planted with native species. The use of exotic invasive species or other plants listed in the Exotic Pest Plant of Greatest Ecological Concern in California (CalEPPC, 1999) should be prohibited.

Diversion and Treatment

Diversion and treatment is not anticipated to result in introduction of new species of plants into an area, or in a barrier to the normal replenishment of existing species. However, to the extent that the construction, operation, or maintenance of the devices may potentially result in the introduction of new species of plants to the area, the devices can be and redesigned and sited in the subsurface to mitigate this potential impact.

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

Answer: No Impact

LAKE MANAGEMENT IMPLEMENTATION ALTERNATIVES

Neither Machado Lake nor the surrounding park area is used for agricultural crop production. Furthermore, Machado Lake is not used as a supply of agriculture irrigation water. It is not anticipated that the implementation of lake management implementation alternatives will result in a reduction in acreage of any agriculture crop.

STORMWATER IMPLEMENTATION ALTERNATIVES

Infiltration Stormwater BMPs and Diversion and Treatment

Implementation of the proposed TMDL is not likely to result in the reduction in acreage of any agricultural crop, as agriculture is not a significant land use in the portions of the Machado Lake subwatershed subject to the TMDL. To the extent that implementation strategies are employed in agricultural areas, many of these strategies may actually improve agricultural resources by reducing the loss of topsoil or improving soil quality. The available management practices or other potential strategies are unlikely to lead to a conversion of agricultural land to other uses.

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

Answer: Potentially Significant Impact

Responsible parties should consult with CDFG and USFWS prior to implementing projects that may impact animal life both protected and non-protected. Furthermore, the Machado Lake area is an important habitat for many special status bird species and birds protected by the Migratory Bird Treaty Act. Appropriate measures such as bird, habitat, and nesting surveys for the protection of birds should be taken in conjunction with all construction, operation and maintenance activities at the lake.

LAKE MANAGEMENT IMPLEMENTATION ALTERNATIVES

Sediment Capping

Sediment capping represents a significant project and, in general, impacts are expected; however; with proper planning and care, some impacts can be short lived and mitigated. The capping is only in a small area of the lake at a time and the impacts are limited to the area of operation. Since the lake is maintained as an aquatic habitat during capping, other parts of the lake can act as refuge areas for mobile species until activities are completed.

The goal of a capping project is normally to change the nature of the lake substrate. As a result, after the capping 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 bird observed at the lake. Fish populations would be subject to in lake conditions, however their food source may temporarily supplemented in order to mitigate this impact.

Sediment capping would be a large project taking place at the lake and will create noise and may require the removal of some shallow water vegetation that is often used as bird habitat. It is expected that this would impact bird species at the lake. Mitigation measures will be required to ensure the least disturbance possible. These measures could include a bird and habitat survey to identify sensitive species and suitable habitat areas. Nesting surveys could also be conducted to ensure that disturbing activities do not take place during the nesting season. Due to the potential impacts, a sediment capping operation should be fully analyzed on a lake wide basis at the project level. The long term benefits to animal life by implementation of the TMDL outweighs short term negative impacts.

Dredging/Hydraulic Dredging

Dredging/hydraulic dredging represents a significant project and, in general, impacts are expected; however; with proper planning and care, some impacts can be short lived and mitigated. The dredge is only capable of working in a small area of the lake at a time and the impacts are limited to the area of operation. Since the lake is maintained as an aquatic habitat during dredging, other parts of the lake can act as refuge areas for mobile species until activities are completed.

However, a reduction in benthic invertebrate species and a reduction in habitat available for benthic invertebrates are expected as the sediment and associated biota are removed from the lake. In areas of the lake where the sediments are toxic these impacts

are reduced, but if areas with an active benthic community exist, the impact is generally unavoidable. The goal of a dredging project is normally to change the nature of the lake substrate, and 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 bird observed at the lake. Fish populations would be subject to in lake conditions, however their food source may temporarily supplemented in order to mitigate this impact.

Hydraulic dredging would be a large project taking place at the lake and will create noise and may require the removal of some shallow water vegetation that is often used as bird habitat. It is expected that this would impact bird species at the lake. Mitigation measures will be required to ensure the least disturbance possible. These measures could include a bird and habitat survey to identify sensitive species and suitable habitat areas. Nesting surveys could also be conducted to ensure that disturbing activities do not take place during the nesting season. Due to the potential impacts a hydraulic dredging operation should be fully analyzed on a lake wide basis at the project level. The long term benefits to animal life by implementation of the TMDL outweighs short term negative impacts.

Monitored Natural Attenuation of Contaminants

Monitored natural attenuation of contaminants is not expected to result in change in diversity of species, or numbers of any species of animals from the current condition. However, it would allow sediments to remain contaminated for longer periods of time.

STORMWATER IMPLEMENTATION ALTERNATIVES

Infiltration Stormwater BMPs and Diversion and Treatment

See Response to 4. Plant life. 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 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 b. Will the proposal result in a reduction of the numbers of any unique, rare, or endangered species of animals?

Answer: Potentially Significant

LAKE MANAGEMENT IMPLEMENTATION ALTERNATIVES

Depending on the lake management alternative implemented, direct or indirect impacts to special-status animal species may possibly occur during and after construction or implementation activities. Special-status species are present in the Machado Lake area and the watershed. If special-status species are present during activities such as dredging, aerator installation, and 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

The following mitigation measures should be implemented to reduce or avoid potential project-level impacts to unique, rare or endangered species of animals:

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 (CNDDDB) 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 construction/implementation activities and per applicable 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 in accordance with USFWS and/or CDFG protocols 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.

Sediment Capping

The installation of a sediment cap is not expected to cause a reduction in unique, rare or endangered animal species. The installation process may cause temporary and short term disturbance to bird species at the lake. However, these can be mitigated by

conducting appropriate bird surveys and selecting appropriate times for the work to be conducted. Furthermore, most bird species populate the east side of the lake which is removed from the disturbance of day to park activities. The habitat areas on the east side of the lake could provide areas for birds to seek refuge during the installation of a sediment cap. However, sediment capping should not be conducted during nesting season as even minor disturbance can cause a nest to be abandoned.

Dredging/Hydraulic Dredging

Species status bird species are regularly observed at the lake. Special status bird species include those that are listed and threatened or endangered and those protected by the Migratory Bird Treaty Act. The birds could be potentially impacted by a hydraulic dredging operation. This operation will create uncommon noise in the lake area and require the removal of some of the shallow water vegetation that is often used as bird habitat. Mitigation measures will be required to ensure the least disturbance possible. These measures could include a bird and habitat survey to identify sensitive species and suitable habitat areas. Nesting surveys could also be conducted to ensure that disturbing activities do not take place during the nesting season.

Special status fish or amphibian species have not been identified in the lake area. However is recommended that a CNDDDB search be conducted and any necessary survey take place prior to the initiation of dredging activities.

Monitored Natural Attenuation of Contaminants

Monitored natural attenuation of contaminants is not expected to result in a reduction of the numbers of any unique, rare, or endangered species of animals.

STORMWATER IMPLEMENTATION ALTERNATIVES

See Response to 4. Plant life. 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 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 an introduction of a new species of animals into an area, or result in a barrier to migration or movement of animals.

Answer: Potentially Significant

LAKE MANAGEMENT IMPLEMENTATION ALTERNATIVES

Sediment Capping

Sediment capping is not expected to result in the introduction of new animal species to the lake. Sediment capping, however, may potentially impact the movement and/or migration of animals. If capping activities take place during migration, the noise and associated activities may adversely impact the migration patterns of some birds. It is anticipated that this could be mitigated by conducting capping activities outside of the migration season.

Dredging/Hydraulic Dredging

Dredging/hydraulic dredging is not expected to result in the introduction of new animal species to the lake. Dredging however, may potentially impact the movement and/or migration of animals. If dredging activities take place during migration the noise and associated activities may adversely impact the migration patterns of some birds. It is anticipated that this could be mitigated by conducting dredging activities outside of the migration season.

Monitored Natural Attenuation of Contaminants

Monitored natural attenuation of contaminants is not expected to result in an introduction of a new species of animals into an area, or result in a barrier to migration or movement of animals.

STORMWATER IMPLEMENTATION ALTERNATIVES

Infiltration Stormwater BMPs and Diversion and Treatment

It is not reasonably foreseeable that implementation of infiltration stormwater 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 treatment devices would be constructed in areas such as these. Structural BMPs would be sited in urbanized areas.

However, infiltration stormwater BMPs and diversion and treatment facilities 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 associated with the implementation of infiltration stormwater BMPs and diversion and treatment facilities 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 treatment devices 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 animal 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 nest 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.

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

Answer: Potentially Significant

LAKE MANAGEMENT IMPLEMENTATION ALTERNATIVES

Sediment Capping

Sediment capping may require the removal and covering of some aquatic vegetation. The removal and covering of aquatic vegetation would reduce wildlife habitat primarily for birds; however, it is expected that enough vegetation would remain in place to prevent a significant impact. Moreover, the habitat areas reduced by capping operations would gradually re-colonize.

Sediment capping will cover the sediments where benthic aquatic invertebrates reside with clay sediment, clay, gravel, or other material. This impact would be unavoidable and the cover of contaminated sediment material is the goal of a capping operation. It is expected that the benthic community will gradually re-colonize as well.

Dredging/Hydraulic Dredging

Dredging/hydraulic dredging will require the removal of some aquatic vegetation and removal of benthic community habitat (fine organic sediments). The removal of aquatic vegetation would reduce wildlife habitat primarily for birds, however; it is expected that enough vegetation would remain in place to prevent a significant impact. Moreover, the habitat areas reduced by dredging operations would gradually re-colonize.

In addition, the removal of dredged materials will reduce the fine organic sediments in large parts of the lake, which is generally where benthic aquatic invertebrates reside. This impact would be unavoidable and the removal of contaminated sediment material is the goal of a dredging operation. It is expected that the benthic community will gradually re-colonize as well.

In general the dredging operation is expected to deepen the lake and improve water clarity in the main body of the lake. This will improve the ability of rooted aquatic vegetation to colonize portions of the main body of the lake creating healthy habitat for fish. This would be a positive impact as a result of hydraulic dredging.

Monitored Natural Attenuation of Contaminants

Monitored natural attenuation of contaminants is not expected to result in deterioration to existing fish or wildlife habitat from the current condition. However, it would allow sediments to remain contaminated for longer periods of time, impacting habitat.

STORMWATER IMPLEMENTATION ALTERNATIVES

Infiltration Stormwater BMPs

Implementation of the TMDL will considerably improve fish habitat by removing pollutants from the Machado Lake subwatershed. A change in the amount of surface water may occur if compliance with the TMDL is achieved in part through infiltration stormwater BMPs or diversion and treatment of stormwater which would otherwise enter

stormdrain system discharging into the lake. Machado Lake supports sensitive freshwater wetland habitat (see section 1.3 in the staff report). 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 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 CDFG and USFWS.

Diversion and Treatment

Sand and media filters are flow through devices. Sand and media filters may impede or slow overland flow to stormdrains if not properly designed and maintained and could change the amount of surface water. Proper design, inspection, and maintenance may mitigate potentially adverse impacts to existing fish and wildlife habitats. Treated stormwater can be pumped back into the storm system minimizing impacts to fish and wildlife habitat.

Also see response to 5. Animal Life. 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 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

LAKE MANAGEMENT IMPLEMENTATION ALTERNATIVES

Sediment Capping

There will be noise associated with sediment capping operations. It is expected that the noise levels will be greater than ambient noise; however, the increased noise will be temporary and can be mitigated. Noise mitigation measures should be implemented and may include the selection of quieter running equipment and providing supplemental noise shielding around engines and pumps. County or city noise ordinances should be reviewed to ensure compliance prior the initiation of the project.

Dredging/Hydraulic Dredging

There will be noise associated with a Dredging/hydraulic dredging operation. It is expected that the noise levels will be greater than ambient noise; however, the increased noise will be temporary and can be mitigated. Analysis for other hydraulic dredging operations found that community noise equivalent levels (CNEL) of 60dBA can

be exceeded for locations within 2,000 feet of the dredge (Bollinas Lagoon Ecosystem Restoration Feasibility Study, 2002). Mitigation measures may include the selection of quieter running equipment and providing supplemental noise shielding around engines and pumps. City or county noise ordinances could also be reviewed to ensure compliance prior the initiation of the project.

Monitored Natural Attenuation of Contaminants

Monitored natural attenuation of contaminants is not expected to result in increases in existing noise levels.

STORMWATER IMPLEMENTATION ALTERNATIVES

Infiltration Stormwater BMPs and Diversion and Treatment

Construction of infiltration stormwater BMPs and diversion and treatment facilities would potentially involve removal of asphalt and concrete from streets and sidewalks, excavation and shoring, installation of reinforced concrete pipe, installation of the structural BMPs, and repaving of the streets and sidewalks. It is anticipated that construction 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 4 provides noise levels generated by different machinery that may be used in installing the structural treatment devices.

Table 4 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 vibrate concrete	82	0.15	74	68
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

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.

Stormwater treatment BMPs should be design with sufficient hydraulic head to operate by gravity and eliminate the need for pumps. Diversion pumps may also result in an increase in existing noise levels. These pumps can be site below surface and the use of noise reducing barriers can be employed to mitigate the increase in noise levels.

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

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

Answer: Potentially Significant

LAKE MANAGEMENT IMPLEMENTATION ALTERNATIVES

Sediment Capping

There will be noise associated with sediment capping operations (see 6 Noise a). Personnel conducting the capping 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 in addition to the noise mitigation measures previously described (6 Noise a.).

Dredging/Hydraulic Dredging

There will be noise associated with a Dredging/hydraulic dredging operation (see 6 Noise a). Personnel conducting the dredging 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. In addition to the noise mitigation measures previously described (6 Noise a.).

Monitored Natural Attenuation of Contaminants

Monitored natural attenuation of contaminants is not expected to result in exposure of people to severe noise levels.

STORMWATER IMPLEMENTATION ALTERNATIVES

Infiltration Stormwater BMPs and Diversion and Treatment

Implementation alternatives may entail short-term disturbances during construction, operation, and maintenance of infiltration stormwater BMPs and diversion and treatment facilities. The specific project impacts can be mitigated by standard noise abatement techniques including sound barriers and insulation to reduce noise from pumps, motors, fans, etc., passive design BMPs that do not require frequent maintenance, scheduling of maintenance during mid-day hours, and noise monitoring to ensure levels remain below acceptable levels. It is not foreseeable that implementation of the TMDL will result in exposure of people to severe noise levels once mitigation measures are implemented.

Potential noise impacts and associated mitigation mitigations for each implementation alternative are presented in Noise. 6.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 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 a. Will the proposal produce new light or glare.

Answer: Potentially Significant

LAKE MANAGEMENT IMPLEMENTATION ALTERNATIVES

Sediment Capping

Sediment capping is not anticipated to produce a new source of light or glare. Should night time capping activities be proposed, or should lighting be used to increase safety around equipment, potential impacts should be evaluated at the project level. A lighting plan could be prepared to include shielding on all light fixtures and address limiting light trespass and glare through the use of shielding and directional lighting methods, including but not limited to, fixture location and height. Potential mitigation efforts may also include screening and low-impact lighting. Additional lighting from operation is intermittent and short-term.

Dredging/Hydraulic Dredging

Dredging/Hydraulic dredging is not anticipated to produce a new source of light or glare. Should night time dredging activities be proposed, or should lighting be used to increase safety around dredging facilities or equipment, potential impacts should be evaluated at the project level. A lighting plan could be prepared to include shielding on all light fixtures and address limiting light trespass and glare through the use of shielding and directional lighting methods, including but not limited to, fixture location and height. Potential mitigation efforts may also include screening and low-impact lighting. Additional lighting from operation is intermittent and short-term.

Monitored Natural Attenuation of Contaminants

Monitored natural attenuation of contaminants is not expected to produce new light or glare.

STORMWATER IMPLEMENTATION ALTERNATIVES

Implementation of the proposed Basin Plan amendment is not likely to produce new light or glare because none of the reasonably foreseeable means of compliance involve additional lighting. Should night time construction activities be proposed, or should lighting be used to increase safety around infiltration stormwater BMPs or diversion and treatment facilities, potential impacts should be evaluated at the project level. A lighting plan could be prepared to include shielding on all light fixtures and address limiting light trespass and glare through the use of shielding and directional lighting methods, including but not limited to, fixture location and height. Potential mitigation efforts may also include screening and low-impact lighting. Additional lighting from construction is intermittent and short-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)).

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

Answer: Potentially Significant

LAKE MANAGEMENT IMPLEMENTATION ALTERNATIVES

It is not anticipated that reasonably foreseeable methods of compliance of lake management alternatives will result in substantial alteration of the present or planned land use of an area, they will not physically divide an established community, nor will they conflict with any land use plan.

STORMWATER IMPLEMENTATION ALTERNATIVES

Infiltration Stormwater BMPs and Diversion and Treatment

The installation of infiltration stormwater BMPs and diversion and treatment facilities is not expected to result in substantial alterations or adverse impacts to present or planned land use. To the extent that there could be land use impacts at a specific location, these potential land use conflicts are best addressed at the project level. Since, the Regional Board cannot specify the manner of compliance with the TMDL the Regional Board can not specify the exact location of structural treatment devices. The various cities that might install these devices will need to identify local land use plans as part of a project-

level analysis to ensure that projects comply with permitted use regulations and are consistent with land use plans, general plans, specific plans, conditional uses, or subdivisions.

Notably, structural BMPs can be suitable for an ultra-urban setting and can be specifically designed to accommodate limited land area. For example, underground sand filters are well adapted for applications with limited land area and are most useful where multiple uses of land area are required. They can be placed adjacent to roadways without imposing a safety hazard and can function satisfactorily in the area below elevated roadways or ramps (FHWA, 2007).

Construction of structural treatment devices will not result in permanent features such as above-ground infrastructure that would disrupt, divide, or isolate existing communities or land uses. Projects can incorporate public education and aesthetically pleasing design with functional water quality treatment, such as the Santa Monica Urban Runoff Recycling Facility (Santa Monica, 2007). Projects may be designed to increase parks and wildlife habitat areas and to improve water quality. Construction activities could follow standard mitigation methods and BMPs to reduce any potential impact on surrounding land uses and access to all adjacent land uses could be provided during the construction period.

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)).

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

Answer: Less than significant

LAKE MANAGEMENT IMPLEMENTATION ALTERNATIVES

Lake management implementation alternatives will not increase the rate of use of any natural resources. Implementation of lake management alternatives should not require quarrying, mining, or the extraction of locally important mineral resources. Operation and construction of the lake management alternatives and maintenance vehicles could increase the use of fossil fuels, and may require the use of electricity. Fuel and energy consumption are discussed in greater detail in item 15 Energy, listed below.

STORMWATER IMPLEMENTATION ALTERNATIVES

Infiltration Stormwater BMPs and Diversion and Treatment

It is not reasonable foreseeable that installation and maintenance of structural treatment devices would significantly increase the rate of use of any natural resources or cause substantial depletion of any nonrenewable natural resource. Installation and maintenance of structural treatment devices would not require quarrying, mining, dredging, or extraction of locally important mineral resources. Some types of structural BMPs and treatment facilities may consume electricity to operate pumps, etc., but not at levels which would cause impacts. Furthermore, facilities can be designed to operate hydraulically without the need for pumps.

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

Answer: Less than significant

LAKE MANAGEMENT IMPLEMENTATION ALTERNATIVES

See response to 9 Natural Resources a.

STORMWATER IMPLEMENTATION ALTERNATIVES

See response to 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, chemical or radiation) in the event of an accident or upset conditions?

Answer: Potentially Significant

LAKE MANAGEMENT IMPLEMENTATION ALTERNATIVES

There is the possibility that hazardous materials (e.g. oil and gasoline) may be present during implementation and/or operation of lake management alternatives.

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.

STORMWATER IMPLEMENTATION ALTERNATIVES

Infiltration Stormwater BMPs

Implementation of infiltration devices is not likely to 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. Nor should it result in any increased exposure to hazards or hazardous material. While some use of hazardous materials (e.g., paint, oil, gasoline) is likely during construction, 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 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.

Diversion and Treatment

Implementation of sand and media filters is not likely to 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. Nor should it result in any increased exposure to hazards or hazardous material. While some use of hazardous materials (e.g., paint, oil, gasoline) is likely during construction, 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 Cal-OSHA 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.

Fluids and sediment must be removed from underground sand filters and could pose a risk of release of hazardous substances if not handled in a timely manner and disposed of appropriately. Contaminated sand removed from sand filters can be removed to landfill (WERF, 2005). Maintenance of underground sand and media filters may pose risks to maintenance workers. Mitigation measures to avoid these risks include requiring workers to obtain hazardous materials maintenance, record keeping, and disposal activities training, OSHA-required Health and Safety Training, and OSHA Confined Space Entry training.

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: Less than significant

LAKE MANAGEMENT IMPLEMENTATION ALTERNATIVES

It is not anticipated that reasonably foreseeable methods of compliance will result in an impact to population in altering the location, distribution, density, or growth rate of human population of an area. Potential implementation strategies including sediment capping and hydraulic dredging, would not directly or indirectly induce population growth in the area, or displace people.

STORMWATER IMPLEMENTATION ALTERNATIVES

Infiltration Stormwater BMPs and Diversion and Treatment

It is not foreseeable that implementation of the TMDL would alter the location, distribution, density, or growth rate of the human population of an area. Potential implementation strategies including structural BMPs, would not directly or indirectly induce population growth in the area, or displace people.

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

Answer: Less than significant

LAKE MANAGEMENT IMPLEMENTATION ALTERNATIVES

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. The lake management implementation alternatives will be take place in the lake itself and will impact nearby residential areas or create a need for additional housing.

STORMWATER IMPLEMENTATION ALTERNATIVES

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 project like structural BMPs are generally small and responsible parties would not need to impact existing housing in order to site these BMPs.

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

Answer: Potentially Significant

LAKE MANAGEMENT IMPLEMENTATION ALTERNATIVES

It is not anticipated that reasonably foreseeable methods of compliance will result in the generation of substantial vehicular movement. The lake management implementation alternatives will be take place in the lake itself and will not impact nearby roads resulting in substantial additional vehicular movement.

STORMWATER IMPLEMENTATION ALTERNATIVES

Infiltration Stormwater BMPs and Diversion and Treatment

The proposal may result in additional vehicular movement during installation of infiltration stormwater BMPs and diversion and treatment facilities. These impacts will be temporary and limited in duration to the period of installation. These impacts would be spread out spatially over the watershed and temporally over the implementation schedules. The proposed project would be in conformance with the existing Los Angeles County congestion management plan (CMP), and this impact would be less than significant.

In order to reduce the impact of construction traffic, implementation of a construction management plan for specified facilities could be developed to minimize traffic impacts upon the local circulation system. A construction traffic management plan could address traffic control for any street closure, detour, or other disruption to traffic circulation. The plan could identify the routes that construction vehicles will 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 tripping, location points for ingestion 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. Potential impacts could also 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.

Maintenance of structural treatment devices could cause additional traffic. The frequency and intensity of maintenance for these structural BMPs varies from high in infiltration basins to low in vegetated swales (USEPA, 2002). The proposed project should be in conformance with the Los Angeles County CMP and would result in a less than significant impact. To the extent that operation and maintenance caused traffic impacts, they could be mitigated by designing BMPs that require less frequent maintenance and scheduling of maintenance during non-peak traffic hours.

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 b. Will the proposal result in effects on existing parking facilities, or demand for new parking?

Answer: Potentially Significant

LAKE MANAGEMENT IMPLEMENTATION ACTIVITIES

Sediment Capping

The installation of a sediment cap may result in temporary impacts to parking facilities. Parking areas may temporarily be required for the staging of the installation of the sediment cap. All parking effects from this activity should be limited and temporary only.

The TMDL will improve sediment and surface water quality with respect to toxic pesticides and PCBs. This may result in increased patron visitation of the park which could lead to an increased demand for parking. Available parking spaces can be reconfigured to provide equivalent number of spaces or a functionally similar parcel can be provided for use as offsite parking to mitigate potential adverse parking impacts.

Hydraulic Dredging

Hydraulic Dredging may result in temporary 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 lake bottom. All parking effects from the dredging itself should be limited and temporary only, equipment and materials are to be removed at the completion of dredging operations.

The TMDL will improve sediment and surface water quality with respect to toxic pesticides and PCBs. This may result in increased patron visitation of the park which could lead to an increased demand for parking. Available parking spaces can be reconfigured to provide equivalent number of spaces or a functionally similar parcel can be provided for use as offsite parking to mitigate potential adverse parking impacts.

Monitored Natural Attenuation of Contaminants

Monitored natural attenuation of contaminants is not expected to result in effects on existing parking facilities, or demand for new parking.

STORMWATER IMPLEMENTATION ALTERNATIVES

Infiltration Stormwater BMPs and Diversion and Treatment

Compliance with the TMDL may result in alterations to existing parking facilities to incorporate infiltration stormwater BMPs or other structural BMPs to treat stormwater. Structural BMPs 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 a functionally similar parcel can be provided for use as offsite parking to mitigate potential adverse parking impacts.

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 impact upon existing transportation systems?

Answer: Potentially Significant

LAKE MANAGEMENT IMPLEMENTATION ACTIVITIES

It is not anticipated that reasonably foreseeable methods of compliance will result in the substantial impact upon existing transportation systems. The lake management implementation alternatives will be take place in the lake itself and will not impact nearby roads; therefore, there is no expectation of any substantial impact upon existing transportation systems.

STORMWATER IMPLEMENTATION ALTERNATIVES

Infiltration Stormwater BMPs and Diversion and Treatment

Depending on the implementation strategy chosen, the proposal may result in temporary alterations to existing transportation systems during construction of structural BMPs, stormwater diversions, or treatment facilities. The potential impacts are 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. The applicability of sand filters to roadway projects has been demonstrated (FHWA, 2007). Structural BMPs installed on streets could potentially impact public rights of way. Potential impacts should be considered and mitigated at the project level. Potential mitigation measures include proper design and siting of structural BMPs and installation of signage to direct and control traffic.

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 d: Will the proposal result in alterations to present patterns of circulation or movement of people and/or goods?

Answer: Potentially Significant

LAKE MANAGEMENT IMPLEMENTATION ACTIVITIES

It is not anticipated that reasonably foreseeable methods of compliance will result in the alterations to present patterns of circulation or movement of people and/or goods. The lake management implementation alternatives will be take place in the lake itself and will

not impact nearby roads resulting in changes to present patterns of circulation or movement of people and/or goods.

STORMWATER IMPLEMENTATION ALTERNATIVES

See response to “Transportation/Circulation.” 13.a. and 13.c.

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 e: Will the proposal result in alterations to waterborne, rail or air traffic?

Answer: Less than significant

LAKE MANAGEMENT IMPLEMENTATION ACTIVITIES

Hydraulic Dredging

Hydraulic dredging will not result in any foreseeable alterations to rail or air traffic but may result in temporary and limited alterations to waterborne traffic. Dredging activities may be directed from a barge located on the lake which could impede boat traffic. Currently boat traffic on the lake is limited to a city operation and maintenance boat so impacts are expected to be minimal.

Sediment capping and monitored natural attenuation will not result in any foreseeable alterations to waterborne, rail, or air traffic.

STORMWATER IMPLEMENTATION ALTERNATIVES

Infiltration Stormwater BMPs and Diversion and Treatment

The proposal may potentially result in temporary alterations to rail transportation during construction of stormwater diversion or treatment facilities. The potential impacts would be limited and short-term. The potential impacts could be avoided or minimized through siting, designing, and scheduling of construction activities.

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

Answer: Potentially Significant

LAKE MANAGEMENT IMPLEMENTATION ACTIVITIES

It is not anticipated that reasonably foreseeable methods of compliance will result in an increase in traffic hazards to motor vehicles, bicyclists or pedestrians. The lake management implementation alternatives will take place in the lake itself and will not impact nearby roads resulting in an increase in traffic hazards to motor vehicles, bicyclists or pedestrians.

STORMWATER IMPLEMENTATION ALTERNATIVES

Infiltration Stormwater BMPs and Diversion and Treatment

The foreseeable methods of compliance may entail short-term disturbances during construction of structural BMPs, stormwater diversions, or treatment facilities. 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. Notably, the applicability of infiltration devices and filters to roadway projects without imposing a safety hazard has been demonstrated (FHWA, 2007).

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.

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 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 services?

Answer: Less than significant

LAKE MANAGEMENT IMPLEMENTATION ACTIVITIES

It is not anticipated that reasonably foreseeable methods of compliance as all lake management activities occur directly on the lake and is not anticipated to directly or indirectly impact or result in a need for new or altered governmental services in the area of fire protection services.

STORMWATER IMPLEMENTATION ALTERNATIVES

Infiltration Stormwater BMPs and Diversion and Treatment

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 fire protection services, the construction of which could cause significant environmental impacts. 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 fire protection services. Any potential impact to fire 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 fire 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.

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 services?

Answer: Less than significant

LAKE MANAGEMENT IMPLEMENTATION ACTIVITIES

It is not anticipated that reasonably foreseeable methods of compliance as all lake management activities occur directly on the lake and is not anticipated to directly or indirectly impact or result in a need for new or altered governmental services in the area of police protection services.

STORMWATER IMPLEMENTATION ALTERNATIVES

Infiltration Stormwater BMPs and Diversion and Treatment

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.

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

Answer: Less than significant

LAKE MANAGEMENT IMPLEMENTATION ACTIVITIES

It is not anticipated that reasonably foreseeable methods of compliance as all lake management activities occur directly on the lake and is not anticipated to directly or indirectly impact or result in a need for new or altered governmental services in the area of altered school services.

STORMWATER IMPLEMENTATION ALTERNATIVES

Infiltration Stormwater BMPs and Diversion and Treatment

Proposed implementation strategies for this TMDL include infiltration stormwater BMPs and diversions and treatment facilities. It is not foreseeable that this proposal will result in a need for new or altered governmental facilities for schools, the construction of which could cause significant environmental impacts.

Any potential impact to schools due to diversion of resources is not an “environmental” impact that involves changes in the physical environment. Maintenance of school facilities is not expected to significantly increase school facilities maintenance demands. Projects may be designed to increase recreational areas and to improve water quality. Projects would not pose safety risks or hazards at a school because they are passive devices placed at or below grade. Infiltration devices can involve little more than amended soils and vegetation.

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

LAKE MANAGEMENT IMPLEMENTATION ACTIVITIES

It is not anticipated that reasonably foreseeable methods of compliance will result in a need for new or altered governmental services in the area of parks or other recreational facilities. See also 19 "Recreation" a.

STORMWATER IMPLEMENTATION ALTERNATIVES

Infiltration Stormwater BMPs and Diversion and Treatment

Proposed implementation strategies for this TMDL include infiltration stormwater BMPs and diversion and treatment facilities. The proposal may result altered park recreational activities during construction periods or if open space areas of parks are used for stormwater infiltration. Projects may be designed to increase parks and wildlife habitat areas and to improve water quality. Several of the stormwater BMPs can be designed for multi-use purposes. Vegetated systems like swales and biofiltration systems can also be designed to integrate local vegetation. Placement of these systems within the park and usage as stormwater systems would not otherwise impact parks or other recreational facilities. Proper siting of other infiltration stormwater BMPs and diversion and treatment facilities may mitigate adverse impacts to parks and 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

LAKE MANAGEMENT IMPLEMENTATION ACTIVITIES

Hydraulic Dredging

Hydraulic dredging and sediment capping are new maintenance activities at the lake facility itself but is not anticipated to result in a need for any new or altered maintenance of other public facilities, including roads. The hydraulic dredging and/or sediment capping will most likely be punctuated activities and will not require new or altered maintenance of any other public facilities, including roads.

Monitored Natural Attenuation of Contaminants

Monitored natural attenuation of contaminants is not expected to result in a need for new or altered governmental services in any of the following areas: maintenance of public facilities, including roads.

STORMWATER IMPLEMENTATION ALTERNATIVES

Infiltration Stormwater BMPs and Diversion and Treatment

The proposal will result in the need for increased maintenance of public facilities and, specifically, infiltration stormwater BMPs and diversion and treatment facilities. All stormwater BMPs require some degree of maintenance, though the frequency and intensity of maintenance vary per BMPs.

Also see response to 4. Plant Life. a, b, and c and 5. Animal Life. a, b, and c.

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.

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 any other new or altered governmental services governmental services in any of the following areas: Other governmental services?

Answer: No Impact

LAKE MANAGEMENT IMPLEMENTATION ACTIVITIES

It is not anticipated that reasonably foreseeable methods of compliance will result in a need for any other new or altered governmental services.

STORMWATER IMPLEMENTATION ALTERNATIVES

Infiltration Stormwater BMPs and Diversion and Treatment

Implementation of the proposed TMDL is not likely to result in a need for new or altered other governmental services. Impacts to governmental services, including fire protection, police protection, schools, parks or other recreation facilities, and maintenance of public facilities included roads, have been addressed in 14. Public Services. a, b, c, d, and e.

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

Answer: Potentially Significant

LAKE MANAGEMENT IMPLEMENTATION ALTERNATIVES

The lake management implementation alternatives 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.

Installation and operation of the lake management alternatives will require energy and fuel for heavy equipment, machinery, and vehicles. Energy demand during construction and implementation are temporary. Responsible parties can mitigate fuel and energy consumption during construction through the use of more energy efficient vehicles and equipment. Required maintenance is unlikely to use substantial amounts of fuel or energy, substantially increase demand upon existing sources of energy, or require the development of new sources of energy.

STORMWATER IMPLEMENTATION ALTERNATIVES

Infiltration Stormwater BMPs and Diversion and Treatment

Implementation of structural BMPs and diversion and treatment strategies should not result in the use of substantial 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 related heavy equipment, vehicles, and machinery require the use of fuel and electricity to operate. Maintenance vehicles and also require fuel and energy. Use of more fuel efficient equipment may help mitigate the extra fuel and energy consumption associated with temporary construction and maintenance activities.

Pumps that require electricity may be incorporated into structural BMPs and diversions; however, operation of pumps is not expected to place substantial increases on existing energy supply. Responsible agencies may avoid the use of pumps in structural BMPs by siting and designing BMPs to allow for sufficient hydraulic head in order to operate BMPs by gravity flow.

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

Answer: Less than significant

LAKE MANAGEMENT IMPLEMENTATION ALTERNATIVES

See response to 15. Energy a. Implementation of lake management alternatives and compliance with the TMDL will not increase demand on existing energy sources or require the development of new sources.

STORMWATER IMPLEMENTATION ALTERNATIVES

See response to “15. Energy. a.”

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

LAKE MANAGEMENT IMPLEMENTATION ALTERNATIVES

Lake management implementation alternatives are not of the size or scale to require new power or natural gas utilities. The machinery used for dredging and capping would not likely require connection to power or natural gas utilities.

That installation and operation of lake management alternatives will not result in a substantial increased need for new systems, or substantial alterations to power or natural gas utilities is not reasonably foreseeable, because these alternatives are not large enough to substantially tax current power or natural gas sources.

STORMWATER IMPLEMENTATION ALTERNATIVES

Infiltration Stormwater BMPs and Diversion and Treatment

It is not reasonably foreseeable that implementation infiltration stormwater BMPs or diversion and treatment facilities would result in a substantial increase need for new systems, or substantial alterations to power or natural gas utilities. Some projects may require moderate amounts of electricity to operate pumps and treatment units; however, operation of pumps is not expected to place substantial increases on existing energy supply such that new or altered utilities would be required.

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

Answer: Less than significant

LAKE MANAGEMENT IMPLEMENTATION ALTERNATIVES

Lake management implementation alternatives are not expected to require new or substantial alterations to the communication system. Lake management alternatives will not result in any new residential, retail, industrial or any other development projects that would require communication systems.

STORMWATER IMPLEMENTATION ALTERNATIVES

Implementation alternatives may entail short-term construction of structural BMPs, diversion and treatment facilities. 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 the TMDLs 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.

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: Potentially Significant

LAKE MANAGEMENT IMPLEMENTATION ALTERNATIVES

Lake management implementation alternatives are not expected to require new or substantial alterations to the water supply system.

STORMWATER IMPLEMENTATION ALTERNATIVES

Infiltration Stormwater BMPs and Diversion and Treatment

It is not reasonably foreseeable that implementation of infiltration stormwater BMPs and diversion and treatment facilities will result in a substantial increase in the need for new systems, or substantial alterations to water utilities. Potential projects associated compliance of the TMDL will not result development of any large residential, retail, industrial or any other development projects that would significantly increase the demand on the current water supply facilities or require new water supply facilities.

The infiltration stormwater BMPs has the potential to recharge groundwater aquifers, and it is possible that additional wells or piping may be necessary to access this enhanced water supply. However, in this event, the increased water supply would outweigh the impacts of having to construct additional infrastructure. Environmental impacts due to construction of new water utilities would be speculative at this point, and would need to be assessed by the responsible agency in a project-level CEQA analysis.

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 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

LAKE MANAGEMENT IMPLEMENTATION ALTERNATIVES

Lake management implementation alternatives are not expected to require new or substantial alterations to the sewer or septic tanks, as the alternatives are not anticipated to generate extensive waste entering the sewer or septic systems or require excavation such that a substantial alteration to sewer or septic systems would be required

STORMWATER IMPLEMENTATION ALTERNATIVES

Infiltration Stormwater BMPs

It is not foreseeable that infiltration stormwater BMPs and diversion and treatment facilities will result in a substantial increase need for new systems, or substantial alterations to sewers or septic tanks.

Diversion and Treatment

Diversion and treatment facilities may result in the need for new systems, or substantially alter sewer systems if treated stormwater is diverted to a sanitary sewer. This diversion may adversely impact the treatment capacity of local Publicly Owned Treatment Works resulting in a new or substantially alter existing sewer and septic systems. However, this impact may be mitigated by installing high-flow bypasses, diverting all flow back into the sewer system, or conveying the flow into infiltration stormwater 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)).

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

Answer: Potentially Significant

LAKE MANAGEMENT IMPLEMENTATION ALTERNATIVES

Lake management implementation alternatives are not expected to require new or substantial alterations to the stormwater drainage system, as the lake management alternatives would have minimal or no interaction with the stormwater drainage system.

STORMWATER IMPLEMENTATION ALTERNATIVES

Infiltration Stormwater BMPs and Diversion and Treatment

Implementation of diversion and treatment, such as sand and media filters, biofilters, vegetated swales, filter strips, bioretention and infiltration basin, or other structural BMPs could result in substantial alterations to stormwater drainage utilities. These types of devices may result in a potentially significant impact due to changes in drainage patterns or flooding hazards if devices became blocked by trash and debris. Any device installed in a stormdrain, 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 devices.

Overall, if there is a significant amount of installation required by structural BMPs, it will substantially alter the stormwater drainage system, which could potentially lead to the development of a stormwater utility. To the extent that these devices, if employed, may conceivably require the need for or require substantial alteration to existing stormdrain systems, responsible agencies would foreseeably opt for other structural or non-structural control measures that would otherwise result in less than significant impacts. These alterations will have a positive environmental impact with the resulting reduced pollutant loads from urban and stormwater runoff.

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 disposal?

Answer: Less than significant

LAKE MANAGEMENT IMPLEMENTATION ALTERNATIVES

Sediment Capping

Sediment capping is to cover contaminated sediments in situ by a layer of clean sediment, clay, gravel, or other material. Sediment capping is not anticipated to result in a need for new systems or substantial alterations to the utilities of solid waste disposal.

Hydraulic Dredging

The purpose of hydraulic dredging is to remove sediments from the lake bottoms. This dredged material requires disposal. One option for disposal of dredged materials is a landfill site; this could potentially impact solid waste utilities. Machado Lake is listed on the 303(d) for Pesticides and PCBs, which are present in the sediment. This potential impact is related to the amount of dredged material requiring disposal. The project

specific planning of a dredging operation will decide the depth to which the lake will be dredged and the potential impact to solid waste disposal will be fully analyzed at that time. The staff report provides a rough estimate of the volume of sediments (486,963 cubic yards) that will need to be disposed of at a landfill. Existing landfills in the area likely have adequate capacity to accommodate this amount of material. 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.

STORMWATER IMPLEMENTATION ALTERNATIVES

Infiltration Stormwater BMPs and Diversion and Treatment

Nominal amounts of construction debris may be generated by installation of structural BMPs. 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.

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

Answer: Potentially Significant

LAKE MANAGEMENT IMPLEMENTATION ALTERNATIVES

Personnel conducting the sediment capping/dredging activities may be exposed to contaminated sediment and this may be a potential health hazard. To mitigate this potential impact, a health and safety plan should be prepared and implemented for any project to address potential health hazards. Compliance with the requirements of Cal OSHA and local safety regulations during implementation of these alternatives 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.

STORMWATER IMPLEMENTATION ALTERNATIVES

Infiltration Stormwater BMPs and Diversion and Treatment

It is reasonably foreseeable that hazards or hazardous materials could be encountered during the installation of diversion and treatment facilities and infiltration stormwater BMPs. Contamination could exist depending on the current and historical land uses of the area. Depending on their location, these facilities 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.

To the extent that installation of infiltration stormwater BMPs and diversion and treatment facilities 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 Cal OSHA 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.

Implementation of stormwater infiltration BMPs and diversion and treatment facilities could create a potential health hazard if facilities are not properly maintained to include vector (mosquito) control. This potential adverse impact can be mitigated by designing systems that minimize stagnant water conditions and/or by requiring oversight and treatment of those systems by vector control agencies. Stagnant water is minimized by allowing for rapid infiltration. Washington State Department of Ecology recommends that sand filters empty in 24 hours (WA DOE, 2005). Certain stormwater treatment BMPs, such as underground sand filters maintain a pool of water. These BMPs should be avoided where vectors are a concern, unless the local vector control agency approves their use (Caltrans, 2002). However, oversight and treatment by vector control agencies may also be an option. BMPs should be covered to seal vectors out, but contain access doors to facilitate inspection and mosquito suppression by vector control agencies. Basic housekeeping practices such as removal of debris and upkeep of vegetative pretreatment devices to prevent clogging and stagnation will prevent vector breeding (CASQA, 2003).

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

LAKE MANAGEMENT IMPLEMENTATION ALTERNATIVES

Lake management implementation alternatives are not expected to expose people to a potential health hazard. To the extent that the operation, installation, and maintenance of lake management alternatives may potentially result in the exposure of potential health hazards, a health and safety plan should be prepared and implemented for any project to address potential health hazards. Compliance with the requirements of Cal

OSHA and local safety regulations during implementation of these alternatives 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.

STORMWATER IMPLEMENTATION ALTERNATIVES

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 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: Potentially Significant

LAKE MANAGEMENT IMPLEMENTATION ALTERNATIVES

Sediment Capping

There may be visual impacts associated with open space areas that are used for the staging of sediment capping activities and for the temporary piling of capping material. This will temporarily impact the scenic view of the lake and surrounding area. The obstruction of the scenic view of Machado Lake will only be impacted during actual capping activities. This is not a permanent view obstruction; therefore this impact is not considered potentially significant.

Dredging/Hydraulic Dredging

Dredging/hydraulic dredging will require that a dredge be floating on the lake 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 piling of material removed from the lake bottom. This will temporarily impact the scenic view of the lake and surrounding area. The obstruction of the scenic view of Machado Lake will only be impacted during actual dredging activities. This is not a permanent view obstruction; therefore this impact is not considered potentially significant.

STORMWATER IMPLEMENTATION ALTERNATIVES

Infiltration Stormwater BMPs and Diversion and Treatment

Infiltration stormwater BMPs and diversion and treatment facilities could be aesthetically offensive if not properly designed, sited, and maintained. Underground structures do not present aesthetics issues (WERF, 2005). However, above ground structures, such as sand filters, can present aesthetic problems if constructed with vertical concrete walls (CASQA, 2003) or if designed as rectangular concrete structures (WERF, 2005).

Many structural BMPs can be designed to provide habitat, recreational areas, and green spaces in addition to improving stormwater quality. Standard architectural and landscape architectural practices can be implemented to reduce impacts. For example, the SMURRF was constructed as an aesthetically pleasing facility that is integrated with the surrounding land uses (Santa Monica, 2007). Screening and landscaping may also be used to mitigate aesthetic effects.

Vandalized structures may become an aesthetically offensive site. Vandalism, however, already exists to some degree in most if urbanized areas and adding new structures is not of itself likely to have any impact upon current vandalism trends. Improved lighting and enforcement of current vandalism regulations may decrease vandalized structures. Below grade structures, such as subsurface sand filters and infiltration basins, are safe for application in public areas and are relatively vandal-proof (FHWA, 2007).

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)).

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

Answer: Potentially Significant

LAKE MANAGEMENT IMPLEMENTATION ALTERNATIVES

Lake management implementation alternatives are not expected to create an aesthetically offensive site open to public view. Some of the implementation alternatives may temporarily or partially obstruct the scenic view of Machado Lake (see 18 Aesthetics a.) however they will not create permanent offensive sites open to public view.

STORMWATER IMPLEMENTATION ALTERNATIVES

See response to 18 Aesthetics 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 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)).

19. Recreation a. Will the proposal result in impact upon the quality or quantity of existing recreation opportunities?

Answer: Potentially Significant

LAKE MANAGEMENT IMPLEMENTATION ALTERNATIVES

Lake management implementation alternatives have the potential to impact the quality of existing recreation opportunities. They are not anticipated to impact the quantity of recreation opportunities

Hydraulic dredging and sediment capping will likely require preparation and staging areas to be used during operation and/or installation. This may temporarily reduce the parking available to park patrons. However all potential impacts on parking availability will be limited and temporary equipment and materials are to be removed at the completion of implementation activities.

The TMDL will improve surface water quality. The improved water quality and improved ecosystem health and the quality of recreational opportunities at Machado Lake will be positively impacted.

STORMWATER IMPLEMENTATION ALTERNATIVES

Infiltration Stormwater BMPs and Diversion and Treatment

It is reasonably foreseeable that installation of infiltration stormwater BMPs and diversion and treatment facilities may temporarily impact the usage of existing recreational sites. Structural BMPs and subsurface devices and will only pose temporary impairment to recreational opportunities. For instance, bike lanes may be temporarily unavailable during installation of structural BMPs or parking locations for recreation facilities may be impacted. Mitigation measures include the incremental installation of the BMPs located in parks, bike lanes, and other recreational sites to avoid impairment of the entire site. The responsible agency may also redesign the BMPs to be less obtrusive or choose a less disruptive implementation strategy such as a non-structural alternative.

Implementation of the TMDL will have a positive impact on the quality and quantity of recreational opportunities by protecting aquatic life-related beneficial uses. Many parks are integrating stormwater BMPs as part of the aesthetic and architectural features of the sites. The environmental impacts can be mitigated through construction BMPs and siting, planning and design practices that minimize environmental impacts. Applicable and appropriate mitigation measures will be evaluated when specific projects are determined. Adding water features to parks has the potential to increase recreational opportunities by providing fishing, birding, and aesthetic enjoyment.

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)).

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

Answer: Potentially Significant

LAKE MANAGEMENT IMPLEMENTATION ALTERNATIVES

Lake management implementation alternatives are not expected to impact a historical structure or building. These implementation alternatives will take place in the lake itself and will not impact historical structures. Moreover there are not historical structures within the Ken Malloy Harbor Regional Park area.

The Ken Malloy Harbor Regional Park area is known to lie within the region of the Gabrieleno Native America people. The Gabrieleno people occupied a large territory including the entire Los Angeles Basin (Jones and Stokes, 2006). At this time Machado Lake was a permanent freshwater source and an appealing area for habitation. The lake implementation activities, particularly hydraulic dredging and sediment capping may have the potential to uncover and/or cover an archeological site and artifacts. It is recommended that the implementation of these lake management alternatives 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 treatment may be required including recordation, evaluation, and data recovery.

STORMWATER IMPLEMENTATION ALTERNATIVES

Infiltration Stormwater BMPs and Diversion and Treatment

Infiltration stormwater BMPs and diversion and treatment facilities would be installed in currently urbanized areas where ground disturbance has previously occurred. Because these areas are already fully urbanized it is unlikely that implementation of structural treatment 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. The site-specific presence or absence of these resources is unknown because the specific locations for facilities will be determined by responsible agencies at the project level. Installation of these systems could result in minor ground disturbances, which could impact cultural resources if they are sited in locations containing these resources and where disturbances have not previously occurred.

Upon determination of specific locations for structural treatment devices, responsible agencies should complete an archaeological survey including consultation with the Native American Heritage Commission, to make an accurate assessment of potential to affect historic, archaeological, or architectural resources or to impact any human remains. If potential impacts are identified, mitigation measures could include project redesign, such as the relocation of facilities outside the boundaries of archeological or historical sites. In the event that prehistoric or historic cultural resources are discovered in project area during construction, all work shall be halted in the vicinity of the archaeological discovery until a qualified archaeologist can visit the site of discovery and assess the significance of the archaeological discovery.

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. Mandatory Findings of Significance.

21.a Does the project have the potential to degrade the quality of the environment, substantially reduce the habitat of a fish or wildlife species, cause a fish or wildlife population to drop below self-sustaining levels, threaten to eliminate a plant or animal community, 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

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

Answer: Potentially Significant

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

Answer: Potentially Significant

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)).

OTHER ENVIRONMENTAL CONSIDERATIONS

This section evaluates several other environmental considerations of reasonably foreseeable methods of complying with the 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).

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 or 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 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.

PROGRAM CUMULATIVE IMPACTS

Compliance with the Machado Lake Pesticides and PCBs TMDL will include stormwater BMPs such as sand/organic filters and filter strips, which also reduce pollutant loading of other pollutants such as nutrients and trash. Also, lake management alternative such as hydraulic dredging may remove other pollutants residing in the sediment. Thus these implementation alternatives will potentially contribute to the implementation of other TMDLs and reduce overall pollutant loading to the lake.

Currently there are two other TMDL adopted for the Machado Lake, the Machado Lake Trash TMDL and the Machado Lake Nutrient TMDL. Some trash removal systems for compliance with the Trash TMDL have a secondary benefit; the catch basin improvements and gross solids removal systems developed by Caltrans and discussed in section 5 of the Trash TMDL SED also remove sediments. Reducing the sediment load to Machado Lake will also reduce the pesticides, PCBs, and nutrient loading to the lake. Many of the BMPs to reduce pesticides, PCBs, and nutrient loading require pretreatment devices, which are often the same devices that are used for trash removal. Therefore, the potential implementation strategies discussed in the Trash TMDL SED will also contribute to the implementation of the pesticides and PCBs and nutrient TMDLs. Since many of the BMPs are multi-purpose for the reduction of pesticide loading, trash loading and nutrient loading, the impacts from BMP implementation to comply with the Machado Lake Pesticides and PCBs, Trash and Nutrient TMDLs are expected to be limited and not cumulative in effect.

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 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 TMDL may cause additional emissions of criteria pollutants and slightly elevated levels of carbon monoxide during construction or BMP and lake management 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. Because these installation-related emissions are temporary, 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 TMDL involves installation activities occurring simultaneously at a number of surface sites in the 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 including are available as discussed in the checklist. In addition, the fact that structural BMPs and lake management alternative 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 TMDL 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 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.

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 Machado Lake 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.

CEQA GROWTH-INDUCING GUIDELINES

Growth-inducing impacts are defined by the State CEQA Guidelines as:

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.

(CEQA Guidelines, Section 15126.2(d)).

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.

TYPES OF GROWTH

The primary types of growth that occur within the 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 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 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 County of Los Angeles is governed by the County of Los Angeles 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 TMDL area also have plans which direct land use development.

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.

POTENTIAL FOR COMPLIANCE WITH THE PROPOSED TMDL TO INDUCE GROWTH.

Direct Growth Inducement

Because the reasonably foreseeable methods of compliance with the proposed TMDL focus on lake management activities, non-structural BMPs and improvements to the stormdrain system which is located throughout the urbanized portion of the TMDL area, the 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 of devices 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 treatment devices and implement lake management activities. 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/implementation activities associated with the 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.

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.

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 hazards and increasing the aesthetic experience at the lake. 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.

STATEMENT OF OVERRIDING CONSIDERATIONS AND DETERMINATION

The Regional Board staff has balanced the economic, legal, social, technological, and other benefits of this proposed TMDL against the unavoidable environmental risks in determining whether to recommend that the Regional Board approve 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 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 Machado Lake. 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 and lake management activities 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, infrastructure maintenance and lake management. Routine construction and maintenance of power lines and storm sewer systems are regular and expected activities carried out by municipalities and county agencies throughout Los Angeles County. 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. In addition to storm drain upgrade projects, the TMDL may require projects typical of lake management activities, such as dredging or sediment capping to improve water quality. For these activities, there are mitigation measures available to reduce environmental impacts, and these measures are routine and already carried within Los Angeles County. Mitigation measures including but not limited to covering dredge piles and adhering to Material Safety Data Sheets instructions when handling chemicals, which may reduce environmental impacts to less than significant levels.

Specific projects to comply with this TMDL that may have a significant impact will be implemented by local agencies and 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 unmitigable 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, 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 at Machado Lake, 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 Machado Lake of approximately 7 years. 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 Machado Lake Pesticides and PCBs TMDL and this checklist provide the necessary information pursuant to Public Resources Code section 21159 to conclude that properly designed and implemented lake management activities and 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 those local agencies, the necessity of implementing the federally required TMDL and removing the pesticides and PCBs impairment from Machado Lake (an action required to achieve the express, national policy of the Clean Water Act) remains.

DISCUSSION OF ENVIRONMENTAL EVALUATION (Based on information in the Machado Lake Pesticides and PCBs TMDL Staff Report and Substitute Environmental Documents for the Machado Lake Pesticides and PCBs 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 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)).

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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