Substitute Environmental Documents for the Los Cerritos Channel Metals TMDL and San Gabriel River Metals and Selenium TMDL

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

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1. EXECUTIVE SUMMARY

The California Regional Water Quality Control Board, Los Angeles Region (Los Angeles Water Board) is the Lead Agency for evaluating the environmental impacts of the Total Maximum Daily Loads (TMDLs) for metals in the Los Cerritos Channel and the San Gabriel River and its tributaries (metals TMDLs). The San Gabriel River metals TMDL and Los Cerritos Channel metals TMDL were established by US EPA on March 26, 2007 and March 17, 2010, respectively.

This Substitute Environmental Document (SED) analyzes environmental impacts that may occur from reasonably foreseeable methods of implementing the metals TMDL. This SED is based on a revised proposed metals TMDL that will be considered by the Los Angeles Water Board and, if approved by the Los Angeles Water Board, implemented through an amendment to the Water Quality Control Plan for the Los Angeles Region (Basin Plan). The revised proposed metals TMDL is described in the revised Staff Report, revised Basin Plan Amendment, and tentative Board Resolution available on the Los Angeles Water Board website. This SED analyzes foreseeable methods of compliance with the metals TMDL and provides the public information regarding environmental impacts, mitigation, and alternatives in accordance with the California Environmental Quality Act (CEQA).

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)).

Water quality in Los Cerritos Channel and the San Gabriel River and its tributaries is limited by metals, as documented in current State of California 303(d) lists of impaired waterbodies. The San Gabriel River contains areas of high ecological significance and provides wildlife and aquatic life habitat in both the concrete-lined and soft-bottomed portions of the river. Elevated levels of metals in water endanger aquatic organisms and impair habitat. Much of the San Gabriel River Watershed is used for groundwater recharge and supports municipal water supply uses. The watershed is also subject to recreational use. The beneficial uses impaired by metals loadings in the San Gabriel River Watershed are those associated with aquatic life, wildlife, and water supply, including wildlife habitat (WILD), rare, threatened or endangered species (RARE), warm freshwater habitat (WARM), wetlands (WET), and groundwater recharge (GWR). The beneficial uses impaired by metals loadings in the Los Cerritos Channel are wildlife habitat (WILD), and intermittent beneficial uses for noncontact water recreation (REC2), and warm water habitat (WARM).The objective of the metals TMDLs is to restore the beneficial uses of Los Cerritos Channel and the San Gabriel River that are currently impaired by metals, in accordance with Clean Water Act section 303(d).

Metals TMDLs are 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), signed on March 22, 1999. This consent decree required that all TMDLs for the Los Angeles Region, for 1998 listed water, be adopted within 13 years. Because the State was not expected to re-circulate and adopt the metals TMDLs by the consent decree deadline, US EPA promulgated a metals TMDL for San Gabriel

River on March 26, 2007, and a metals TMDL for Los Cerritos Channel on March 17, 2010.

The metals TMDLs establish waste load allocations (WLAs) that will be used to develop effluent limits in National Pollutant Discharge Elimination System (NPDES) permits for discharges to the San Gabriel River and its tributaries and Los Cerritos Channel. The NPDES permittees that are assigned WLAs for the Los Cerritos Channel Metals TMDL include (1) enrollees under the Municipal Separate Storm Sewer System (MS4) permits for Los Angeles County and the City of Long Beach, (2) enrollees in the statewide general construction storm water NPDES permits and general industrial storm water NPDES permits, (3) the Caltrans storm water permit, and (4) other minor NPDES permits and general NPDES permits.

The NPDES permittees that are assigned WLAs for the San Gabriel River Metals TMDL include (1) enrollees under the Municipal Separate Storm Sewer System (MS4) permits for Los Angeles County, Orange County, and Long Beach, (2) enrollees in the statewide general and industrial storm water permits, (3) Caltrans, (4) power plants that discharge cooling water to the Estuary, (5) water reclamation plants (WRPs) operated by the County Sanitation Districts of Los Angeles County (CSDLAC), and (6) other minor and general permittees in the watershed.

Potential environmental impacts are most likely to occur due to implementation of WLAs assigned to the storm water permittees, power plants and WRPs. The other minor and general permittees can meet waste load allocations without the installation of pollution control equipment; thus no impacts would occur.

Potential compliance measures for the power plants include replacing cooling technologies or implementing other source control measures. It should be noted that the power plants are expected to be subject to CTR-based effluent limits when their NPDES permits are re-issued, regardless of whether the TMDL implementation plan is adopted. Furthermore, by complying with the State Water Resources Control Boards' Once-through Cooling Water Policy, it is expected that the TMDL WLAs will be attained.

Potential compliance measures for the WRPs include source reduction and advanced treatment. The WRPs are currently subject to freshwater CTR-based effluent limits. The proposed TMDL assigns WLAs to WRPs based on CTR saltwater criteria. WRPs may have to reduce copper concentrations in their effluent to meet revised effluent limits based on the proposed WLAs.

Potential compliance measures for the storm water permittees include a combination of non-structural and structural best management practices (BMPs). The BMPs and potential compliance approaches evaluated apply to the MS4 permittees, Caltrans, and general industrial and construction storm water permittees. Non-structural BMPs may include increased storm drain catch basin cleanings, improved street cleaning and educating industries of good housekeeping practices. Structural BMPs may include the installation of storm water treatment devices to reduce metals loadings, such as infiltration trenches and sand or organic filters, at critical points in the storm water conveyance system. Such devices may also incorporate surge control, such as underground storage vaults or detention basins. A diversion and treatment strategy for dry and/or wet-weather runoff may also be implemented to meet the TMDLs.

This SED analyzes three Program Alternatives and various implementation alternatives (Sections 4 and 5) that encompass actions within the jurisdiction of the Los Angeles Water Board and implementing municipalities and agencies. The SED analyzes the potential environmental impacts in accordance with significance criteria widely accepted by municipalities and government agencies in the San Gabriel River Metals TMDL and Los Cerritos Metal TMDL area for CEQA review. The TMDL does not specify types of projects, specific locations, or mitigation measures for those projects. Projects are specified, designed, constructed, operated, and mitigated for by the NPDES permittees. Consequently, this environmental analysis is structured in accordance with guidelines for a Tier 1 Program SED rather than a Tier 2 Project SED.

As discussed in this SED, California Water Code section 13360 prohibits the Regional Board from specifying the manner of compliance with any order. Methods of compliance and selection of specific BMPs and associated mitigation measures are the responsibility of the responsible agencies for implementing the metals TMDLs. Municipalities and agencies that will implement specific projects and BMPs may use this SED to help with the selection and approval of project alternatives. The implementing municipality or agency will be the lead agency and have responsibility for environmental review of the projects they determine necessary to implement the metals TMDLs.

Approval of projects (i.e., project alternatives or components of project alternatives) refers to the decision of either the implementing municipalities or agencies to select and carry out an alternative or a component of an alternative. (Section 5 of this SED summarizes the components that comprise the project alternatives analyzed in this SED). The components assessed at a project level have specific locations that will be determined by implementing municipalities and agencies. The project-level components will be subject to additional environmental review, including review by cities and municipalities implementing metals TMDL projects.

Many of the specific projects and BMPs analyzed in this SED will involve small construction projects and maintenance of storm drain infrastructure. Infrastructure maintenance and urban construction projects generate varying degrees of environmental impacts. The potential impacts can include, for example, noise associated with construction, air emissions associated with vehicles to deliver materials during construction, traffic associated with increased vehicle trips and where construction or attendant activities occur near or in thoroughfares, and additional light and glare. Additionally, maintenance of constructed BMPs may involve, for example, such consequences as additional traffic and air emissions from additional street sweeping and additional catch basin cleaning, need for additional landfill space to dispose of filtered material, and additional risk of flooding if storm water treatment devices are not properly maintained. These foreseeable impacts are analyzed in detail in Section 6 of this SED.

To address the environmental and nuisance impacts from these routine and essential activities, public works departments are required to employ a variety of techniques, “best management practices”, and other mitigation measures to minimize the impacts on the environment. Generally accepted and recognized mitigation measures for construction projects on the scale of these maintenance projects include, for example, such actions as the management of traffic by planning construction activities for certain times of the day, development of detailed traffic plans in coordination with police or fire protection authorities; mitigation of excessive noise by planning construction activities for certain times of the day, use of less noisy equipment, use of sound barriers; reduction of air

emissions by use of lower emissions vehicles. Numerous agencies such as Caltrans, CASQA, and WERF publish handbooks containing guidance on the selection, siting, design, installation, monitoring, and evaluation of storm water BMPs (Caltrans, 2002, 2003; CASQA, 2003a; CASQA, 2003b; WERF, 2005). These mitigation methods and BMPs are discussed in detail in Section 6 of this SED. Manuals are also available, which describe engineering and administration policies and procedures for construction projects (e.g., Caltrans, 2003). 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).)

These mitigation measures and best management practices 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. Indeed, typically, the construction of storm water treatment devices and diversion projects are undertaken by municipalities with a declaration by the relevant agency that their project falls under one or more exemptions from CEQA, that is, projects that the municipality has concluded, and the Resources Agency agrees, do not result in significant adverse environmental impacts. For example, in Santa Monica, a statutory notice of exemption was filed for a low flow diversion project to divert dry-weather storm drain flows via a berm to the sewer system (State Clearinghouse Number 2001078133). A categorical notice of exemption was filed for installation of stormwater infiltration BMPs at Sun Valley Paper Stock and Mid-City Iron & Metal in Los Angeles and Long Beach (State Clearinghouse Number: 2005038201). The City of Hermosa Beach filed a negative declaration for the Hermosa Strand Infiltration Trench project to divert storm water run-off to an infiltration trench installed below-grade (approximately 14 feet deep) along the Strand walkway (State Clearinghouse Number 2007061008).

This SED finds foreseeable methods to comply with the metals TMDLs focus on improvements to the storm drain system, power plant cooling water discharge structures, and advanced treatment at WRPs, which do not cause significant impacts that cannot be mitigated through commonly used mitigation measures. The SED finds that environmental impacts from both metals TMDLs are those impacts related to installation and maintenance of structural BMPs, cooling water technologies, and advanced wastewater treatment facilities. The SED identifies mitigation methods for impacts with potentially significant effects and finds that those methods can mitigate potentially significant impacts to levels that are less than significant. The SED can be used by implementing municipalities and agencies to expedite any additional environmental analysis of specific projects required to comply with the San Gabriel River metals TMDL and Los Cerritos Channel metals TMDL.

The regulatory requirements for the metals TMDLs are provided in Section 2. The program objectives, including the project purpose, are discussed in Section 3. Section 4 provides the alternatives analysis, including a discussion of the program level alternatives for the metals TMDLs and the implementation alternatives to achieve compliance with waste load allocations. Section 5 provides a detailed description of implementation alternatives. Section 6 contains site specific environmental impacts and the CEQA Checklist and Determination with in-depth analysis of each resource area. Other environmental considerations are discussed in Section 7. A list of references refers to supporting documentation for this SED.

2. REGULATORY REQUIREMENTS FOR ENVIRONMENTAL IMPACT ANALYSIS OF THE TMDL

This section presents the regulatory requirements for assessing environmental impacts of a TMDL implemented through a Basin Plan Amendment at the Regional Board. These TMDLs for metals in the San Gabriel River and its tributaries and metals in Los Cerritos Channel are evaluated at a program level of detail under a Certified Regulatory Program and the information and analyses are presented in these Substitute Environmental Documents as discussed in this section.

2.1 EXEMPTION FROM CERTAIN CEQA REQUIREMENTS

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

2.2 CALIFORNIA CODE OF REGULATIONS AND PUBLIC RESOURCES CODE REQUIREMENTS

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

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

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

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

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

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

(1) Environmental, economic, and technical factors,

(2) Population and geographic areas, and

(3) Specific sites.

2.3 PROGRAM AND PROJECT LEVEL ANALYSES

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

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

2.4 PURPOSE OF CEQA

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

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

> "As we have stated previously, "[our limited function is consistent with the principle that ""[t]he purpose of CEQA is not to generate paper, but to compel

> government at all levels to make decisions with environmental consequences in mind. . . .”” (City of Santee v. County of San Diego (1989) 214 Cal.App.3d 1438, 1448 [263 Cal.Rptr. 340]; quoting Laurel Heights I, supra, 47 Cal.3d at p. 393.) “We look ‘not for perfection but for adequacy, completeness, and a good faith effort at full disclosure.’ (Guidelines, §§ 15151.)” (City of Fremont v. San Francisco Bay Area Rapid Transit Dist., supra, 34 Cal.App.4th at p. 1786.)"

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

In this document, the Regional Board staff has strived to perform a good faith effort at full disclosure of the reasonably foreseeable environmental impacts that could be attendant with the proposed metals TMDL. Our analysis and conclusions follow.

3. TMDL OVERVIEW AND PROGRAM OBJECTIVES

3.1 INTRODUCTION – LEGAL BACKGROUND

The San Gabriel River metals TMDL and Los Cerritos Channel metals TMDL were designed to attain the water quality standards for metals in San Gabriel River and its tributaries, and Los Cerritos Channel. The TMDLs were prepared pursuant to state and federal requirements to preserve and enhance water quality in the San Gabriel River and tributaries and Los Cerritos Channel. 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 for surface and ground water, and numeric and narrative objectives necessary to support beneficial uses and the state's antidegradation policy. Such standards are mandated for all waterbodies within the state under the Porter-Cologne Water Quality Act. In addition, the Basin Plan describes implementation programs to protect all waters in the region. The Basin Plan implements the Porter-Cologne Water Quality Control Act (commencing at Section 1300 of the "California Water Code") and serves as the State Water Quality Control Plan applicable to the San Gabriel River and Los Cerritos Channel, also requiring water quality standards for all surface waters as required pursuant to the federal Clean Water Act (CWA).

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

As part of California's 1998, 2002, and 2004/2006 303(d) Lists, several reaches and tributaries of the San Gabriel River are identified as impaired due to metals. Los Cerritos Channel is also identified on the 303(d) lists as being impaired due to metals. These reaches and tributaries of the San Gabriel River and Los Cerritos Channel require development of TMDLs.

TMDLs must be established at a level necessary to attain 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 the impaired reach or to an upstream tributary. TMDLs are generally established in California through the basin planning process, i.e., an amendment to the basin plan to

incorporate a new or revised program of implementation of the water quality standards, pursuant to Water Code section 13242. The process that the Regional Board uses for establishing TMDLs is the same whether under section 303(d)(1) or 303(d)(3).

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

A consent decree between the USEPA, the Santa Monica BayKeeper and Heal the Bay, represented by the Natural Resources Defense Council (NRDC), was signed on March 22, 1999. This consent decree requires that all TMDLs for the Los Angeles Region, for 1998 listed water bodies, be adopted within 13 years. San Gabriel River Reach 2 is on the 1998 list for lead and is therefore subject to the consent decree. A TMDL was required for this reach by March 2007. A TMDL for copper, lead, and zinc in Los Cerritos Channel was required by March 2012.

The implementation plans for the metals TMDLs are Basin Plan Amendments and are subject to the 2001 provision of the Public Resources Code Section 21083.9 that requires CEQA Scoping to be conducted for Regional Projects. CEQA Scoping involves identifying a range of project/program related actions, alternatives, mitigation measures, and significant effects to be analyzed in an EIR or its functionally equivalent document. On December 12, 2005, a CEQA Scoping hearing was held to present and discuss the foreseeable potential environmental impacts of compliance with the San Gabriel River metals TMDL. On March 28, 2013, a CEQA Scoping hearing was held to present and discuss the foreseeable potential environmental impacts of compliance with the Los Cerritos Channel and San Gabriel River metals TMDLs. Notices of the CEQA Scoping hearings were sent to interested parties including cities and/or counties with jurisdiction in or bordering the San Gabriel River and Los Cerritos Channel watersheds. Input from all stakeholders and interested parties was solicited for consideration in the development of the CEQA substitute environmental documents.

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

3.2 TMDL GOALS AND WATER QUALITY OBJECTIVES

The Basin Plan designates beneficial uses of waterbodies, establishes water quality objectives for the protection of these beneficial uses, and outlines a plan of implementation for maintaining and enhancing water quality. The proposed amendment would incorporate into the Basin Plan a TMDL implementation plan for metals in the San Gabriel River, and a separate implementation plan for metals in Los Cerritos Channel.

The beneficial uses of the San Gabriel River that are impaired by metals loadings are those associated with aquatic life, wildlife, and water supply, including wildlife habitat (WILD), rare, threatened or endangered species (RARE), warm freshwater habitat (WARM), wetlands (WET), and groundwater recharge (GWR). The San Gabriel River contains areas of high ecological significance and provides wildlife and aquatic life habitat in both the concrete-lined and soft-bottomed portions of the river. The beneficial uses impaired by metals loadings in the Los Cerritos Channel are wildlife habitat (WILD), and intermittent beneficial uses for noncontact water recreation (REC2), and warm water habitat (WARM). Elevated levels of metals in water endanger aquatic organisms and impair habitat. The metals subject to the metals TMDLs are toxic pollutants, and the existing water quality objectives for these metals reflect national policy that the discharge of toxic pollutants in toxic amounts be prohibited. The federal water quality criteria established by the California Toxics Rule (CTR) serve as the numeric water quality objectives for the Los Angeles Region. The CTR criteria apply at all times during wet and dry weather to inland surface waters.

The TMDL sets the numeric water quality targets based on CTR criteria in order to implement the Basin Plan's narrative water quality objectives most pertinent to the metals TMDL:

> *Surface waters shall not contain concentrations of chemical constituents in amounts that adversely affect any designated beneficial use.*
>
> *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.*
>
> *Toxic substances shall not be present at levels that will bioaccumulate in aquatic life resources to levels which are harmful to aquatic life or human health*.

3.3 PROJECT PURPOSE

The Regional Water Board proposes amendments to the Basin Plan to incorporate TMDL implementation plans to reduce metals in the San Gabriel River and its tributaries and in Los Cerritos Channel.

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 metals throughout the San Gabriel River and Los Cerritos Channel watersheds; and

- To establish TMDL implementation plans, including implementation schedules for the San Gabriel River and Los Cerritos Channel.

The purpose of these amendments is to incorporate implementation plans for TMDLs that were previously established by U.S. EPA. On March 26, 2007, U.S. EPA established the San Gabriel River Metals TMDL. On March 17, 2010, U.S. EPA established the Los Cerritos Channel Metals TMDL. The U.S. EPA-established TMDLs include the problem statement, numeric targets, source analysis, loading capacity, load allocations, waste load allocations, and margin of safety. An implementation plan is not a required element of a TMDL established by U.S. EPA; therefore, these TMDLs do not include implementation plans or schedules for implementation. The proposed amendments incorporate implementation plans for the San Gabriel River Metals TMDL and Los Cerritos Channel Metals TMDL.

4. ALTERNATIVES ANALYSIS

The purpose of an alternatives analysis is to determine if feasible alternatives exist that would result in less significant impacts than the proposed TMDL implementation plans, and that would achieve the project's purposes.

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.)

4.1 DESCRIPTION OF PROGRAM ALTERNATIVES

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 implementation plans as they are proposed for Regional Board adoption,
2) A TMDL implemented through an memorandum of understanding (MOU), and
3) A no program alternative in which the TMDL established by US EPA remains in place with no associated implementation plan or schedule.

The components assessed at a program level generally are program elements that would be implemented as part of the metals TMDL, but these elements do not have specific locations or design details identified. The components assessed at a project

level have specific locations which will be determined by implementing municipalities and agencies. The specifics of the many projects which would make up a program alternative are discussed in the substitute environmental documents and include BMPs, alternative power plant cooling water strategies, and advanced wastewater treatment that would reasonably be implemented under the metals TMDL program alternatives. The project-level components will be subject to additional future environmental review, including review by cities and municipalities implementing metals TMDL projects. Section 5 of this SED includes an extensive discussion of the project alternatives.

4.2 ANALYSIS OF PROGRAM ALTERNATIVES

Alternative 1 - Regional Board TMDL Implementation Plans

Description of Alternative 1

This program alternative is based on the TMDLs that have been established by U.S. EPA. The proposed TMDL implementation plans apply to the San Gabriel River and Los Cerritos Channel.

Table 4.1. Pollutant-Waterbody Combinations Addressed by TMDLs

Waterbody	Pollutants
San Gabriel River Reach 2	Lead
San Jose Creek	Selenium
Coyote Creek	Copper and Lead
San Gabriel River Estuary	Copper
Los Cerritos Channel	Copper, lead, and zinc

The implementation plans for the EPA-adopted TMDLs are established through amendments to Basin Plan and implemented through NPDES permits. WLAs are assigned to municipal storm water discharges, general industrial and construction storm water discharges, five WRPs, two power plants, and other NPDES permittees located in impaired reaches and reaches upstream of impaired reaches. This alternative provides a program for addressing the adverse impacts of metals through a progressive reduction in metals discharges to the San Gabriel River and Los Cerritos Channel watersheds through a 16-year schedule. This schedule is both reasonable and as short as practicable. The implementation schedules, once they are incorporated into the Basin Plan, will be considered by NPDES permit writers when developing permit limits that are adopted in separate subsequent actions by the Regional Board.

Potential Environmental Impacts of Alternative 1

Potential environmental impacts associated with this alternative are related to the implementation of WLAs assigned to storm water dischargers, WRPs, and power plants. Storm water WLAs will be implemented through the Los Angeles County, Orange County, and Long Beach MS4 permits and the Caltrans statewide storm water permit. Although the Regional Board cannot mandate the manner of compliance (CWC section 13360), foreseeable environmental impacts from methods of compliance for storm water dischargers and power plants are well known.

During the development of the TMDL, the reasonably forseeable means of compliance were examined. Potential compliance measures for the power plants include replacing cooling technologies. Potential compliance measures for WRPs include source control and advanced treatment. Potential compliance measures for the storm water permittees include a combination of non-structural BMPs (including source control measures) and structural BMPs. A diversion and treatment strategy for dry and/or wet-weather runoff may also be implemented to meet the TMDL.

Potential adverse impacts to the environment stem principally from the installation, operation, and maintenance of the structural BMPs and advanced wastewater treatment at WRPs, from the infiltration of storm water into the ground, and from the use of alternative cooling technologies by the power plants. The installation of implementation projects are of relatively short duration and typical of "baseline" construction and maintenance projects that occur presently in the San Gabriel River and Los Cerritos Watersheds. The infiltration of storm water to the ground is a positive impact and any associated negative impacts can be avoided or mitigated by proper design, siting, and maintenance. The use of alternative cooling technologies by the power plants is also a positive impact because, in addition to reducing copper loading to the Estuary, it would return the Estuary to a more natural mixing between the ocean and the river. In addition, the Regional Board determined that any significant impacts can be mitigated or that there are alternative means of compliance available.

Analysis of Alternative 1

This alternative is reasonable and feasible. It accomplishes the project's purposes, as described in Section 3.3, Project Purpose. It also achieves the Regional Board's goal of removing metals impairments from the San Gabriel River and Los Cerritos Channel over a reasonable implementation schedule.

Alternative 2 - TMDL Implemented Through Memorandum of Understanding

Description of Alternative 2

This alternative involves the adoption of voluntary efforts to achieve compliance with the TMDLs, through a memorandum of understanding or other mechanism, rather than through NPDES permit limits. This alternative is included because it has been suggested by commentors to a number of other TMDLs.

Potential Environmental Impacts of Alternative 2

Neither voluntary measures, nor a memorandum of understanding, as opposed to a NPDES permit or other Regional Board order, would alter the manner in which compliance could be achieved. Those implementing the TMDL would still be required to implement the same types of structural and non-structural BMPs as discussed under Alternative 1.

Analysis of Alternative 2

This alternative is not recommended because it is not likely to attain standards, and if it did, it would not lessen any environmental impacts from implementation of the TMDLs.

The suggestion that the Regional Board rely upon an MOU instead of a regulation is directed to the form of the regulation as opposed to the environmental impacts from the regulation. CEQA is not concerned with an examination of alternatives that might obviate Regional Board regulatory action relating to waters under another agency's concurrent jurisdiction, unless, that is, such alternatives are likely to result in less significant environmental impacts than the proposed project. This alternative would not result in any less significant impacts, unless of course, those subject to the MOU continue to fail to implement controls to abate the metals impairments. In that event, no impacts would occur from the project, but only because the project would not be implemented. That would not achieve the project purposes of restoring the water bodies, eliminating the impairments, and attaining water quality standards.

All potential impacts emanating from Alternative 1 result from the implementation actions selected to comply with the TMDL. Neither voluntary measures, nor a memorandum of understanding, as opposed to a Regional Board's regulation, permit, or order would in any way alter the manner in which compliance could be achieved. Those implementing the TMDL would still be required to implement the same types of structural and non-structural BMPs, including filters and infiltration devices, improved street sweeping, and source reduction, that were discussed in CEQA substitute documents, whether they are required by an MOU or other voluntarily undertaken or non-regulatory efforts. Indeed the TMDL as proposed preserves broad discretion on the manner of compliance, which of course, is mandated by CWC section 13360.

This alternative is also not legal and therefore not feasible. Federal regulations require that NPDES permits be consistent with the assumptions and requirements of available waste load allocations. Accordingly, the Regional Board may not forgo implementing WLAs in NPDES permits.

Alternative 3 – USEPA TMDL

Description of Alternative 3

This program alternative is based on the TMDLs that were established by US EPA on March 26, 2007 and March 23, 2010. The technical portions and WLAs of this TMDL Program Alternative will the same as Program Alternative 1. However, because the EPA-established TMDLs 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, or within five years.

Potential Environmental Impacts of Alternative 3

Like Alternative 1, this TMDL program alternative also anticipates compliance through installation of structural devices (infiltration devices, filters) and non-structural methods (increased street sweeping, source control). Potential adverse impacts to the environment likewise stem principally from the installation, operation, and maintenance of the structural BMPs and advanced wastewater treatment at WRPs, from the infiltration of storm water into the ground, and from the use of alternative cooling technologies by the power plants. The installation of implementation projects are of relatively short

duration and typical of “baseline” construction and maintenance projects that occur presently in the San Gabriel River and Los Cerritos Watersheds. The infiltration of storm water to the ground 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 3

If the USEPA-established TMDLs remained in place without any implementation plans, any adverse impacts would be more significant, not less. The same WLAs 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 16 years. Alternative 3, 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 3 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.

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 major project purposes.

Either Alternative 1 or 3 will restore beneficial uses in the San Gabriel River and Los Cerritos Channel watersheds and attain water quality standards by removing metals from the San Gabriel River and its tributaries and the Los Cerritos Channel. As such, either metals TMDL Alternative 1 or 3 represents a benefit to the environment. The key environmental difference between program Alternatives 1 and 3 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 3, therefore would foreseeably result in more significant impacts, not less. Alternative 1 is therefore the recommended alternative.

5. DESCRIPTION OF IMPLEMENTATION ALTERNATIVES

This Section of the SED begins with a description of the stormwater system in the metals TMDL area and a description of the type of sites where structural devices or controls might be placed in compliance with the metals TMDL. The implementation alternatives are then discussed.

The Regional Board is prohibited from specifying the manner of compliance with its orders (Water Code § 13360), and accordingly, the actual compliance strategies will be selected by the local agencies and other permittees. Although the Regional Board does not mandate the manner of compliance, foreseeable methods of compliance are well known. The most likely measures of compliance for storm water dischargers include structural methods such as infiltration devices and sand filters, as well as non-structural alternatives such as increased street sweeping and good housekeeping practices. WRPs may implement source reduction strategies to reduce copper in the influent or advanced treatment technologies such as precipitation, carbon adsorption, or reverse osmosis. Potential compliance measures for the power plants include implementing alternative cooling technologies, or implementing other source control measures. The project-level components will be subject to additional future environmental review. A project level environmental analysis must be performed by the local agencies that are required to implement the requirements of the TMDL (Pub. Res. Code § 21159.2.)

5.1 STORM DRAIN SYSTEMS

Underground storm drains 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.

Storm water treatment BMPs can be placed either on-line or off-line. On-line BMPs are located within the storm drain system and must convey all runoff. These systems must contain a bypass device to allow flows that exceed the design capacity of the BMP to pass through without treatment. Off-line BMPs are located outside the storm drain

system and can treat larger storm volumes, but still can allow for diversion of peak flows around the BMP. (Caltrans, 2002)

Some structural devices likely to be used for compliance with the metals TMDL, such as sand filters and other flow through devices, are devices that will be installed in existing storm drains. Older storm drains may be limited in expansion capability and maintenance right of way and the complying municipalities and agencies must consider these factors when designing and siting new metals removal devices.

Among factors to consider when designing and siting devices is drain capacity. For instance, if a structural device is to be installed mid-drain, the storm drain system must have sufficient capacity, or the storm drain must be modified to maintain sufficient capacity. The smaller the amount of flow a retrofitted device or system must treat the less hydraulic impact it will have on the storm drain system as a whole.

5.2 STRUCTURAL DEVICES FOR STORM WATER TREATMENT

Structural BMPs may include the installation of storm water treatment devices specifically designed to reduce metals loadings, such as infiltration trenches and sand or organic filters, at critical points in the storm water conveyance system. Such devices may also incorporate surge control, such as underground storage vaults or detention basins. A diversion and treatment strategy for dry and/or wet-weather runoff may also be implemented to meet the TMDL. However, the Regional Board supports in concept an integrated water resources approach to improving water quality that focuses on the beneficial re-use of storm water to preserve local groundwater resources and reduce the need for imported water where feasible.

5.2.1 INFILTRATION TRENCHES

Infiltration trenches store and slowly filter runoff through the bottom of rock-filled trenches and then through the soil (Figures 5-1 and 5-2). Infiltration trenches can be designed to treat any amount of runoff, but are ideal for treating small urban drainage areas less than five to ten acres. Soils and topography are limiting factors in design and siting, as soils must have high percolation rates and groundwater must be of adequate depth. The pollution removal processes in infiltration systems depend on soil characteristics such as pH, redox potential, clay mineralogy, organic matter, microbial populations and temperature, as well as physical characteristics. Pollutants are removed via sorption, precipitation, trapping, straining and bacterial degradation and transformation (US EPA, 2004).

Some of these constituents can be transported to the groundwater, but many constituents will attenuate in the soil and subsurface layers (CASQA, 2003b). Potential impacts to groundwater by infiltration trenches could be avoided by proper design and siting with adequate separation to groundwater and soils with high sorption rates.

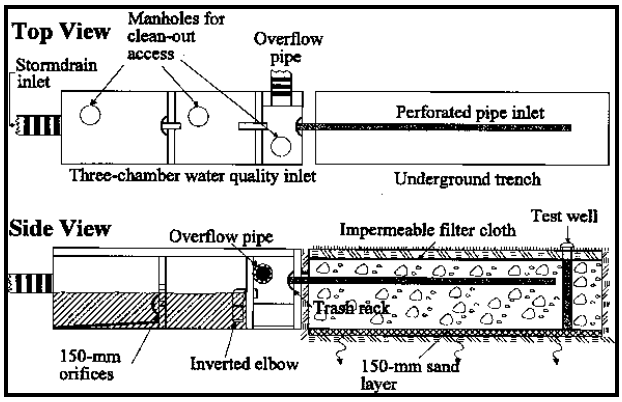
Infiltration trenches are reported to achieve 75 to 90% suspended solids removal and 75-90% metals removal by US EPA and the Federal Highway Administration (FHWA, 2007). The greatest sorption of metals occurs in soils with a high content of organic matter (US EPA, 2004).

Assuming 1300 square feet of area is needed to store runoff from one acre, each trench would have a footprint of approximately 6,500 square feet (FHWA, 2007). Infiltration trenches are suited for low- to medium-density residential and commercial developments. They can be incorporated in multi-use areas such as along parking lot perimeters, parking lots, residential areas, commercial areas, and open space areas. They are particularly suitable for retrofitting into existing developments or in conjunction with other BMPs (US EPA, 2004). Infiltration trenches have a small footprint and are typically less than 10 feet deep.

Figure 5.1. Infiltration Trench

Source: CASQA Stormwater BMP Handbook, 2003b, USEPA National Menu of BMPs

Figure 5.2. Infiltration Trench



Source: FHWA: Stormwater Best Management Practices in an Ultra-Urban Setting

5.2.2 MEDIA FILTERS

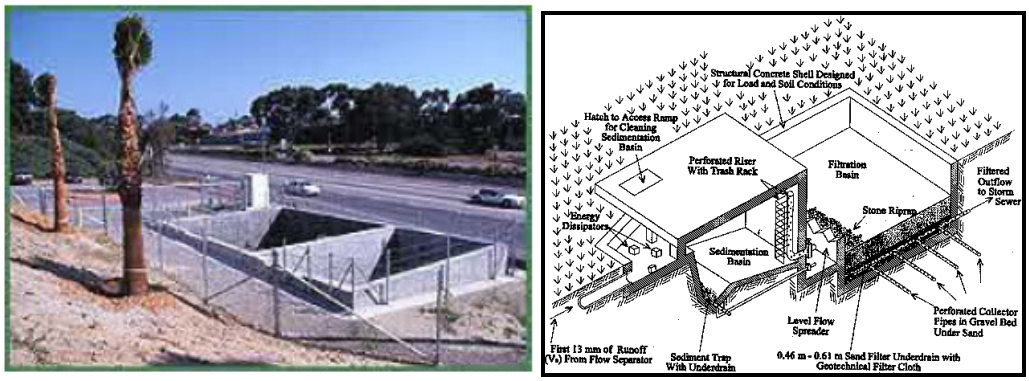
Media filters work by a combination of sedimentation and filtration. Runoff is temporarily stored in a pretreatment chamber or sedimentation basin, then flows by gravity or is pumped into a sand filter chamber. The filtered runoff is then discharged to a storm drain or natural channel. There are two types of media filters: 1) underground filters (Delaware or D.C. filters), which are installed underground and suited to treat drainage areas of approximately one to two acres and 2) aboveground filters (Austin filter), which are installed at-grade and suited to larger drainage areas up to 50 acres. The underground

filter is especially well adapted for applications with limited land area and is independent of soil conditions and depth to groundwater. However, both approaches must consider the imperviousness of the drainage areas in their design.

U.S. EPA estimated a 70% removal of total suspended solids and 45% removal of lead for both types of media filters. FHWA reported high sediment and lead removal, but low copper removal for Austin sand filters and high sediment and moderate to high metals removal for Delaware sand filters (US EPA, 2007).

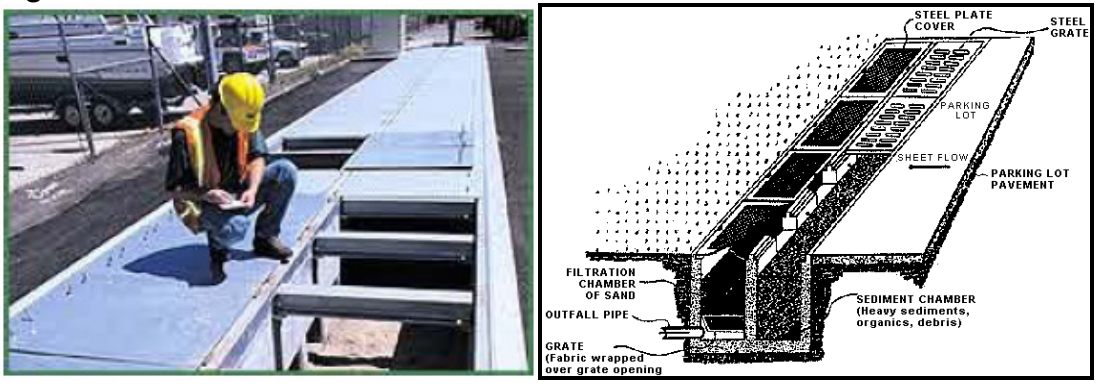
Media filters can be placed on or off line (Washington, 2005). It is common for surface filters to be placed offline while underground filters be placed online. Media filters can be designed to divert flows in excess of the filter's capacity by means of an overflow weir (FHWA, 2007). A surface filter requires a footprint of approximately 2500 square feet to treat a 25 acre area (Figure 5-3). A subsurface filter requires approximately 700 square feet to treat drainage from a 2-acre area and the size and shape are flexible because the filter is installed below ground (Figure 5-4). Media filters have a small footprint and are typically less than 10 feet deep.

Figure 5.3. Austin Sand Filter



Source: Caltrans Storm Water Quality Handbooks: Project Planning and Design Guide, FHWA: Stormwater Best Management Practices in an Ultra-Urban Setting

Figure 5.4. Delaware Sand Filter



Source: Caltrans Storm Water Quality Handbooks: Project Planning and Design Guide, FHWA: Stormwater Best Management Practices in an Ultra-Urban Setting

5.2.3 DIVERSION AND TREATMENT

The diversion and treatment strategy includes the installation of facilities to provide capture and storage of dry and/or wet-weather runoff and diversion of the stored runoff to a wastewater collection system for treatment. A small, dedicated runoff treatment facility or alternative BMPs may be implemented to meet the TMDL requirements.

The volume of flow requiring storage and treatment would have to be estimated in order to size the storage facilities, estimate diversion flow rates, and determine the collection system and treatment capacities needed to accommodate these diverted flows. Wet-weather flows beyond the capacities of these facilities would be bypassed. However, a portion of these larger storm events would still be captured and treated, thereby eliminating the metals loading of small storms and reducing those of larger storms. Overflows from these systems could be routed through structural BMPs designed to remove sediment contaminated with metals for further reduction of metal loads.

One example of a treatment facility is the Santa Monica Urban Runoff Recycling Facility (SMURRF), which treats up to 500,000 gallons of runoff per day and receives flows from the Pico-Kenter and Pier Storm drains, which drain 4,200 and 900 acres, respectively. The facility has a small footprint of 1200 square feet and its design includes educational materials about local history, culture and ecology and the water treatment process (Santa Monica, 2007).

Figure 5.5. Santa Monica Urban Runoff Recycling Facility (SMURRF)

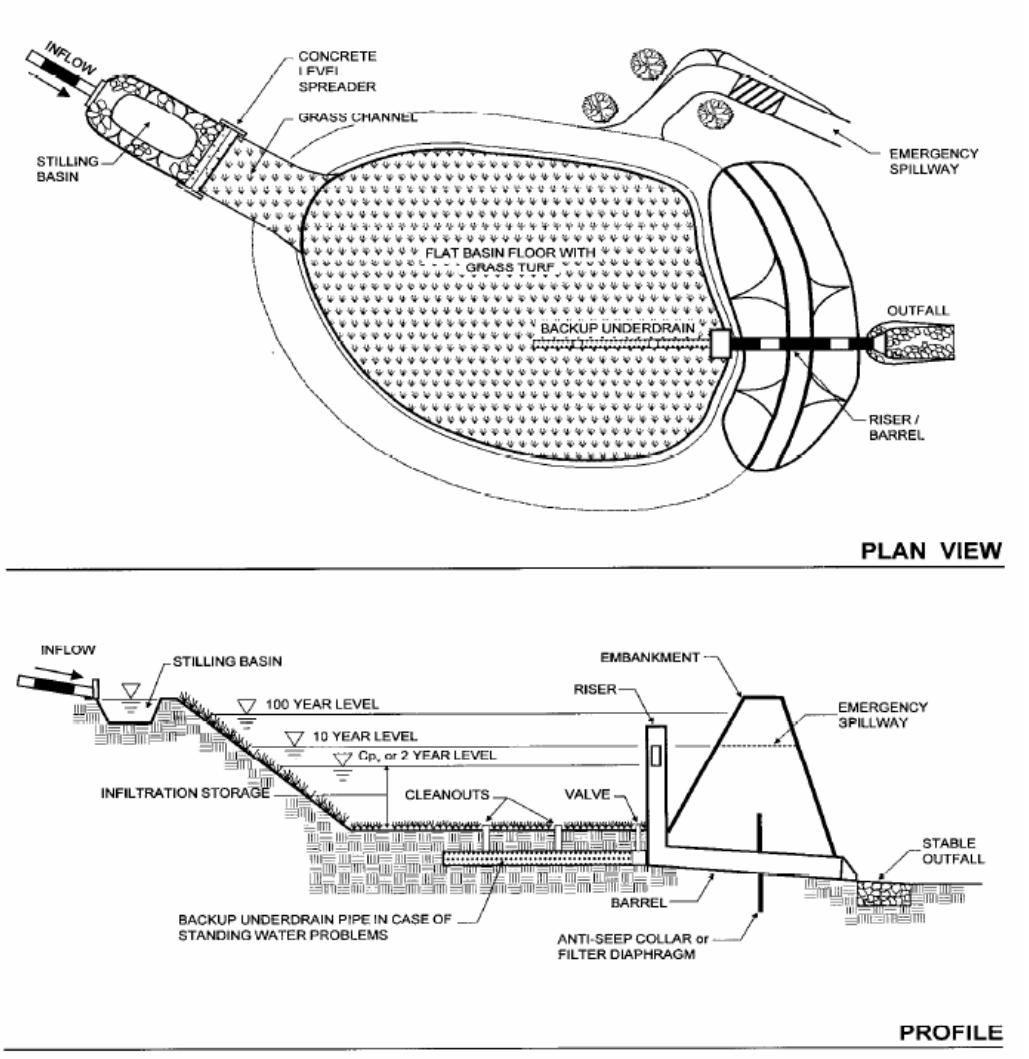
Source: City of Santa Monica, 2007

5.2.4 REGIONAL INFILTRATION SYSTEMS

A regional infiltration facility is generally a large basin capable of detaining the entire volume of a design storm and infiltration volume over a specified period. This is primarily accomplished by volume reduction to receiving waters; by impounding water and allowing it to slowly percolate into surface soil and eventually to groundwater. These facilities can be applied as a stand-alone treatment features for bacterial control on a subwatershed scale. In the event of a large storm, some flow would bypass infiltration and discharge to the receiving water untreated. However, treatment of a large

percentage of flow would still be achieved. Application of a regional facility depends on the suitability of soils for infiltration and appropriately- located open space.

Figure 5.5a Diagram of Infiltration Basin



Source: CASQA Storm water BMP Handbook, 2003b, USEPA National Menu of BMPs

5.2.5 Regional Detention Facility

This type of facility consists of large basins equipped with outlet structures that regulate rates of release. It can be used upstream of an infiltration facility, constructed wetlands

or disinfection plants to equalize flows and reduce sediment loads. These basins can be shallow, lined with vegetation and separated into multiple bays to improve their water quality functions; unlike infiltration systems, they do not require favorable soils. Detention facilities can also be deep, steep-wall basins, or underground vaults when space is a limiting factor. However, they are not effective as a stand-alone treatment option for bacteria.

5.2.6 Regional Natural Treatment Systems (NTS)

Regional NTS are vegetated treatment systems constructed, designed and maintained primarily for water quality treatment. Constructed wetlands imitate processes carried out by natural wetlands and waste water treatment plants. Constructed wetlands can be applied either as an inline or offline facility or can be integrated into other habitat enhancement projects. The two most common regional NTS are free surface flow (FSF) and sub-surface flow (SSF) wetlands. FSF wetlands are characterized by shallow ponded water at varying depths above the ground surface; solar irradiation is supposedly the process involved in bacterial removal in this type of wetland. For the SSF wetlands, water flows through the sub-surface soil matrix, rarely surfacing; the presence of anoxic zones contribute to the bacterial removal mechanism. This method requires comparatively large areas of relatively flat land to mimic natural function. Also these facilities are not intended to provide stand-alone treatment of storm water runoff. Often a detention facility can be integrated upstream to mitigate peak flows and provide a more steady inflow. Also, biofiltration facilities, media filters or sedimentation basins could be utilized to reduce sedimentation loads and further provide longevity and better performance of the facility.

5.3 NON-STRUCTURAL CONTROLS

Non-structural BMPs may include increased storm drain catch basin cleanings, improved street cleaning and educating industries of good housekeeping practices. Non-structural controls provide several advantages over structural BMPs. They offer other societal benefits associated with reducing litter in our city streets, parks and other public areas. They can typically be implemented in a relatively short period of time and the required capital is generally less than structural BMPs. However, the labor costs associated with nonstructural controls may be higher, and they may be more costly in the long-term.

5.3.2 STREET SWEEPING

Street sweeping minimizes metals loading to the river by removing sediment-bound metals from streets and curbs (Figure 5-6). Maintaining a regular street sweeping schedule reduces the buildup of sediment-bound metals on streets and prevents sediment-bound metals from entering catch basins and the storm drain system. Street sweeping can also improve the appearance of roadways and urban areas.

Figure 5.6 Street sweeper

Source: US EPA, 2007

There are three types of street sweepers: mechanical, vacuum filter, and regenerative air sweepers (US EPA, 2007). Mechanical sweepers use a broom to remove particles from the street curb and a water spray to control dust. Vacuum-assisted sweepers also use brooms to remove particles. However, the removed particles are saturated with water and transported by a vacuum intake to the hopper. A continuous filtration system prevents very fine particulate matter from leaving the hopper and trailing on the street behind the sweeper. Regenerative air sweepers blow air onto the pavement and immediately vacuum it back to entrain and capture accumulated sediments. A dust separation system regenerates air for blowing back onto the pavement (FHWA, 2007).

No definitive independent studies have yet been staged to determine the best sweeping system (US EPA, 2007). However, it is recommended that local agencies use a combination of street sweeper types to maximize efficiency (CASQA, 2003a). In the Los Angeles Region, use of certain sweeper types is dictated by South Coast Air Quality Management District Rule 1186, which requires local agencies to acquire or use only PM10 certified sweepers beginning January 1, 2000. Furthermore, Rule 1186.1 requires local agencies to acquire alternative fuel or less polluting street sweepers beginning July 1, 2002 (SCAQMD, 2006).

Increasing the frequency of street sweeping in areas with high traffic volume and metals loading will further reduce metals loading to the river. Further consideration should be given to street sweeping before the rainy season begins. A successful street sweeping program includes accurate recordkeeping of curb-miles swept, proper storage and disposal of street sweepings, regular equipment maintenance, and parking policies that restrict parking in problematic areas and notify residents of sweeping schedules. (CASQA, 2003a). Using modern and efficient street sweepers may reduce the need for other structural storm water controls and may prove to be more cost-effective than certain structural controls, especially in more urbanized areas with greater areas of pavement (US EPA, 2007).

5.3.3 STORM DRAIN CLEANING

Routine cleaning of the storm drain system reduces the amount of metals entering the river and ensures the flood control capacity of the system (Figure 5-7). Cleanings may

occur manually or with eductors, vacuums, or bucket loaders. A successful storm drain cleaning program includes regular inspection and cleaning of catch basins and storm drain inlets, increased inspection and cleaning in areas with high metals loading, accurate recordkeeping, cleaning immediately prior to the rainy season, and proper storage and disposal of collected material (CASQA, 2003a).

Figure 5.7. Catch Basin cleaning

Source: CASQA, 2003a

5.3.4 PUBLIC EDUCATION

Public education can be an effective implementation alternative to reduce the amount of metals pollution entering the river. The public is often unaware that what is disposed on the street ends up in receiving waters.

Community outreach is one way to educate the public about the effects of watershed activities on the quality of receiving waters. Local agencies can provide educational materials to the public via television, radio, and print media, distribution of brochures, flyers, and community newsletters, information hotlines outreach to educators and schools, community event participation, and support of volunteer monitoring and cleanup programs. Storm drain inlet stenciling is another means of educating the public about the direct discharge of storm water to receiving waters and the effects of littering and dumping on receiving water quality. Stenciling can be conducted in partnership with other agencies and organizations to garner greater support for educational programs (US EPA, 2005).

5.4 IMPLEMENTATION ALTERNATIVES FOR POWER PLANTS

Currently, two power plants draw in water from the nearby Los Cerritos Watershed Management Area and discharge into the San Gabriel River estuary. The Alamitos plant draws in water from Los Cerritos Channel and is permitted to discharge up to 1,283 MGD. The Haynes plant draws in water from Alamitos Bay and is permitted to discharge up to 1,014 MGD.

5.4.1 ALTERNATIVE COOLING TECHNOLOGIES FOR POWER PLANTS

The major categories of cooling systems in power generating plants are once-through systems, recirculating wet systems, and dry systems. In once-through systems, water is withdrawn from a source in the environment, passed through a steam condenser and returned to the source. No water is consumed within the cooling system, but the evaporation rate in the receiving water is slightly higher as a result of the heated discharge. This is the current cooling scenario for the two power plants discharging to the Estuary.

Alternatively, these power plants could use recirculating wet systems or dry systems to reduce or eliminate the amount of intake water required to cool the generating plants, and thus the amount of water and associated copper pollution discharged to the Estuary. In recirculating wet systems, a smaller amount of water is taken into the plant, which is evaporated in mechanical or natural draft cooling towers. The intake water is circulated continuously through the cooling system and must be replenished to replace the water lost to evaporation and blowdown. In dry systems, air-cooled equipment discharges rejected heat to the atmosphere by heating the air via direct or indirect systems. Direct systems use air-cooled condensers and indirect systems use watercooled surface condensers, and air-cooled heat exchangers (EPRI, 2002).

On May 4, 2010, the State Water Resources Control Board adopted a policy regulating the use of seawater for cooling purposes at power plants in California (Once-through Cooling Policy). The 19 power plants that are regulated by the Policy can choose how they plan to comply with the Policy's required 93 percent reduction in their use of seawater. The compliance dates for Haynes Generating Station Units 5 & 6 and Alamitos Generating Station are December 31, 2013 and December 31, 2020, respectively.

The Haynes Generating Station is in the process of replacing two generating units (Haynes Units 5 and 6) that use ocean water cooling with six 100 megawatt fast start natural gas combustion turbines. The turbines will use "dry cooling," eliminating the use of ocean water for these units. These two generating units are expected to be in use by the end of 2013. The Haynes Repowering Project is the first of a series of repowering projects designed to eliminate the use of ocean water cooling at three coastal power plants. The Haynes Repowering Project will be completed in three phases, the last one being Haynes 8, which the Los Angeles Department of Water and Power has anticipated will be completed in 2035.

The Alamitos Generating Station is replacing six existing units at the facility in three separate phases with each phase involving the retirement of two units at the site. All replacement technology at the Alamitos Generating Station will be gas turbine based. AES-SL has proposed a schedule that completes the three phases in 2024, however, as part of AES-SL's plan, the largest units will voluntarily demonstrate compliance prior to the 2020 target date.

Prior to development of the Once-through Cooling Policy, Tetratech prepared an environmental analysis of retrofitting once-through cooling systems to wet cooling towers at California Coastal power generating plants, including the Haynes and Alamitos

generating stations (Tetratech, 2008.) The environmental and economic analysis is incorporated here be reference.

5.5 IMPLEMENTATION ALTERNATIVES FOR WATER RECLAMATION PLANTS

Metals could potentially be removed from WRP effluent through advanced treatment technologies such as precipitation, carbon adsorption, and filtration.

Metals precipitation is accomplished by the addition of coagulants such as alum, lime salts, and organic polymers. Chemicals are added during the primary treatment settling process at the wastewater treatment plant. Precipitation can result in the increase of total dissolved solids in the wastewater and the generation of sludge which may require treatment. Very high amounts of metals could be considered toxic and require special handling and disposal (Metcalf and Eddy, 1991).

Carbon adsorption is used to remove dissolved organic matter and particulate matter from wastewater that has already received biological treatment. Activated carbon is used in either a granular or powdered form to collect soluble substances in wastewater on a solid interface. Granulated activated carbon is housed in a fixed-bed column (contactor) as a means of contacting wastewater with the carbon. Alternatively, carbon can be added directly to the effluent in a powdered form. Upstream filters should be used to minimize pressure loss or adsorption capacity and to reduce required frequency of carbon regeneration. Temperature, pH and flow rate should also be kept constant to improve performance of carbon contactors (Metcalf and Eddy, 1991).

Membrane separation is the most advanced filtration technology utilized for removal of contaminants in wastewater. Semi-permeable membranes of different materials, pore sizes, and configurations are used to filter out metals. Membrane pore sizes range from 0.0001 to 0.35 microns. Depending on the type of membrane and operational parameters selected for advanced treatment, very high percentages of chemical constituents can be removed from the water.

Filtration processes are categorized according to the pore size of the membrane. These categories, moving from the largest pore size to the smallest, are microfiltration (MF), ultrafiltration (UF), nanofiltration (NF), and reverse osmosis (RO). A combination of MF followed by RO (MF-RO) is the most prevalent advanced treatment scheme used for producing high quality recycled water. When paired together, these membrane processes reduce maintenance and optimize treatment. MF-RO also produces a concentrated brine waste stream that requires disposal. If MF-RO were chosen as a compliance strategy by the WRPs subject to this TMDL, an ocean outfall would be the most likely disposal method given their proximity to the coast.

6. SETTING, IMPACTS, AND MITIGATION

6.1 INTRODUCTION

This section presents the environmental setting, impacts, and mitigation, where applicable, for the proposed implementation alternatives evaluated in this draft Substitute Environmental Document (SED). The implementation alternatives for achieving compliance with the metals TMDL are described in detail in Section 5 of this document and again in the TMDL Staff Report. Each of these implementation alternatives have been independently evaluated in this draft SED. The environmental setting for the metals TMDL is discussed in Section 6.1. The installation, operation and maintenance activities associated with the metals TMDL implementation alternatives are discussed in Section 6.2. Section 6.3 discussed site-specific and device-specific environmental impacts from implementing the metals TMDL. Section 6.4 is the environmental checklist, which includes the potential negative environmental impacts of the Implementation Alternatives (see Section 5 for a detailed description of the TMDL Implementation Alternatives).

6.1.1 APPROACH TO ENVIRONMENTAL SETTING AND IMPACT ANALYSIS

Any potential environmental impacts associated with the metals TMDL depend upon the specific compliance projects selected by the responsible jurisdictions, most of whom are public agencies subject to their own CEQA obligations. (See Pub. Res. Code § 21159.2.) This CEQA substitute 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 EIR is the San Gabriel River watershed as shown in Figure 6.1. This area is the geographic area for assessing impacts of the different implementation alternatives, because the discharge of metals generated in this area to the river and its tributaries would be controlled and/or eliminated by any one of or a combination of the implementation alternatives. This analysis focuses on the urbanized portion of the watershed, because this is where the WLAs are assigned and where any potential environmental impacts would occur.

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 metals TMDL has been determined. The analysis in this draft SED assumes that, project proponents will design, install, and maintain implementation measures following all applicable laws, regulations, ordinances, and formally adopted municipal and/or agency codes, standards, and practices. Several handbooks are available and currently used by municipal agencies that provide

guidance for the selection and implementation of BMPs (Caltrans, 2002, CASQA, 2003a, CASQA, 2003b, WERF, 2005).

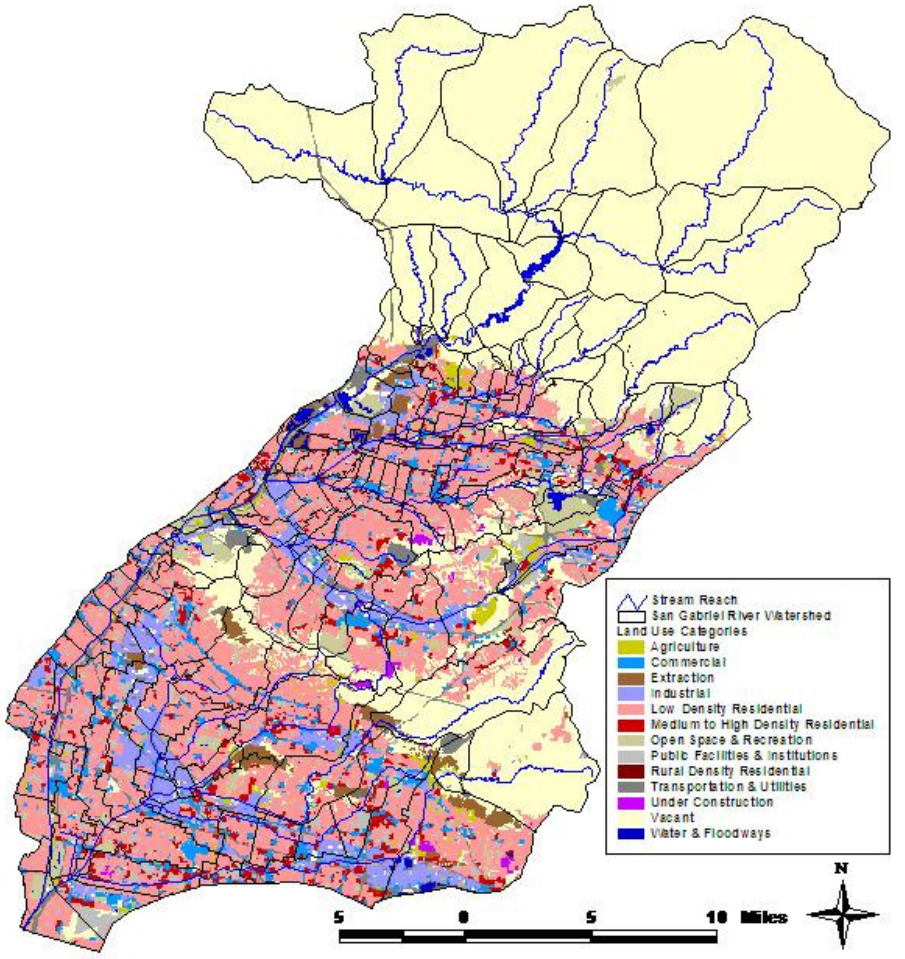
6.1.2 PROGRAM LEVEL VERSUS PROJECT-LEVEL ANALYSIS

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

6.1.3 ENVIRONMENTAL SETTING

The San Gabriel River receives drainage from a large area of eastern Los Angeles County; its headwaters originate in the San Gabriel Mountains. The watershed consists of extensive areas of undisturbed riparian and woodland habitats in its upper reaches. Much of the watershed of the West Fork and East Fork of the river is set aside as a wilderness area; other areas in the upper watershed are subject to heavy recreational use. The upper watershed also contains a series of flood control dams. Further downstream, towards the middle of the watershed, are large spreading grounds used for groundwater recharge. The watershed is hydraulically connected to the Los Angeles River through the Whittier Narrows Flood Control Basin in the following manner: The Rio Hondo branches from the San Gabriel River just below Santa Fe Dam and flows westward to Whittier Narrows Flood Control Basin. Flows from the San Gabriel River and Rio Hondo can merge at this reservoir during larger flood events. From Whittier Narrows, the Rio Hondo flows southwestward and merges with the Los Angeles River, while the San Gabriel River becomes a concrete-lined channel and discharges to the Pacific Ocean near the City of Long Beach (Figure 6.1).

Figure 6.1. San Gabriel River Metals TMDL area



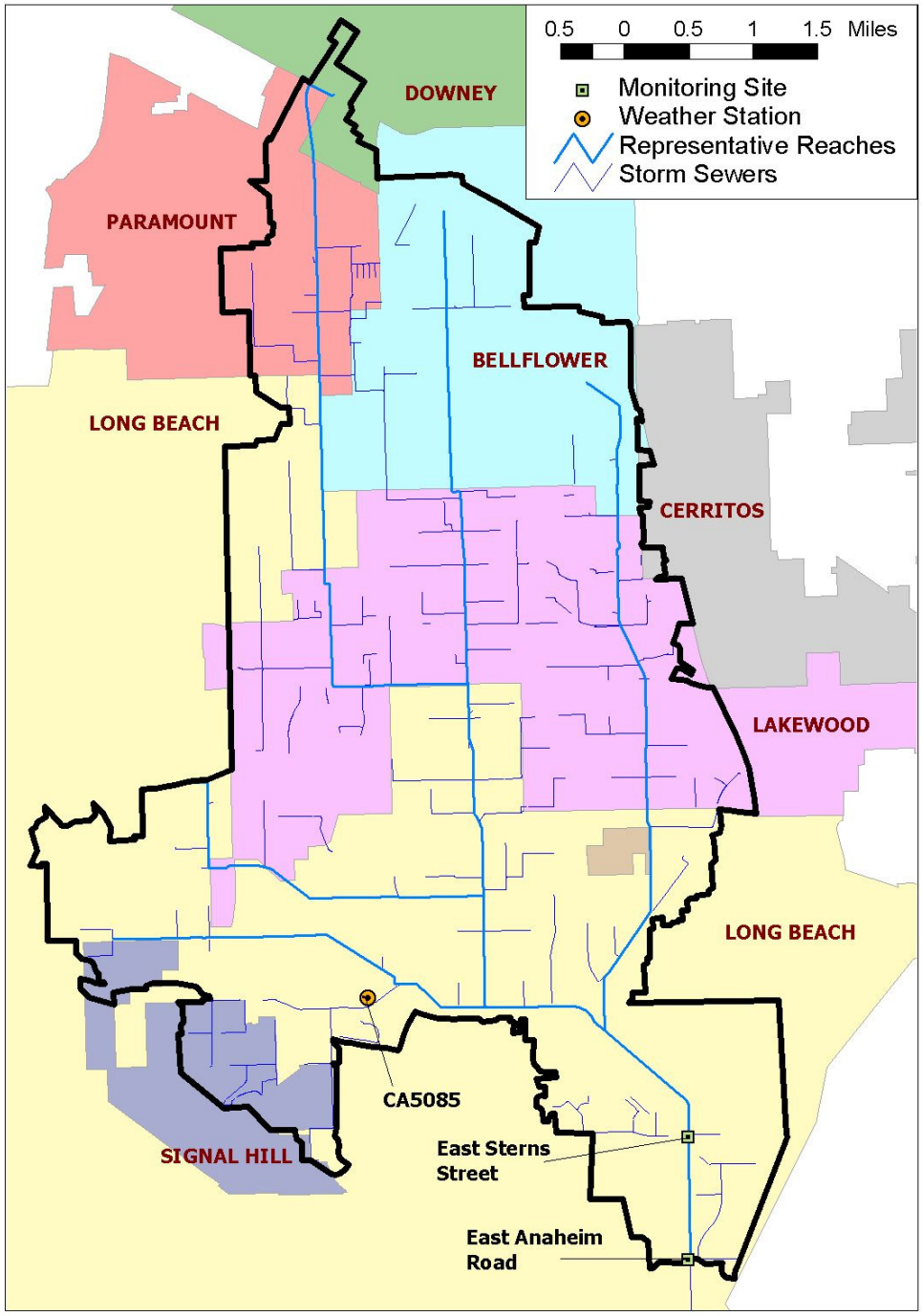
Los Cerritos Channel is an open channel located within the City of Long Beach. The Channel is a concrete-lined conduit for freshwater until approximately Anaheim Road, where the Channel's tidal prism1 begins. From there it connects with Alamitos Bay through the Marine Stadium. Wetlands connect to the Channel a short distance from its lower end.

The portion of Los Cerritos Channel listed as impaired for metals that these TMDLs address is the freshwater portion above the tidal prism, 2.1 miles in length. The Los Cerritos Channel above the tidal prism drains a relatively small (17,725 acre) densely urbanized area, hereafter referred to as the Los Cerritos Channel Freshwater Watershed (Figure 1). Geographic Information System coverage for the freshwater portion of Los Cerritos Channel watershed was provided by the Regional Board.

Approximately 45 percent of the Watershed is located in east Long Beach while 55 percent is located outside the City of Long Beach, in the cities of Lakewood, Bellflower, Paramount, Downey, Signal Hill, and Cerritos. (See Figure 6-2.)

[1] Tidal prism is the volume of water drawn into the channel from the ocean through tides.

Figure 6.2. Los Cerritos Channel Freshwater Watershed



Land use within the Watershed is 93% urban (approximately 59% residential, 4% mixed urban, 22% commercial, and 8% industrial). Open space accounts for 6% of land use and agriculture is <1% of land use. Table 6-1 shows the estimated number of acres for seven land use categories in the Watershed.

Table 6-1. Land use types and acreage in the Los Cerritos Channel Freshwater Watershed.

Land Cover Type	No. of Acres	Percentage of Watershed
Agriculture	137.1	0.8%
Commercial	3,857.4	21.8%
High Density Residential	9,311.1	52.5%
Industrial	1,383.9	7.8%
Low Density Residential	1,205.2	6.8%
Mixed Urban	713.4	4%
Open Space	1,098	6.2%
Water	18.9	0.1%
Total	17,724.9	100%

Average dry-weather flows in Los Cerritos Channel are 2.98 cubic feet per second (cfs). Storm event flows can be as high as 1,460 cfs (historical maximum). Los Cerritos Channel was structured to quickly convey stormwater to its terminus in Alamitos Bay. Therefore, the relationship between rain events in the Watershed and increased flow in the Channel is strong and immediate.

6.1.3.1 Beneficial Uses

The San Gabriel River is designated for multiple beneficial uses, including wildlife habitat (WILD), warm freshwater habitat (WARM), cold freshwater habitat (COLD), wetland habitat (WET), rare, threatened, or endangered species (RARE), estuarine habitat (EST), marine habitat (MAR), migration of aquatic organisms (MIGR), and spawning, reproduction, and/or early development (SPWN) (LARWQCB, 1994).

Los Cerritos Channel is designated with an existing wildlife habitat (WILD) beneficial use, and intermittent beneficial uses for noncontact water recreation (REC2), and warm water habitat (WARM).

6.2 INSTALLATION, OPERATION AND MAINTENANCE ACTIVITIES

This section discusses the installation, and operation and/or maintenance activities associated with the metals TMDL implementation alternatives. This information should provide a frame of reference in determining potential environmental impacts of these alternatives. Some reasonably foreseeable installation activities for compliance with the metals TMDL would consist of installation of structural stormwater BMPs within the urbanized watershed, construction of alternative cooling technologies, and wastewater treatment facilities at existing WRPs. Temporary impacts to natural resources from these types of installation activities typically include air pollution from dust and construction equipment, increased runoff and soil-erosion, and installation noise. The metals TMDL provides approximately 16 years to complete the installation of these implementation alternatives. The installation would occur at different locations at different periods.

Potential sites would be located in residential, commercial, or industrial areas. Site preparation would include clearing, grubbing and grading with bulldozers and dump trucks. Access roads could be prepared concurrently with the site operations.

Construction activities would include concrete work, which would entail concrete demolition and refinishing and field fabrication methods such as welding and mechanical bolting. These improvements would be located in urbanized areas. Installation tasks for diversion and treatment facilities could include excavation activities for installation of treatment facilities and pipeline to carry water to and from facilities, open-trench construction to lay pipeline, and demolition of concrete and asphalt to lay pipeline. Installation activities would require the following types of tools: compressors, power tools, backhoes, welders, light-duty trucks, equipment cranes, and concrete mix trucks.

6.3. CEQA CHECKLIST AND DETERMINATION

6.3.1 ENVIRONMENTAL CHECKLIST

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

	ENVIRONMENTAL CHECKLIST	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant	No Impact
3.	**Water. Will the proposal result in:**				
	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			

	ENVIRONMENTAL CHECKLIST	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant	No Impact
	c. Introduction of new species of plants into an area, or in a barrier to the normal replenishment of existing species?	X			
	d. Reduction in acreage of any agricultural crop?				X
5.	**Animal Life. Will the proposal result in:**				
	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	

	ENVIRONMENTAL CHECKLIST	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant	No Impact
	b. Substantial depletion of any nonrenewable natural resource?			X	
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. Storm water drainage?	X			
	f. Solid waste and disposal?	X			

	ENVIRONMENTAL CHECKLIST	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant	No Impact
17.	**Human Health. Will the proposal result in:**				
	a. Creation of any health hazard or potential health hazard (excluding mental health)?	X			
	b. Exposure of people to potential health hazards?	X			
18.	**Aesthetics. Will the proposal result in:**				
	a. The obstruction of any scenic vista or view open to the public?	X			
	b. The creation of an aesthetically offensive site open to public view?	X			
19.	**Recreation. Will the proposal result in:**				
	a. Impact upon the quality or quantity of existing recreational opportunities?	X			
20.	**Archeological/Historical. Will the proposal:**				
	a. Result in the alteration of a significant archeological or historical site structure, object or building?	X			
21.	**Mandatory Findings of Significance**				
	Potential to degrade: Does the project have the potential to degrade the quality of the environment, substantially reduce the habitat of a fish or wildlife species, cause a fish or wildlife population to drop below self-sustaining levels, threaten to eliminate a plant or animal community, reduce the number or restrict the range of a rare or endangered plant or animal or eliminate important examples of the major periods of California history or prehistory?	X			

	ENVIRONMENTAL CHECKLIST	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant	No Impact
	Short-term: Does the project have the potential to achieve short-term, to the disadvantage of long-term, environmental goals? (A short-term impact on the environment is one which occurs in a relatively brief, definitive period of time, while long-term impacts will endure well into the future.)				X
	Cumulative: Does the project have impacts which are individually limited, but cumulatively considerable? (A project may impact on two or more separate resources where the impact on each resource is relatively small, but where the effect of the total of those impacts on the environment is significant.)	X			
	Substantial adverse: Does the project have environmental effects which will cause substantial adverse effects on human beings, either directly or indirectly?	X			

6.3.2 DISCUSSION OF ENVIRONMENTAL EVALUATION

The analysis of potential environmental impacts is based on the numerous alternative means of compliance available for reducing metals loads to the San Gabriel River and Los Cerritos Channel in response to the proposed Basin Plan amendment. These include implementation of source control measures, flow control measures, storm water best management practices, and diversion and treatment strategies to reduce metals loading from the storm drain system to the San Gabriel River and Los Cerritos Channel watersheds. The analysis is also based on implementation of alternative cooling technologies to reduce metals loading from the power plants to the San Gabriel River Estuary and advanced treatment facilities at wastewater treatment plants. Potential impacts are discussed below, and it is found that any significant impacts can be mitigated at a project level. Agencies such as Caltrans, CASQA, and WERF publish handbooks containing guidance on the selection, siting, design, installation, monitoring, and evaluation of storm water BMPs (Caltrans, 2002, CASQA, 2003a, CASQA, 2003b, WERF, 2005). The evaluation considers whether the environmental impact indicated will have a substantial, adverse change in any of the physical conditions within the area affected by the activity. In addition, the evaluation discusses environmental effects in proportion to their severity and probability of occurrence.

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

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

Answer: **No Impact**

Although the San Gabriel and Los Cerritos Channel watersheds are underlain by many faults, the implementation alternatives are not of the size or scale to cause or accelerate the potential for unstable earth conditions or result in changes in geologic substructures.

Infiltration Devices
Infiltration devices would not be of the size or scale to result in unstable earth conditions or in changes in geologic substructures (see section 5.2.1). Infiltration devices require relatively shallow earthwork, as they are typically less than 10 feet deep and have a footprint of approximately 6,500 square feet (to treat 5 acres).

Media Filters
Media filters, like infiltration devices, would not be of the size or scale to result in unstable earth conditions or in changes in geologic substructures (see section 5.2.2).

Media filters, including those with underground storage vaults, require relatively shallow earthwork, as they are typically less than 10 feet deep and have a footprint of approximately 700 square feet (to treat 2 acres).

Diversion and Treatment

Construction of diversion and treatment facilities, like infiltration devices and media filters, would not be of the size or scale to result in unstable earth conditions or in changes in geologic substructures (see section 5.2.3). Construction of treatment facilities requires relatively shallow earthwork, as they are surface structures.

Regional Infiltration System and Detention Facility

For regional infiltration systems, infiltration of collected storm water could potentially result in unstable earth conditions if loose or compressible soils are present, or if such BMPs were located where infiltrated storm water flowing as groundwater could destabilize existing slopes. Detention facilities also involve some infiltration of stormwater. These impacts can be avoided by siting infiltration type BMPs away from areas with loose or compressible soils, and away from slopes that could become destabilized by an increase in groundwater flow. There could be areas within the Los Cerritos Channel or San Gabriel River watersheds with significant rising groundwater. Infiltration type BMPs can also be built on a small enough scale to avoid these types of impacts. If responsible parties install infiltration facilities on a scale that could result in unstable earth conditions or in changes in geologic substructures, potential impacts could be avoided through proper geotechnical investigations, siting, design, and ground and groundwater level monitoring to ensure that infiltration BMPs are not employed in areas subject to unstable soil conditions.

Regional Natural Treatment System

Construction of regional natural treatment systems, such as constructed wetlands, would not be of the size or scale to result in unstable earth conditions or in changes in geologic substructures. Construction of natural treatment facilities requires relatively shallow earthwork and NTS do not result in infiltration of storm water.

Non Structural Controls

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

Alternative Cooling Technologies for Power Plants

Construction of alternative cooling technologies, like the storm water treatment devices, would not occur at a scale which would result in unstable earth conditions or in changes in geologic substructures (see section 5.4.2). Construction of alternative cooling technologies requires relatively shallow earthwork, as they are surface structures.

Advanced Treatment for Water Reclamation Plants

Construction of advanced treatment for WRPs, like the storm water treatment devices, would not occur at a scale which would result in unstable earth conditions or in changes in geologic substructures (see section 5.5). Construction of alternative cooling technologies requires relatively shallow earthwork, as they are surface structures.

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

Answer: **Potentially Significant**

Infiltration Devices

The use of infiltration devices to treat a portion of storm water 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 facilities, 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 downgradient properties, especially on hills with known side-hill seeps. Infiltration devices should not be located over fill soils that form an unstable upgrade and are prone to slope failure, nor should they be located in areas in which the slope exceeds 20% (USEPA, 2004). 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 storm water to other facilities as applicable if a substantial increase was detected. Infiltration devices should not be sited less than 10 feet downgradient or 100 feet upgradient 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 (California Geological Survey**,** 1997).

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 source control measures such as increased and improved street sweeping, good housekeeping, and incorporating low-impact development practices into existing development.

Media Filters and Diversion and Treatment

Disruption of the soil may occur during construction activities associated with installation of media filters or diversion and treatment facilities. Notably, waste load allocations are only assigned in the urbanized portion of the watershed, which have already suffered 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.

Regional Infiltration System, Detention Facility, and Natural Treatment System

Installation of regional infiltration systems, detention facilities, and natural treatment systems may result in surface soil excavation or grading during construction resulting in increased disturbance of the soil. The impacts on soil disruptions, displacements, compaction, or overcoming during construction activities can be minimized by proper siting and design to avoid areas with more susceptible soil and standard construction techniques.

Non Structural Controls

Non-structural BMPs and source reduction efforts would involve no change to the physical environment either directly or indirectly and would have no impact on soil.

Alternative Cooling Technologies

Disruption of the soil may occur during construction activities associated with installation of cooling towers, if these strategies were chosen for compliance. Notably, waste load allocations are only assigned in the urbanized portion of the watershed, which have already suffered 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. For installation of pipeline, a site-specific geotechnical study would help identify unstable soils or geologic units. Based on this study, mitigation measures could be incorporated into the project design, such as pipe material specifications, pipe joint specifications, burial depth, pipe bedding materials and support piles.

Advanced Treatment for Water Reclamation Plants

Disruption of the soil may occur during construction activities associated with construction of advanced treatment facilities. Notably, waste load allocations are only assigned in the urbanized portion of the watershed, which have already suffered 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. For installation of pipeline for brine disposal, a site-specific geotechnical study would help identify unstable soils or geologic units. Based on this study, mitigation measures could be incorporated into the project design, such as pipe material specifications, pipe joint specifications, burial depth, pipe bedding materials and support piles.

This SED impact analysis concludes that there are potentially significant impacts from implementation of the TMDL, but notes that there are mitigation measures available to reduce potentially significant environmental impacts to less than significant levels. However, implementation of these mitigation measures are within the responsible and jurisdiction of the responsible agencies listed in this TMDL (Title 14, California Code of Regulations, Section 15091(a)(2)). These agencies have the ability to implement these mitigation measures, can and should implement these mitigation measures, and are required under CEQA to implement mitigation measures unless mitigation measures are deemed infeasible through specific considerations (Title 14, California Code of Regulations, Section 15091(a)(3)).

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

Answer: **No Impact**

Infiltration Devices
No impact is expected because infiltration devices would not be of the size or scale to result in change in topography or ground surface relief features (see section 5.2.1). Infiltration devices require relatively shallow earthwork, as they are typically less than 10 feet deep and have a footprint of approximately 6,500 square feet (to treat 5 acres with an infiltration trench).

Media Filters
No impact is expected because media filters, like infiltration devices would not be of the size or scale to result in changes in topography or ground surface relief features (see section 5.2.2). Media filters, including underground storage vaults, require relatively shallow earthwork, as they are typically less than 10 feet deep and have a footprint of approximately 700 square feet (to treat 2 acres with an underground sand filter).

Diversion and Treatment
No impact is expected because construction of treatment facilities, like infiltration devices and media filters, would not be of the size or scale to result in changes in topography or ground surface relief features (see section 5.2.3). Construction of treatment facilities requires relatively shallow earthwork, as they are surface facilities.

Regional Infiltration System, Detention Facility, and Natural Treatment System
Regional BMPs would not be of the size or scale to result in changes in topography or ground surface relief features.

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

Alternative Cooling Technologies for Power Plants
No impact is expected because construction of alternative cooling technologies, like storm water treatment devices, would not be of the size or scale to result in changes in topography or ground surface relief features (see section 5.4.2). Construction of alternative cooling technologies requires relatively shallow earthwork, as they are surface facilities.

Advanced Treatment for Water Reclamation Plants
No impact is expected because construction of advanced treatment facilities, like infiltration devices and media filters, would not be of the size or scale to result in changes in topography or ground surface relief features (see section 5.5). Construction of treatment facilities requires relatively shallow earthwork, as they are surface facilities.

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

Answer: **No impact**

Although the San Gabriel and Los Cerritos Channel watersheds may have unique geologic or physical features, the implementation alternatives are not of the size or scale to alter geologic or physical features. Notably, waste load allocations are only assigned in the urbanized portion of the watershed, which have already suffered modification and hardscaping. Furthermore, it is not reasonably foreseeable that responsible agencies would choose to comply with these TMDLs through structural means in areas where doing so would result in destruction, covering or modification of any unique geologic or physical features. Rather, it is foreseeable that localities would site facilities to avoid such features.

Infiltration Devices
Implementation of infiltration devices would not be of the size or scale to result in the destruction, covering or modification of any unique geologic or physical features (see section 5.2.1). Infiltration devices would require relatively shallow earthwork, as infiltration trenches are typically less than 10 feet deep and have a footprint of approximately 6,500 square feet (to treat 5 acres with an infiltration trench).

Media Filters
Implementation of media filters would not be of the size or scale to result in the destruction, covering or modification of any unique geologic or physical features (see section 5.2.2). Media filters, including those with underground storage vaults, would require relatively shallow earthwork, as they are typically less than 10 feet deep and have a footprint of approximately 700 square feet (to treat 2 acres with an underground sand filter).

Diversion and Treatment
Construction of diversion and treatment facilities would not be of the size or scale to result in the destruction, covering or modification of any unique geologic or physical features (see section 5.2.3). Construction of diversion and treatment facilities would require relatively shallow earthwork, as they are surface facilities.

Regional Infiltration System and Detention Facility
Regional Infiltration systems and detention facilities would not be of the size or scale to result in destruction, covering or modification of any unique geologic or physical features. In the unlikely event that responsible parties discover any unique geologic or physical features which require protection, potential impacts could be mitigated by avoiding siting facilities in these areas.

Regional Natural Treatment System
Construction of regional treatment systems, such as constructed wetlands, would not be of the size or scale to result in the destruction, covering or modification of any unique geologic or physical feature.

Non Structural Controls
Non-structural BMPs and source reduction efforts would involve no change to the physical environment either directly or indirectly and would have no impact on unique geological or physical features.

Alternative Cooling Technologies for Power Plants
Construction of alternative cooling technologies would not be of the size or scale to result in the destruction, covering or modification of any unique geologic or physical features (see section 5.4.2). Construction of alternative cooling technologies would require relatively shallow earthwork, as they are surface facilities.

Advanced Treatment for Water Reclamation Plants
Construction of advanced treatment facilities would not be of the size or scale to result in the destruction, covering or modification of any unique geologic or physical features (see section 5.5). Construction of these facilities would require relatively shallow earthwork, as they are surface facilities.

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**

Infiltration Trenches
The use of infiltration devices to treat runoff could result in erosion of the 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. Suitable sites would be determined by geotechnical studies to define site-specific soil conditions that are adequate to support infiltration of groundwater. 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). Infiltration devices should not be located over fill soils that form an unstable upgrade and are prone to slope failure, nor should they be located in areas in which the slope exceeds 20% (USEPA, 2004). The overflow channel used for bypass must be stable and ensure that uncontrolled, erosive flow does not develop (U.S. EPA, 2004). See also response to Earth 1.b.

Construction of infiltration trenches and basins could result in erosion of soils onsite. Responsible agencies may plant cover crops or buffer strips to increase soil infiltration and reduce runoff, in order to reduce soil erosion. 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 (U.S. EPA, 2005). Furthermore, construction sites are required to retain sediments on site, either by a general construction storm water permit or through the construction program of the applicable MS4 permit - both of which are already designed to minimize or eliminate erosion impacts on receiving water.

Media Filters and Diversion and Treatment

Construction of media filters and diversion and treatment facilities could result in erosion of soils onsite. Responsible agencies may plant cover crops or buffer strips to increase soil infiltration and reduce runoff, in order to reduce soil erosion. 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 (U.S. EPA, 2005). Furthermore, construction sites are required to retain sediments on site, either by a general construction storm water permit or through the construction program of the applicable MS4 permit - both of which are already designed to minimize or eliminate erosion impacts on receiving water.

Regional Infiltration Systems and Detention Facilities

Regional infiltration systems and detention facilities may result in minor soil excavation during construction which could introduce the potential for that soil to be eroded. Erosion of soils may occur as a short-term impact during construction. Construction BMPs should be used during implementation to minimize offsite sediment runoff or deposition. Greater utilization of LID can further mitigation the potential for erosion. Construction sites are required to retain sediment on site, both under general construction storm water permits and through the construction program of the applicable MS4 permits, both of which are designed to minimize or eliminate erosion impacts on receiving water.

Regional Natural Treatment System

Constructed wetlands consist of coarser grade sediment that is less likely to be susceptible to erosion than finer grained material or uncovered soils. Construction of regional natural treatment systems, such as constructed wetlands, could result in erosion of soils onsite. Construction plans should 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.

Non Structural Controls

Non-structural BMPs and source reduction efforts would involve no change to the physical environment either directly or indirectly and would have no impact on wind or water erosion of soils.

Alternative Cooling Technologies for Power Plants

Erosion of soils may occur during construction activities associated with installation of cooling towers. Responsible agencies may plant cover crops or buffer strips to increase soil infiltration and reduce runoff, in order to reduce soil erosion. 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 (U.S. EPA, 2005). Furthermore, construction sites are required to retain sediments on site, either by a general construction storm water permit or through the construction program of the applicable MS4 permit - both of which are already designed to minimize or eliminate erosion impacts on receiving water.

Advanced Treatment for Water Reclamation Plants

Construction of advanced treatment facilities and brine disposal facilities could result in erosion of soils onsite. Responsible agencies may plant cover crops or buffer strips to increase soil infiltration and reduce runoff, in order to reduce soil erosion. 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 (U.S. EPA, 2005). Furthermore, construction sites are required to retain sediments on site, either by a general construction storm water permit or through the construction program of the applicable MS4 permit - both of which 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 responsible and jurisdiction of the responsible agencies listed in this TMDL (Title 14, California Code of Regulations, Section 15091(a)(2)). These agencies have the ability to implement these mitigation measures, can and should implement these mitigation measures, and are required under CEQA to implement mitigation measures unless mitigation measures are deemed infeasible through specific considerations (Title 14, California Code of Regulations, Section 15091(a)(3)).

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

Answer: **Potentially significant**

Infiltration Devices, Media Filters, Diversion and Treatment
Infiltration trenches, media filters, diversion and treatment facilities, or other structural devices to reduce storm flows may impact siltation or deposition of sand within soft-bottomed portions of the river. Minimal deposition currently occurs within the concrete lined channels and no impact is anticipated in the channels. Reduction in siltation in the soft-bottomed portions of the river may be considered a positive impact as fine sediments may contain toxic pollutants. However, sediment release is important for beach replenishment and the wholesale removal of sediment is not required by the TMDL. Responsible agencies may reduce potential impacts to insignificant levels by identifying hot spots of polluted sediment and using targeted BMPs to remove sediments from these hot spots. Impacts to deposition of beach sand may be mitigated by further study at the project level and by on-going monitoring to determine the amount and quality of sediment retained by storage or infiltration facilities that would otherwise enter the river. Furthermore, the required Estuary sediment monitoring will determine the long term (positive or negative) impacts to downstream sediments caused by implementation of the TMDL.

Regional Infiltration Systems, Detention Facilities, Regional Natural Treatment Systems
Deposition of significant volumes of sediment to rivers occurs mostly during wet-weather flows. Therefore, facilities that remove sediment could impact deposition of sand in the river and downstream beaches. This sediment can be contaminated with pollutants and preventing its discharge to the river is a positive change that improves water quality. However, sediment release is important for river and beach replenishment. Facilities that capture sediment, resulting in possible changes in deposition or erosion, can be mitigated if it becomes necessary through sand replacement and importation.

Non Structural Controls
Non-structural BMPs and source reduction efforts would involve no change to the physical environment either directly or indirectly and would have no impact on 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.

Alternative Cooling Technologies for Power Plants
Construction, operation, or maintenance associated with alternative cooling technologies would have no impact on 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.

Advanced Treatment for Water Reclamation Plants
Construction, operation, or maintenance associated with advanced treatment facilities or brine disposal facilities would have no impact on 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.

This SED impact analysis concludes that there are potentially significant impacts from implementation of the TMDL, but notes that there are mitigation measures available to reduce potentially significant environmental impacts to less than significant levels. However, implementation of these mitigation measures are within the responsible and jurisdiction of the responsible agencies listed in this TMDL (Title 14, California Code of Regulations, Section 15091(a)(2)). These agencies have the ability to implement these mitigation measures, can and should implement these mitigation measures, and are required under CEQA to implement mitigation measures unless mitigation measures are deemed infeasible through specific considerations (Title 14, California Code of Regulations, Section 15091(a)(3)).

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

Answer: **Potentially Significant**

Infiltration Devices, Regional Infiltration Systems, Detention Facilities, Regional Natural Treatment Systems
The use of infiltration devices and regional BMPs to treat a portion of storm water could potentially result in increased risk of liquefaction 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 liquefaction is minimal. Suitable sites would be determined by geotechnical studies, conducted prior to construction of infiltration facilities, 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 downgradient properties, especially on hills with known side-hill seeps. 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 storm water to other facilities as applicable if a substantial increase was detected. Infiltration devices should not be sited less than 10 feet downgradient or 100 feet upgradient from structural foundations when infiltrating to near surface groundwater (Caltrans, 2002). 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 source control measures such as increased and improved street sweeping, good housekeeping, and incorporating low-impact development practices into existing development.

Media Filters and Diversion and Treatment

Disruption of the soil may occur during construction activities associated with installation of media filters or diversion and treatment facilities which could potentially result in landslides or ground failure. Notably, waste load allocations are only assigned in the urbanized portion of the watershed, which have already suffered 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.

Non Structural Controls

Non-structural BMPs and source reduction efforts would involve no change to the physical environment either directly or indirectly and would have no impact on earthquakes, landslides, mudslides, ground failure, or similar hazards.

Alternative Cooling Technologies for Power Plants

Disruption of the soil may occur during construction activities associated with installation of cooling towers which could potentially result in landslides or ground failure. Notably, waste load allocations are only assigned in the urbanized portion of the watershed, which have already suffered 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. For installation of pipeline, a site-specific geotechnical study would help identify unstable soils or geologic units. Based on this study, mitigation measures could be incorporated into the project design, such as pipe material specifications, pipe joint specifications, burial depth, pipe bedding materials and support piles.

Advanced Treatment for Water Reclamation Plants

Disruption of the soil may occur during construction activities associated with construction of advanced treatment facilities which could potentially result in landslides or ground failure. Notably, waste load allocations are only assigned in the urbanized portion of the watershed, which have already suffered 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. For installation of pipeline for brine disposal, a site-specific geotechnical study would help identify unstable soils or geologic units. Based on this study, mitigation measures could be incorporated into the project

design, such as pipe material specifications, pipe joint specifications, burial depth, pipe bedding materials and support piles.

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)).

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

Answer: **Potentially Significant**

Infiltration Devices and Media Filters
Short term increases in traffic during the construction and installation of infiltration devices, media filters, or other structural BMPs and long-term 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 sediments. However, emission levels for potentially emitted pollutants are expected to be below the SCAQMD Air Quality Significance thresholds considering the scale of the metals TMDL program. For example, infiltration devices require maintenance twice per year and media filters require maintenance one to three times per year (FHWA, 2007). This number of vehicle trips would not cause significant emissions over baseline conditions in the watershed. In the unlikely event that daily emissions exceed significance thresholds, construction and maintenance for different devices can be conducted on different days to reduce emissions rates. The 16-year phased implementation schedule allows for construction projects to be spread out over time. 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, and (4) design of treatment devices to minimize the frequency of maintenance trips. 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. 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, and 3) use of emulsified diesel fuel. 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.

Regional Infiltration Systems, Regional Detention Facilities, and Regional Natural Treatment Systems

The adverse impacts to ambient air quality may result from short term increases in traffic during the construction and installation of these systems. These activities can also generate greenhouse gas emissions. Construction BMPs can be implemented to mitigate air impacts along with the use low emission vehicles as well as other SCAQMD recommended mitigation measures.

Non Structural Controls

Long-term increases in traffic caused by increased street sweeping are potential sources of increased air pollutant emissions. The staff report assumes that 40% of the urbanized portion of the watershed could treated with more frequent and efficient street sweeping in order to comply with the TMDL. Increased street sweeper traffic could cause additional air emissions from truck engines. However, the use of newer, more efficient street sweepers would result in reduced air emissions because they must also comply with air regulations (SCAQMD Rule 1186.1). Impacts would be mitigated by the use of street sweeper vehicles with lower-emission engines. Potential impacts due to suspension of sediments during sweeping would be mitigated by the use of vacuum-assisted street sweepers.

Alternative Cooling Technologies for Power Plants

Alternative cooling strategies such as closed cycle cooling, and wet or dry cooling towers, can require increased fuel consumption, thereby producing increased air emissions. These emissions would likely be insignificant compared to emissions produced by the power plants' gas fired generators. The primary air emissions form combined-cycle plants are from the combustion of the gas fuel for the combustion turbines (EPRI, 2002). To the extent that there are significant increased emissions, standard emissions reduction technologies are available to mitigate potential impacts. NOx emissions can be mitigated through the use of selective catalytic reduction. CO and VOC emissions can be controlled through the use of catalytic oxidation. Other pollutants can be controlled through improved combustion and operating practices and the use of low sulfur fuel.

Dry cooling may result in reduced plant efficiency, especially in warmer climates, which could lead to an increase in air emissions either by increasing generation on-site or purchasing energy from the grid. The effects on plant efficiency and associated air

emissions would likely be infrequent as the average summertime temperatures in Long Beach are 60–80°F. Improved efficiency can be achieved and impacts mitigated by using a wet-dry condensing system.

Wet cooling towers can contribute to particulate matter and volatile organic compound emissions. Air emissions from cooling towers consist primarily of drift and volatile compounds. When the drift evaporates, particulate matter remains in the air. Drift eliminators can be used to mitigate this impact (EPRI, 2002). This potential impact could also be mitigated by the use of a hybrid wet-dry cooling systems. Because wet cooling would only be used when air temperatures were too high to operate a dry system efficiently, any potential air quality impacts would be intermediate.

Advanced Treatment for Water Reclamation Plants

Short term increases in traffic and emissions during the construction of advanced treatment facilities and brine disposal facilities is a potential source of increased air pollutant emissions. If disposal of brine waste from MF-RO facilities via truck transportation was chosen as a compliance option, this could be a potential source of increased air pollutant emissions due to long term increases in traffic. 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, and 3) use of emulsified diesel fuel. 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.

If MF-RO facilities were chosen as a compliance option, they could require increased energy consumption, thereby producing increased air emissions. However, the development of high performance low pressure reverse osmosis membranes has resulted in a significant reduction of energy use.

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)).

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

Answer: **Potentially Significant**

Infiltration Devices and Media Filters
Infiltration devices, media filters, and other structural BMPs may be a source of objectionable odors if design allows for water stagnation or collection of water with sulfur-containing compounds. Storm water runoff is not likely to contain sulfur-containing compounds, but stagnant water could create objectionable odors. 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.

Diversion and Treatment
Diversion and treatment facilities would not result in stagnation of water or other sources of objectionable odors. No impact is anticipated. No mitigation measures are required.

Regional Infiltration Systems, Detention Facilities, and Natural Treatment Systems
Construction and installation regional infiltration systems, detention facilities, and natural treatment systems may result in objectionable odors in the short-term due to exhaust from construction equipment and vehicles. BMPs may also be a source of objectionable odors if they allow for water stagnation or collection of water with sulfur-containing compounds. Storm water runoff is not likely to contain sulfur containing compounds, but stagnant water could create objectionable odors.

Mitigation measures to eliminate odors caused by stagnation could include proper BMP design to eliminate standing water with covers, aeration, filters, barriers, and/or odor suppressing chemical additives. Structural BMPs should be inspected regularly to ensure that systems are not clogged, pooling water, or odorous. During maintenance, odorous sources should be uncovered for as short of a time period as possible. Wet-weather structural BMPs should be designed to minimize stagnation of water and installed in such a way so as to increase the distance to sensitive receptors in the event of any stagnation.

Non Structural Controls
Increased street sweeping may increase objectionable odors on street. Nonetheless, mitigation measures are available to mitigate any potential impacts to air quality due to increased street sweeping. Mitigation measures could include 1) use of street sweeper vehicles with lower-emission engines, 2) use of soot reduction traps or diesel particulate filters, 3) use of emulsified diesel fuel, 4) use of vacuum-assisted street sweepers to eliminate potential re-suspension of sediments during sweeping activity.

Alternative Cooling Technologies for Power Plants
If chosen as a compliance strategy, the elimination of once through cooling water intake and discharge to the San Gabriel River could potentially cause water to become stagnant and create objectionable odors in the Alamitos Bay area. Mitigation measures

to eliminate odors caused by stagnation could include recirculation, covers, aeration, filters, barriers, and/or odor suppressing chemical additives.

Advanced Treatment for Water Reclamation Plants
Advanced treatment facilities would not result in objectionable odors. Notably, they would be located on existing WRP facilities, where odors are a baseline impact. No additional impact is anticipated. No mitigation measures are required.

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

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: **Potentially Significant**

Infiltration Devices and Media Filters
Infiltration trenches and media filters are structural BMPs to treat storm water and would not result in alteration of air movement, moisture or temperature, or any change in climate, either locally or regionally.

Diversion and Treatment
Diversion and treatment implementation alternatives could consist of additional pipeline and local treatment facilities to treat storm water, which would not result in alteration of air movement, moisture or temperature, or any change in climate, either locally or regionally.

Regional Infiltration Systems, Detention Facilities, and Natural Treatment Systems
Installation, construction, and maintenance of various structural and non-structural BMPs could cause an increase in air pollutant emissions, including greenhouse gas emissions, but these activities would be the same as typical construction and maintenance activities in urbanized areas, such as ordinary road and infrastructure maintenance and building activities, and would not be significant to cause climate change.

Non Structural Controls
Non-structural BMPs and source reduction efforts would involve no change to the physical environment either directly or indirectly and would not result in alteration of air movement, moisture or temperature, or any change in climate, either locally or regionally.

Alternative Cooling Technologies for Power Plants
If chosen as a compliance option, wet cooling towers can produce vapor plumes, which could potentially create problems for fogging and elevated moisture levels. Well-designed plume abatement technologies, such as hybrid wet-dry cooling towers, which have been used in a variety of climates over many decades, are available to mitigate these impacts.

Advanced Treatment for Water Reclamation Plants
Implementation of advanced treatment technologies by WRPs would require construction of treatment facilities at existing WRPs and would not result in alteration of air movement, moisture or temperature, or any change in climate, either locally or regionally.

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)).

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

Answer: **Potentially Significant**

Media Filters
Media filters may impede or slow overland flow to storm drains 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.

Infiltration Devices and Diversion and Treatment
A change in fresh water movement may occur if compliance with the TMDL is achieved in part through infiltration or diversion of storm water from open channels to wastewater or urban runoff treatment facilities. This is likely to have a positive effect during wet weather, as it will reduce the potential for flooding during storm events. (US EPA, 2002) Reductions in dry-weather flow could have potential negative impacts on minimum flows required to support aquatic life. 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 California Department of Fish and Game and National Marine Fisheries Service.

Regional Infiltration Systems Regional Detention Facilities
Regional infiltration systems and detention facilities may change the currents in the watersheds by diverting flow away from the river. The roughness coefficient may be

reduced as sediment is kept out of the river, which could increase the flow rate but would not change the direction of flow. The increase in flow rate could be offset by the reduction of peak flow, as a result of the installation detention basins or infiltration basins. Overland flow in the urbanized portion of the watershed is directed primarily to storm drains. This overland flow may change depending on the structural BMPs installed. If storm water runoff flow is reduced, or is diverted to infiltration or detention basins and not returned to the creeks, these changes would reduce the potential for erosion, which is beneficial to the environment.

Regional Natural Treatment Systems

Regional natural treatment systems, such as constructed wetlands, may impede or slow overland flow 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. Reductions in dry and wet-weather flow could have potential negative impacts on minimum flows required to support aquatic life in the river. If necessary, mitigation measures to maintain minimal flow to support habitat related beneficial uses could be reviewed and approved by the CDFG and USFWS.

Non Structural Controls

Non-structural BMPs and source reduction efforts would involve no change to the physical environment either directly or indirectly and would have no impact on currents, or the course of direction or water movements, in either marine or fresh waters.

Alternative Cooling Technologies for Power Plants

If alternative cooling technologies were chosen as a compliance strategy, it would remove the current power plant discharge to the Estuary, which could result in changes in currents and the course of direction or water movements. This could be considered a positive impact, as it would return the Estuary to more natural flow conditions. Furthermore, the staff report and technical memo for the Estuary model demonstrate that dry weather flow in the Estuary would be maintained by upstream flow and tidal influence despite the removal of power plant flow. Stakeholders have proposed that the current intake and discharge scheme provides circulation in the Alamitos Bay and that the use of alternative cooling technologies would eliminate this circulation. However, any loss of circulation due to the current intake and discharge scheme could be mitigated by alternative recirculation projects or other regulatory requirements in Alamitos Bay.

Advanced Treatment for Water Reclamation Plants

Advanced treatment of wastewater at existing WRPs would not result in changes in currents, or the course of direction or water movements.

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)).

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

Answer: **Potentially Significant**

Infiltration Devices and Diversion and Treatment
Changes in drainage patterns and the rate and amount of surface water runoff will occur if a portion of storm water is infiltrated, diverted and/or captured and treated to achieve compliance with the TMDL. Reductions in surface water runoff would be considered a positive environmental impact, as there would conceivably be a corresponding reduction in pollutant loading associated with urban and storm water run-off. Such devices address the effects of development and increased impervious surfaces in the watershed (EPA, 2002). Potential negative 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 California Department of Fish and Game and National Marine Fisheries Service.

Media Filters
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 storm drain system. Any device installed on-line, especially an older, under-capacity storm drain could have a negative effect on the drain's ability to convey surface waters, including flood waters. This negative impact can be mitigated through design of media filters with overflow/bypass structures and by performing regular maintenance of these devices and if necessary enlargement of the storm drain upstream of the device.

Regional Infiltration Systems and Detention Facilities
Regional infiltration systems and detention facilities collect and/or inhibit storm water flow, which would likely alter drainage patterns, and also decrease the rate and amount of surface water runoff. For example, structural BMPs such as spreading basins would change drainage patterns by increasing absorption rates, which would reduce the amount of surface runoff to creeks. However, increased imperviousness in the watersheds has increased storm water flows, so a partial reduction in storm water flow would not be a negative environmental effect.

Regional Natural Treatment Systems
Constructed wetlands may cause a change in the rate of surface water runoff. These systems may impede or slow overland flow and cause flooding. This negative impact can be mitigated through design of constructed wetlands with overflow/bypass structures and by performing regular maintenance of these devices.

Non Structural Controls
Non-structural BMPs and source reduction efforts would involve no change to the physical environment either directly or indirectly and would have no impact on absorption rates, drainage patterns, or the rate and amount of surface water runoff.

Alternative Cooling Technologies for Power Plants
Changing to alternative cooling technologies would result in the elimination of once-through cooling water, which is drawn in from Alamitos Bay and discharged to the San Gabriel River Estuary. This movement of water is unrelated to runoff and would not

result in changes in absorption rates, drainage patterns, or the rate and amount of surface water runoff.

Advanced Treatment for Water Reclamation Plants
Advanced treatment of wastewater at existing WRPs would not result in changes in absorption rates, drainage patterns, or the rate and amount of surface water 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 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)).

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

Answer: **Potentially Significant**

Infiltration Devices
The use of infiltration devices could result in the diversion of a portion of storm water, altering its current course of flow into the river. Changes in surface water runoff during wet-weather resulting from the use of infiltration devices would be considered a positive environmental impact. Such devices address the effects of development and increased impervious surface in the watersheds (US EPA, 2002). Moreover, they will likely reduce peak floodwater flows (US EPA, 2002), which would be a public benefit, as some of these peak flows constitute a potential flooding hazard and/or a safety hazard to anyone in their near-vicinity. To mitigate any potential impacts, channels leading to infiltration devices should be designed to minimize erosion. Infiltration trenches should be designed to treat only small storms, (i.e., only for water quality) and should be designed off-line. Finally, the sides of an infiltration trench should be lined with a geotextile fabric to prevent flow from causing rills along the edge of the device (US EPA, 2007).

Media Filters
Alterations to the course of flow of flood waters will occur if a portion of storm water is treated with media filters. Any device into a storm drain, especially an older, under-capacity drain could have a negative effect on the drain's ability to convey waters, including flood waters. This 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, 2003b). Devices should be designed to allow bypass of flows that exceed the design capacity. Enlargement of the drain upstream of the device may be required.

Diversion and Treatment

Diversion and treatment of a portion of storm water would alter its current course of flow into the river. Changes in surface water runoff during wet-weather resulting from diversion and treatment would be considered a positive environmental impact. Such devices will likely reduce peak floodwater flows (US EPA, 2002), which would be a public benefit, as some of these peak flows constitute a potential flooding hazard and/or a safety hazard to anyone in their near-vicinity.

Regional Infiltration Systems and Detention Facilities

Regional infiltration systems and detention facilities could alter the volume of flood waters by diverting a portion of the flood waters, but this is unlikely to alter the course of flood waters. Potential effects can be mitigated through proper design (including flood water bypass systems), sizing, and maintenance of these types of structural BMPs. Installation of regional infiltration systems and detention facilities could result in positive environmental benefits like flood mitigation and upstream flow volume reduction.

Regional Natural Treatment Facilities

Regional natural treatment systems, such as constructed wetlands, could alter its current course of flow into the river if the design capacity is exceeded. This negative impact can be mitigated through proper design and maintenance of regional natural treatment systems. The size of the contributing drainage area should not exceed standard specifications. Devices should be designed to allow bypass of flows that exceed the design capacity. Bypass should be installed for flows that exceed treatment capacities.

Non Structural Controls

Non-structural BMPs and source reduction efforts would involve no change to the physical environment either directly or indirectly and would have no impact on the course of flow of flood waters.

Alternative Cooling Technologies for Power Plants

Switching to alternative cooling technologies would result in the elimination of once-through cooling water, which is drawn in from Alamitos Bay and discharged to the San Gabriel River Estuary. This movement of water is unrelated to runoff and would not result in changes to the course of flow of flood waters.

Advanced Treatment for Water Reclamation Plants

The use of advanced treatment technologies at existing WRPs would not result in changes to the course of flow of flood waters.

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)).

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

Answer: **Potentially Significant**

Infiltration Devices and Diversion and Treatment
A change in the amount of surface water may occur if compliance with the TMDL is achieved in part through infiltration or diversion and treatment of storm water which would otherwise enter open channels. This is likely to have a positive effect during wet weather, as it will reduce the potential for flooding during storm events (US EPA, 2002). Reductions in dry-weather flow could have potential negative impacts on minimum flows required to support aquatic life. 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 California Department of Fish and Game and National Marine Fisheries Service.

Media Filters
Media filters may impede or slow overland flow to storm drains 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.

Regional Infiltration Systems and Detention Facilities
Storm water runoff may be retained and/or diverted for groundwater infiltration and/or to detention basins. Water that is retained or diverted would not flow into the river. Reduction in the amount of water in the stream channels may affect the ecology of the streams; mitigation measures for these affects are discussed below under Plant Life and Animal Life.

Regional Natural Treatment Systems
A change in the amount of surface water may occur if compliance with the TMDL is achieved through regional natural treatment systems. Constructed wetlands may impede or slow overland flow 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. Flow bypasses should be installed to divert storm water in excess of treatment capacity.

Non Structural Controls
Non-structural BMPs and source reduction efforts would involve no change to the physical environment either directly or indirectly and would have no impact on the amount of surface water in the river.

Alternative Cooling Technologies for Power Plants
If alternative cooling technologies was chosen as a compliance strategy, it would remove the current power plant discharge to the Estuary, which could result in changes in the amount of surface water in the Estuary. This could be considered a positive impact, as it would return the Estuary to more natural flow conditions. Furthermore, the staff report and technical memo for the Estuary model demonstrate that dry weather flow in the Estuary would be maintained by upstream flow and tidal influence despite the removal of power plant flow.

Advanced Treatment for Water Reclamation Plants
The use of advanced treatment technologies at existing WRPs would not result in a change in the amount of surface water in any water body

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

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

Answer: **Potentially Significant**

Infiltration Devices, Media Filters, Diversion and Treatment, and Non Structural Controls
The use of structural and nonstructural BMPs to treat dry weather and storm water 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.

Regional Infiltration Systems and Regional Detention Facilities
During wet-weather discharges, certain structural BMPs (including infiltration basins and detention basins) would reduce turbidity and increase dissolved oxygen, because these BMPs would remove sediment and bio-available oxygen demanding substances from the surface water. Reduced turbidity and increased dissolved oxygen are beneficial to the environment. No mitigation measures are required.

Regional Natural Treatment Systems
The use of regional natural treatment systems 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. Regional natural treatment systems have multiple pollutant treatment potential. Constructed wetlands have been effective at removing metals as well as bacteria and other pollutants (WERF, 2005).

Alternative Cooling Technologies for Power Plants
A commentor on the previously approved TMDL asserted that removing power plant discharge to the Estuary would result in a shallow waterbody, which could lead to increased solar heating and algal blooms. This is not a reasonably foreseeable impact. If alternative treatment technologies were implemented, much of the heated water (up to 100°F) currently discharged to the Estuary by the power plants would be replaced by cooler tidally driven ocean water, which is demonstrated in the staff report and technical memo for the Estuary model. The possible effects of increased solar heating by removing the discharge from the Estuary are thus not reasonably foreseeable.

Advanced Treatment for Water Reclamation Plants
The use of advanced treatment to treat wastewater 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.

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)).

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

Answer: **Less than Significant**

Infiltration Devices
A change in the rate of flow of ground waters may occur if compliance with the TMDL is achieved through significant infiltration of storm water. 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.

Media Filters
Media filters are flow through devices to treat storm water 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
Diversion and treatment facilities are above ground devices to treat storm water 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.

Regional Infiltration Systems and Regional Detention Facilities
Over the long term, infiltration of storm water runoff via regional infiltration systems such as spreading grounds could alter the direction or rate of flow of groundwater. Detention basins also involve a certain amount of infiltration. This could result in unstable earth conditions if such BMPs were to be located where infiltrated storm water flowing as groundwater could destabilize existing slopes. There could be areas of significant rising of groundwater in the San Gabriel River or Los Cerritos watersheds. Also, infiltration could alter groundwater movement and cause a change of hydrology by redistributing areas of recharge, which could impact water rights. However, it is noted that only the

urbanized portion of the watershed could potentially be treated with infiltration, and this is unlikely to have a significant impact on areas of recharge or the water balance in the system.

Regional Natural Treatment Systems
The use of a regional natural treatment systems is not expected to result in alteration of the direction or rate of flow of groundwater as they do not involve infiltration.

Non Structural Controls
Non-structural BMPs and source reduction efforts would involve no change to the physical environment either directly or indirectly and would have no impact on the direction or rate of flow of ground waters.

Alternative Cooling Technologies for Power Plants
Alternative cooling technologies are above ground facilities that would 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.

Advanced Treatment for Water Reclamation Plants
Advanced treatment technologies are above ground facilities that would have no impact on the direction or rate of flow of ground waters. These facilities, including brine disposal facilities, if chosen as a compliance option, would be installed in areas that are already developed and installation activities would occur at depths that would not impact ground water.

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

Answer: **Potentially Significant**

Infiltration Devices
A change in the quantity of ground waters may occur if compliance with the TMDL is achieved through significant infiltration of storm water. Increased groundwater recharge would be considered a positive impact by the proposal, as it would contribute to replenishing our local water supplies.

If infiltration devices are not properly sited and constructed, ground water quality could be adversely impacted. 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 trench bottom (Caltrans, 2002). The Washington State Department of Ecology (WA DOE, 2001) recommends that the base

of all infiltration trench systems be 5 feet above the seasonal high-water mark, bedrock (hardpan) or other low permeability layer. It is recommended that sand filters be used where soils or groundwater contamination are a concern (US EPA, 2007, CASQA, 2003b). 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 in the trench bottom can increase metals removal (CASQA, 2003b).

Media Filters

Media filters are flow through devices to treat storm water and will have no impact on the quantity or quality 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. Stormwater treated by sand filters has no interaction with, and thus no potential to contaminate the groundwater (US EPA, 2007).

Diversion and Treatment

Diversion and treatment facilities are above ground devices to treat storm water 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.

Regional Infiltration Systems and Regional Detention Facilities

Potential impacts associated with regional infiltration facilities would be similar to potential impacts from local infiltration, but on a larger scale. Regional detention facilities can also involve infiltration of stormwater, which could impact groundwater. The potential for adverse impacts may be mitigated through proper design and siting of 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. It is not recommended that infiltration be used where soils or groundwater contamination are a concern (CASQA, 2003b). 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, 2003b). When properly managed, increased groundwater recharge would be considered a positive impact, as it would contribute to replenishing local water supplies and reducing reliance on imported water.

Regional Natural Treatment Systems

The use of a regional natural treatment systems is not expected to result in changes to groundwater quality or quantity.

Non Structural Controls

Non-structural BMPs and source reduction efforts would involve no change to the physical environment either directly or indirectly and would have no impact on the quantity or quality of ground waters.

Alternative Cooling Technologies for Power Plants

Alternative cooling technologies are above ground facilities that would 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.

Advanced Treatment for Water Reclamation Plants
Advanced treatment facilities are above ground devices to treat wastewater and will have no impact on the quantity or quality of ground waters. These facilities, including brine disposal facilities, if chosen as a compliance option, 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 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)).

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

Answer: **Potentially Significant**

Infiltration Devices and Diversion and Treatment, Regional Infiltration Systems, Regional Detention Facilities, and Regional Natural Treatment Systems
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 storm water or treatment and reuse of storm water. A major goal of the integrated water resources approach is to capture and re-use storm water runoff for public water supplies.

Media Filters
Media filters are flow through devices to treat storm water and will have no impact on the amount of water otherwise available for public water supplies.

Non Structural Controls
Non-structural BMPs and source reduction efforts would involve no change to the physical environment either directly or indirectly and would have no impact on the amount of water otherwise available for public water supplies.

Alternative Cooling Technologies for Power Plants
If alternative cooling technologies, including wet-cooling towers, were chosen as a compliance strategy, there could be an increased demand for public water supply. However, steam electric generating facilities using once-through salt water can reduce water usage by 70 to 96% by converting to closed-cycle, recirculating cooling systems. If the power plants were unable to fully supply wet cooling towers with existing reclaimed water supplies, they could look to alternative sources. Power plants may work with other responsible agencies under the TMDL to pursue an integrated water resources approach. To the extent that potable water would be used in wet cooling towers, the amount of required water could be mitigated through the installation of flow reduction

technologies such as recirculating cooling lakes, cooling canals, or hybrid wet-dry cooling towers.

Advanced Treatment for Water Reclamation Plants
Advanced treatment facilities would have no impact on the amount of water otherwise available for public water supplies.

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)).

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**

Infiltration Devices
Implementation may result in flooding hazards if infiltration devices are not properly designed and constructed to allow for bypass of storm water 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 trenches should be equipped with an observation well to monitor drain time and allow access if drainage is required (Caltrans, 2002). Surface trenches have a slightly higher risk of clogging than underground trenches, which could be prevented by placing a permeable filter fabric below the surface of the trench to intercept sediment (US EPA, 2004).

Infiltration devices may also reduce flooding hazards by reducing the peak storm flows in the San Gabriel River and its tributaries by diverting and retaining water on-site.

Media Filters
Implementation may result in flooding hazards if media filters are not properly designed and constructed to allow for bypass of storm water 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.

Diversion and Treatment
Diversion of storm water from open channels to wastewater or urban runoff treatment facilities is a positive effect, as it will reduce the potential for flooding during storm events.

Regional Infiltration Systems and Detention Facilities
Installation of regional infiltration systems and detention facilities that are not properly designed and constructed to allow for bypass of excess storm water during storms that exceed design capacity can cause flooding. However, this potential impact can be mitigated through proper design and maintenance of regional infiltration systems. Any modifications to the watershed hydrology should be modeled and accounted for in the design of BMP.

Regional Natural Treatment Systems
Implementation may result in flooding hazards if a regional natural treatment system is not properly designed and constructed to allow for bypass of storm water 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.

Non Structural Controls
Non-structural BMPs and source reduction efforts would involve no change to the physical environment either directly or indirectly and would not result in exposure of people or property to water related hazards such as flooding or tidal waves.

Alternative Cooling Technologies for Power Plants
Construction or operation of alternative cooling technologies would not result in exposure of people or property to water related hazards such as flooding or tidal waves.

Advanced Treatment for Water Reclamation Plants
Implementation of advanced treatment technologies would not result in exposure of people or property to water related hazards such as flooding or tidal waves.

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)).

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**

Infiltration Devices, Media Filters, and Diversion and Treatment
If structural BMPs or diversion and treatment facilities are used, impact to plant life in terms of diversity of species or number of species would most likely occur if facilities are located in open space or undeveloped areas. Urban land uses tend to be landscaped

and often with common, non-native species. Based on the waste load allocations for storm water permittees, it is most likely that structural BMPs and treatment facilities would be sited in urbanized areas where their implementation would not cause the removal, disturbance or change in diversity of any plant species. If facilities were sited on undeveloped areas, alternative site locations, or design modifications that would avoid impacts to plant life would be implemented. If avoidance could not be implemented, consultation with agencies having jurisdiction over identified resources would occur to identify specific mitigation measures such as restoration efforts designed to remove exotic plants and re-vegetate with native plant species. 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.

Diversion and treatment 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 California Department of Fish and Game and National Marine Fisheries Service.

Regional Infiltration Systems

The installation of regional infiltration systems such as detention basins and spreading grounds could increase the diversity or number of plant species, which is beneficial to the environment by increasing available habitat. However, during storm events, regional infiltration systems could also divert, reduce, and/or eliminate surface water runoff discharge, which may reduce the number and/or diversity of plant species within the streams, by modifying the hydrology of the creeks, which could be adverse. This can be mitigated through proper project modeling, siting, and planning so that the resulting creek hydrology mimics natural conditions.

Regional Detention Facilities

During the wet-weather season, the installation of regional detention facilities such as detention basins and spreading grounds could increase the diversity or number of plant species, which is beneficial to the environment by increasing available habitat. However, during storm events, regional detention systems could also divert, reduce, and/or eliminate surface water runoff discharge, which may reduce the number and/or diversity of plant species within the streams, by modifying the hydrology of the creeks, which could be adverse. This can be mitigated through proper project modeling, siting, and planning so that the resulting creek hydrology mimics natural conditions.

Regional Natural Treatment Systems

Regional natural treatment systems, such as constructed wetlands, involve the creation of new habitat and would not adversely impact the diversity of species or number of any species of plant. Regional natural treatment systems could result in reduced flows, particularly during dry weather, and may adversely impact downstream plant life. Mitigation measures to maintain minimal flow to support downstream plant life-related beneficial uses should be reviewed and approved by the CDFG and USFWS.

Non Structural Controls
Non-structural BMPs and source reduction efforts would involve no change to the physical environment either directly or indirectly and would have no impact on the diversity of species, or number of any species of plants.

Alternative Cooling Technologies for Power Plants
Removing power plant discharge from the Estuary by changing to alternative cooling technologies would be considered a positive impact, as it would return the Estuary, as well as the San Pedro Bay, to more natural flow conditions. Reducing copper loading to the Estuary will improve water quality and reduce aquatic plant life impacts in the Estuary. Furthermore, the staff report and technical memo for the Estuary model demonstrate that dry weather flow in the Estuary would be maintained by upstream flow and tidal influence despite the removal of power plant flow.

Advanced Treatment for Water Reclamation Plants
Implementation of advanced treatment technologies at existing WRPs would have no impact on the diversity of species, or number of any species of plants.

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)).

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**

Infiltration Devices and Media Filters
Most structural BMPs are expected to have a relatively small footprint and would not be likely to have a significant impact on critical habitat for endangered species. Larger regional retention and treatment facilities pose a greater potential threat to critical habitat. Potential impacts to unique, rare or endangered species and/or critical habitat should be evaluated at the project level. If facilities were sited on undeveloped areas, alternative site locations, or design modifications that would avoid impacts to plant life could be implemented. If avoidance could not be implemented, consultation with resource agencies including the California Department of Fish and Game and U.S. Fish and Wildlife, 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 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 California Department of Fish and Game (CDFG) and the United States Fish and Wildlife Service (USFWS). Responsible agencies should endeavor to avoid compliance measures that could result in reduction of the numbers of any unique, rare or endangered species of plants, and instead opt for such measures as enforcing litter ordinances in sensitive habitat areas.

Diversion and Treatment

Diversion and treatment strategies could reduce dry-weather flows and may 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 California Department of Fish and Game and National Marine Fisheries Service.

Regional Infiltration Systems and Detention Facilities

It is unlikely that during and after construction of regional infiltration systems and detention facilities in urbanized areas would result in a reduction of the numbers of any unique, rare or endangered species of plants. Infiltration and detention facilities could result in reduced flows, and may adversely impact downstream plant life. Mitigation measures, discussed above, could be implemented to ensure that potential impacts on unique, rare or endangered plant species are less than significant.

Regional Natural Treatment Systems

Regional natural treatment systems, such as constructed wetlands, involve the creation of new habitat and would not adversely impact the numbers of any unique, rare or endangered species of plants. Regional natural treatment system could result in reduced flows, particularly during dry weather, and may adversely impact downstream plant life. Mitigation measures to maintain minimal flow to support downstream plant life-related beneficial uses should be reviewed and approved by the CDFG and USFWS.

Non Structural Controls

Non-structural BMPs and source reduction efforts would involve no change to the physical environment either directly or indirectly and would not result in reduction of the numbers of any unique, rare or endangered species of plants.

Alternative Cooling Technologies for Power Plants

Removing power plant discharge from the Estuary would be considered a positive impact, as it would return the Estuary, as well as the San Pedro Bay, to more natural flow conditions. Reducing copper loading to the Estuary will improve water quality and reduce aquatic plant life impacts in the Estuary. Furthermore, the staff report and technical memo for the Estuary model demonstrate that dry weather flow in the Estuary would be maintained by upstream flow and tidal influence despite the removal of power plant flow.

Advanced Treatment for Water Reclamation Plants

Implementation of advanced treatment technologies at existing WRPs would not result in reduction of the numbers of any unique, rare or endangered species of plants.

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)).

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**

Infiltration Devices and Media Filters

Vegetated buffer strips or grassy swales 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 storm water 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 buffer strips and swales 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 (1999, California Invasive Plant Council, as amended) should be prohibited.

Also see response to “4. Plant life. a.” and “4. Plant life. b.”

Diversion and Treatment

Diversion and treatment would not result in introduction of new species of plants into an area, or in a barrier to the normal replenishment of existing species.

Regional Infiltration Systems and Regional Detention Facilities

Regional infiltration systems and detention facilities increase permeability thereby reducing storm water runoff. This would not result in introduction of new species of plants into an area. However, the decrease in flow could be a barrier to the normal replenishment of existing species that require a more constant water supply. No adverse impacts are expected because the reduction of nuisance flows would return the stream bed’s dry weather flows to a more natural, pre-development condition. This in turn would facilitate the return of the stream’s plant community to a more natural, pre-development condition and could impede the propagation of water-loving nonnative and invasive plant species. Impeding the propagation of invasive species is not a negative impact. Proper project siting and planning can help mitigate impacts to the plant life.

Regional Natural Treatment Systems

Constructed wetlands and other natural treatment systems could result in the introduction of new plant species to the area. To the extent possible, NTS 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.

Non Structural Controls
Non-structural BMPs and source reduction efforts would involve no change to the physical environment either directly or indirectly and would not result in introduction of new species of plants into an area, or in a barrier to the normal replenishment of existing species.

Alternative Cooling Technologies for Power Plants
The implementation of alternative cooling technologies would not result in introduction of new species of plants into an area, or in a barrier to the normal replenishment of existing species.

Advanced Treatment for Water Reclamation Plants
Implementation of advanced treatment technologies at existing WRPs would not result in introduction of new species of plants into an area, or in a barrier to the normal replenishment of existing species.

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)).

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

Answer: **No Impact**

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 San Gabriel and Los Cerritos watersheds 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 the diversity of species, or numbers of any species of animals (birds, land animals including reptiles, fish and shellfish, benthic organisms, insects or microfauna)?

Answer: **Potentially Significant**

Infiltration Devices and Media Filters
In general, the activities that will take place with the implementation of structural BMPs will be similar in nature to current urban activities that are already occurring in the watershed. Their implementation will not foreseeably:

- Cause a substantial reduction of the overall habitat of a wildlife species
- Produce a drop in a wildlife population below self-sustaining levels
- Eliminate a plant or animal community

It is not reasonably foreseeable that either the construction/implementation or maintenance phase of potential projects will result in a significant long term impact to general wildlife species adapted to developed environments.

Diversion and Treatment
Some of the diversion and treatment strategies considered could result in reduced flows, particularly during dry weather, which may have an adverse impact on downstream aquatic life habitat. The agencies responsible for implementing the TMDL should consult with agencies such as the California Department of Fish and Game to develop strategies to prevent such impacts to these resources and the National Marine Fisheries Service to determine minimum base flows to be maintained to protect these resources. In the event that maintaining these flows will not achieve compliance with TMDL requirements, an alternative treatment and return strategy should be developed.

Regional Infiltration Systems and Detention Facilities

The installation of regional infiltration systems and detention facilities such as detention basins and spreading grounds could increase the diversity or number of animal species, which is beneficial, by creating habitat for those species. However, these types of facilities could also increase the likelihood of vectors and pests. For example, constructed basins may develop locations of pooled standing water that would increase the likelihood of mosquito breeding. Mitigation includes the prevention of standing water through the construction and maintenance of appropriate drainage slopes and siting in areas that have soils with proper drainage. Vector control agencies should be involved for other types of mitigation. Regional detention facilities prone to standing water can be selectively installed away from high-density areas and away from residential housing and/or by requiring oversight and treatment of those systems by vector control agencies.

Regional infiltration and detention facilities could also result in a change in the amount of surface water. Reductions in dry and wet-weather flow could have potential negative impacts on minimum flows required to support and protect the riparian and wetland habitat. Mitigation measures to maintain minimal flow to support habitat related beneficial uses could be reviewed and approved by the CDFG and USFWS.

Regional Natural Treatment Systems
The installation of NTS could increase the diversity or number of animal species, which is beneficial, by creating habitat for those species.

Non Structural Controls
Non-structural BMPs and source reduction efforts would involve no change to the physical environment either directly or indirectly and would have no impact on the diversity of species, or numbers of any species of animals.

Alternative Cooling Technologies for Power Plants
Changing to alternative cooling technologies would be considered a positive impact, as it would return the Estuary, as well as the San Pedro Bay, to more natural flow conditions. Reducing copper loading to the Estuary will improve water quality and reduce aquatic life impacts in the Estuary. The staff report and technical memo for the Estuary model demonstrate that dry weather flow in the Estuary would be maintained by upstream flow and tidal influence despite the removal of power plant flow.

Advanced Treatment for Water Reclamation Plants

Implementation of advanced treatment at existing WRPs would have no impact on the diversity of species, or numbers of any species of animals.

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

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

Answer: **Potentially Significant**

Coyote Creek, San Gabriel River Reach 2, and the San Gabriel River Estuary each have a rare, threatened, or endangered species beneficial use designation. Reducing metals loading to these waterbodies will improve water quality and protect these beneficial uses. However, it is possible that direct or indirect impacts to special-status animal species in the watershed may occur during construction of structural treatment devices.

Infiltration Devices, Media Filters, and Diversion and Treatment
Because special-status animal species are protected by state and/or federal Endangered Species Acts, impacts to them would be considered potentially significant. Even though, it is expected that potential projects would occur in previously developed

areas it is possible for special-status species to occur in urban areas. If these species are present during activities such as ground disturbance, construction, operation and maintenance activities associated with the potential projects, it could conceivably result in direct impacts to special status species including the following:

- Direct loss of a sensitive 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

Responsible agencies should endeavor to avoid compliance measures that could result in significant impacts to unique, rare or endangered (special-status) species, should any such species be present at locations where such compliance measures might otherwise be performed, and instead opt for nonstructural BMPs in sensitive habitat areas. Mitigation measures, however, could be implemented to ensure that potentially significant impacts to special status animal species are less than significant. 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 special-status animal species in the site area are properly identified and protected as necessary. Focused protocol animal surveys for special-status animal species will be conducted at each site location.

If special-status animal species are potentially near the project site area, as required by the Endangered Species Act (ESA), two weeks prior to grading or the construction of facilities and per applicable USFWS and/or CDFG protocols, pre-construction surveys to determine the presence or absence of special-status species will be conducted. The surveys should extend 300 feet off site to determine the presence or absence of any special-status species adjacent to the project site. If special-status species are found to be present on the project site or within the 300 feet 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. Mitigation can include nighttime lighting shall be angled down and away from potential habitat areas. Furthermore, the use of prismatic glass coverings and cutoff shields is recommended to further prevent light spillover off site.

Regional Infiltration Systems and Regional Detention Facilities

Regional infiltration or detention of flow could eliminate in-stream habitats dependent on those flows. These changes may result in reduction of the numbers of any unique, rare or endangered species of animals. Proper project modeling, siting, and planning as discussed above can help mitigate impacts to the animal life. However reduction of nuisance flows may help return the flow to a more natural state.

Regional Natural Treatment Systems
Regional natural treatment systems could increase the diversity or number of animal species by creating habitat for those species. The installation of regional detention facilities may result in a temporary impact on the numbers of any unique, rare or endangered species of animals if they are found at the site of the installation. Proper project siting, and planning, discussed, above, can help mitigate impacts to the animal life.

Non Structural Controls
Non-structural BMPs and source reduction efforts would involve no change to the physical environment either directly or indirectly and would have no impact on the numbers of any unique, rare or endangered species of animals.

Alternative Cooling Technologies for Power Plants
Changing to alternative cooling technologies would be considered a positive impact, as it would return the Estuary, as well as the San Pedro Bay, to more natural flow conditions. Reducing copper loading to the Estuary will improve water quality and reduce aquatic life impacts in the Estuary. The staff report and technical memo for the Estuary model demonstrate that dry weather flow in the Estuary would be maintained by upstream flow and tidal influence despite the removal of power plant flow.

Advanced Treatment for Water Reclamation Plants
Construction activities associated with advanced treatment technologies could have similar impacts to migration or movement of animals as construction structural treatment devices. Similar mitigation measures can be 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 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)).

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

Answer: **Potentially Significant**

Infiltration Devices, Media Filters, and Diversion and Treatment
It is not reasonably foreseeable that implementation of structural treatment devices 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. Construction of these facilities would not considerably restrict wildlife movement. 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. Based on the waste load allocations for storm water permittees, it is most likely that structural BMPs would be sited in urbanized areas.

However, constructed structural treatment devices 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 structural treatment devices 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 USFWS and CDFG. The MBTA protects over 800 species including, geese, ducks, shorebirds, raptors, songbirds, and many other relatively common species.

The following mitigation measures should be implemented to reduce or avoid potential project-level impacts to the migration or movement of animals:

If structural treatment devices are implemented at locations where they would foreseeably adversely impact species migration or movement patters, 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 USFWS and/or CDFG 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 USFWS or CDFG. 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.

Regional Infiltration Systems and Detention Facilities

Construction of reasonably foreseeable infiltration systems and detention facilities likely would not restrict wildlife movement. In some cases, detention basins may actually provide important habitat. Proper project siting and planning, discussed above, mitigate impacts to the animal life.

Regional Natural Treatment Systems

It is not reasonably foreseeable that implementation of regional natural treatment facilities will result in the introduction of a new animal species or impact wildlife corridors or crossings. Regional NTS, such as constructed wetlands will create habitat. Construction activities associated with the implementation of regional natural treatment facilities may impact migratory avian species. Proper project siting and planning, discussed above, mitigate impacts to the animal life.

Non Structural Controls

Non-structural BMPs and source reduction efforts would involve no change to the physical environment either directly or indirectly and would not result in the introduction of new species of animals into an area, or in a barrier to the migration or movement of animals.

Alternative Cooling Technologies for Power Plants

Construction activities associated with alternative cooling technologies could have similar impacts to migration or movement of animals as construction structural treatment devices. Similar mitigation measures can be applied.

Advanced Treatment for Water Reclamation Plants

Construction activities associated with advanced treatment technologies could have similar impacts to migration or movement of animals as construction structural treatment devices. Similar mitigation measures can be 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 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)).

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

Answer: **Potentially Significant**

Infiltration Devices, Media Filters, Diversion and Treatment, and Advanced Treatment
Implementation of the TMDL will considerably improve fish habitat by removing metals from the San Gabriel River and Estuary and Los Cerritos Channel.

It is not reasonably foreseeable that the implementation of structural BMPs and treatment facilities will result in the deterioration of existing fish and or wildlife habitat. Facilities will be located in previously developed areas and would not result in the removal of sensitive biological habitats. However, in an abundance of caution, when project sites are selected by the TMDL implementing agencies, a site specific California Natural Diversity Database search could be conducted to ensure that no sensitive biological habitats are located on the site.

See also response to Animal Life 5.a and 5.b.

Regional Infiltration Systems
Regional infiltration systems increase infiltration rates of stormwater runoff which may potentially change the fish and wildlife habitat within the stream channels by changing the flow regime of the creeks. Regional infiltration systems could impact in-stream species dependant on those flows. Animal species that thrived in the creeks in the absence of nuisance flows should not be adversely impacted by habitat changes if the flows are eliminated. No adverse impacts are expected because the elimination of nuisance flows would return the stream bed's wet weather flows to a more natural, pre-development condition. This in turn would facilitate the return of the stream's animal community to a more natural, pre-development condition and could impede the propagation of water-loving nonnative and invasive animal species. Impeding the propagation of invasive species is not a negative impact.

Regional Detention Facilities
Reasonably foreseeable regional detention facilities would not likely result in deterioration to existing fish and wildlife habitat. In some cases, detention basins may provide important habitat for animals. Detention facilities, by design, impede or slow overland flow to the river. Proper project modeling, siting, and planning can help mitigate impacts to the animal life.

Regional Natural Treatment Systems
Implementation of NTS will considerably improve fish habitat by removing bacteria from the San Gabriel River and Los Cerritos Channel. Furthermore, NTS involves the creation of wildlife habitat. A change in the amount of surface water may occur. Free Surface flow wetlands may impede or slow overland flow if not properly designed and maintained and could change the amount of surface water. Reductions in dry and wet-weather flow could have potential negative impacts on minimum flows required to support and protect the wetland habitat. Mitigation measures to maintain minimal flow to support habitat related beneficial uses could be reviewed and approved by the CDFG and USFWS.

Non Structural Controls
Non-structural BMPs and source reduction efforts would involve no change to the physical environment either directly or indirectly and would have no impact on existing fish or wildlife habitat.

Alternative Cooling Technologies for Power Plants
Changing to alternative cooling technologies would be considered a positive impact, as it would return the Estuary, as well as the San Pedro Bay, to more natural flow conditions. Reducing copper loading to the Estuary will improve water quality and reduce aquatic life impacts in the Estuary. The staff report and technical memo for the Estuary model demonstrate that dry weather flow in the Estuary would be maintained by upstream flow and tidal influence despite the removal of power plant flow.

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

Answer: **Potentially Significant**

Infiltration Devices, Media Filters, Diversion and Treatment, Detention Facilities, and Natural Treatment Systems
Construction of infiltration devices, media filters, diversion and treatment facilities, regional detention facilities, and natural treatment systems 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. Maintenance is expected to generate 2-4 vehicle trips per year, which is not expected to increase ambient noise levels noticeably. Maintenance involves removal of trash and debris and vegetation management, which also would not significantly increase ambient noise levels.

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.

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

Implementation may also result in increased noise levels during operation and maintenance of structural BMPs or treatment facilities, including pumps used for diversion of water and vacuum trucks and pumps for removing liquids. The specific project impacts can be mitigated by standard noise abatement techniques including siting facilities away from receptors, installing sound barriers and insulation to reduce noise from pumps, motors, fans, etc., designing passive BMPs that do not require frequent maintenance, scheduling of maintenance during mid-day hours, and noise monitoring to ensure levels remain below acceptable levels. Storm water treatment

BMPs should be design with sufficient hydraulic head to operate by gravity and eliminate the need for pumps.

Non Structural Controls
Increased street sweeping could cause increased noise levels, which can be mitigated by scheduling sweeping during mid-day hours and noise monitoring to ensure levels remain below acceptable levels.

Alternative Cooling Technologies for Power Plants
The use of alternative cooling technologies could result in increased noise levels if this were chosen as a compliance strategy for the power plants. Noise from cooling towers can be generated by falling water inside the towers and/or fan or motor noise. However, power plant sites generally do not result in off-site levels more than 10 decibels above background. Potential noise impacts would be of the level to cause adverse public reactions, but not environmental or human health concerns. This is because of the broadband character of the cooling tower noise, which is largely indistinguishable and less obtrusive than noise associated with other operations at power plants. Noise abatement features, such as low noise fans, are an integral component of modern cooling tower designs and should be incorporated at the project level.

Advanced Treatment for Water Reclamation Plants
Construction of advanced treatment facilities could involve similar noise generating construction activities as for structural treatment devices. The same mitigation measures proposed for structural treatment devices could be applied to reduce impacts from replocating discharge outfalls.

This SED impact analysis concludes that there are potentially significant impacts from implementation of the TMDL, but notes that there are mitigation measures available to reduce potentially significant environmental impacts to less than significant levels. However, implementation of these mitigation measures are within the responsible and jurisdiction of the responsible agencies listed in this TMDL (Title 14, California Code of Regulations, Section 15091(a)(2)). These agencies have the ability to implement these mitigation measures, can and should implement these mitigation measures, and are required under CEQA to implement mitigation measures unless mitigation measures are deemed infeasible through specific considerations (Title 14, California Code of Regulations, Section 15091(a)(3)).

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

Answer: **Potentially Significant**

Implementation alternatives may entail short-term disturbances during construction, operation, and maintenance of structural BMPs, diversion and treatment facilities, nonstructural BMPs, alternative cooling technologies, or advanced treatment at existing WRPs. 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 responsible and jurisdiction of the responsible agencies listed in this TMDL (Title 14, California Code of Regulations, Section 15091(a)(2)). These agencies have the ability to implement these mitigation measures, can and should implement these mitigation measures, and are required under CEQA to implement mitigation measures unless mitigation measures are deemed infeasible through specific considerations (Title 14, California Code of Regulations, Section 15091(a)(3)).

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

Answer: **Potentially Significant**

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 structural BMPs or 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.

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)).

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

Answer: **Potentially Significant**

<u>Infiltration Devices, Media Filters, Diversion and Treatment, and Regional BMPs</u>
The installation of infiltration devices, media filters, diversion and treatment facilities, or other structural treatment devices 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). Infiltration trenches also are appropriate for ultra-urban applications; essentially all of the surface above a subsurface infiltration trench can be used as parking or public areas. Surface infiltration trenches are better suited to roadside application where space is at less of a premium. (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.

Commentors on the previously adopted TMDL asserted that adequate land might not be available for multiple structural compliance measures, particularly from this and subsequent TMDLs. The infeasibility of specific compliance measures, however, is not subject to CEQA analysis, absent a showing that such infeasibility could result in alternatives that do have attendant adverse environmental impacts. No evidence or suggestion of such alternatives were voiced, however. Upon inquiry, the issue was admittedly one of cost, rather than environmental degradation, which is not subject to CEQA analysis.

Non Structural Controls

Non-structural BMPs and source reduction efforts would involve no change to the physical environment either directly or indirectly and would have no impact on land use.

Alternative Cooling Technologies for Power Plants

If chosen as a compliance strategy, alternative cooling technologies for power plants could be placed on the existing facility site. At the Alamitos Generating Station, nearby parcels zoned for industrial use may need to be secured for locating new cooling towers (Tetratech, 2008).

Advanced Treatment for Water Reclamation Plants

Advanced treatment would be implemented on existing WRP sites and would not result in substantial alterations or adverse impacts to present or planned land use.

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)).

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

Answer: **Less Than Significant**

Infiltration Devices, Media Filters, Diversion and Treatment, and Regional BMPs
Installation and maintenance of structural treatment devices are not likely to 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.

If an integrated water resources approach is employed, implementation of the TMDL would have positive environmental impacts by decreasing demand for imported water supply by infiltrating to recharge aquifers.

Non Structural Controls
Non-structural BMPs and source reduction efforts would involve no change to the physical environment either directly or indirectly and would have no impact on natural resources.

Alternative Cooling Technologies for Power Plants
If chosen as a compliance option, conversion to cooling towers could result in decreased power plant efficiency, which could require power plants to increase natural gas consumption to increase onsite electricity generation. The amount of additional gas consumption would likely be insignificant in comparison to the existing gas consumption to operate the power plants. The extent of this potential impact for the specific power plants subject to this TMDL and the comparison with existing energy and fuel consumption impacts would be subject to a project-level CEQA analysis.

Advanced Treatment for Water Reclamation Plants
If MF-RO facilities were chosen as a compliance option, they could require increased energy consumption. However, the development of high performance low pressure reverse osmosis membranes has resulted in a significant reduction of energy use and it is not expected that implementation of advanced treatment facilities would result in an increase in the rate of use of any natural resources.

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

Answer: **Less Than Significant**

See 9. a.

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

Answer: **Potentially Significant**

Infiltration Devices and Diversion and Treatment

Implementation of infiltration devices or diversion and treatment 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 California Occupational Health and Safety Administration (CalOSHA) and local safety regulations during installation, operation, and maintenance of these systems would prevent any worksite accidents or accidents involving the release of hazardous materials into the environment.

Treatment plants may use disinfectants and caustics during operation and there is a potential risk that these materials might escape. Potential impacts should be considered and mitigated at the project level. Proper maintenance and oversight and the use of safer substitute materials in treatment plants could mitigate any risk of escape of hazardous materials.

Media Filters

Implementation of 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 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.

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. The sand filter medium should be periodically replaced to avoid accumulation of metals to hazardous levels (FHWA, 2007). Contaminated sand removed from sand filters can be removed to landfill (WERF, 2005).

Maintenance of underground media filters could 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.

Regional Infiltration Systems, Detention Facilities, and Agricultural BMPs

There is the possibility that hazardous materials (e.g., oil and gasoline) may be present depending on equipment used to install regional infiltration systems, detention facilities, and regional agricultural BMPs, but potential risks of exposure can be mitigated with proper handling and storage procedures. All risks of exposure would be short term and would be eliminated with the completion of installation. Compliance with the requirements of CalOSHA and local safety regulations during installation 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. During installation the site can be properly protected with fencing and signs to prevent accidental health hazards.

Regional Natural Treatment Systems

Implementation of regional natural treatment systems 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. Fluids and sediment must be removed from constructed wetlands to ensure proper flow-through of runoff and could pose a risk of release of hazardous substances; mitigation measures for this impact include proper handling and timely disposal in an appropriate disposal site.

Non Structural Controls

Non-structural BMPs and source reduction efforts would involve no change to the physical environment either directly or indirectly and would have no risk of an explosion or the release of hazardous substances.

Alternative Cooling Technologies for Power Plants

The potential construction-related impacts for structural treatment devices are reasonably foreseeable for alternative cooling technologies. Mitigation measures discussed for infiltration trenches, diversion and treatment, and media filters could be applied to construction of alternative cooling technologies.

Advanced Treatment for Water Reclamation Plants

The potential construction-related impacts for structural treatment devices are reasonably foreseeable for construction of advanced treatment facilities. Mitigation measures discussed for infiltration trenches, diversion and treatment, and media filters could be applied to construction of advanced treatment facilities at WRPs.

If chosen as a compliance strategy, precipitation can result in the increase of total dissolved solids in the wastewater and the generation of sludge which may require treatment. Special handling and disposal of sludge would mitigate these 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 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)).

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

Answer: **No impact**

This proposal sets waste load and load allocations to achieve water quality standards. 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 include a mixture of structural and nonstructural BMPs, alternative cooling technologies, and advanced treatment for WRPs and would not directly or indirectly induce population growth in the area, displace existing housing, or displace people. Such facilities would generally be installed at or below grade and are appropriate for highly urbanized areas where space is limited. Therefore, it is not reasonably foreseeable that the installation and maintenance of structural treatment facilities would directly or indirectly induce population growth or displace people. Increased infiltration would recharge groundwater and increase water supply, but this would not likely induce growth, rather it would decrease reliance on imported water. Integrated approaches used to implement this TMDL would, through reclamation and groundwater recharge, provide improved water quality and increase local water supplies for future generations. Finally, any potential impacts to population due to diversion of resources are not “environmental” impacts that involve changes in the physical environment.

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

Answer: **No Impact**

<u>Infiltration Devices</u>
Implementation of infiltration devices would not require displacement of existing housing. This is because they are suitable for an ultra-urban setting and can be specifically designed to accommodate limited land area. Infiltration trenches are generally suited for low- to medium-density residential and commercial developments and can be incorporated in multi-use areas such as along parking lot perimeters, parking lots,

residential areas, commercial areas, and open space areas. Trenches can be placed into the margin perimeter, or other unused areas of developed sites, making them particularly suitable for retrofitting into existing developments or in conjunction with other BMPs (US EPA, 2004). Furthermore, based on the estimated size constraints of infiltration trenches, the area required to site these facilities would be significantly less than the area of the watershed. It is not reasonably foreseeable that there would be a need to displace housing for this limited area.

To the extent that these devices, if employed, may conceivably require the displacement of available housing, it is not reasonably foreseeable that the responsible agencies would install such devices. Rather, an agency would foreseeably opt for other structural or non-structural control measures.

Media Filters

Implementation of media filters would not require displacement of existing housing. This is because sand filters are well adapted for applications with limited land area. They are most useful where multiple uses of land area are required such as automobile parking or for public parks (FHWA, 2007). Furthermore, based on the estimated size constraints of sand filters, the area required to site these facilities would be significantly less than the area of the watershed. It is not reasonably foreseeable that there would be a need to displace housing for this limited area.

To the extent that these devices, if employed, may conceivably require the displacement of available housing, it is not reasonably foreseeable that the responsible agencies would install such devices. Rather, an agency would foreseeably opt for other structural or non-structural control measures.

Diversion and Treatment, and Regional BMPs

Implementation of diversion and treatment facilities and regional BMPs would not require displacement of existing housing. Projects can be located in urbanized areas and serve multiple purposes. To the extent that these devices, if employed, may conceivably require the displacement of available housing, it is not reasonably foreseeable that the responsible agencies would install such devices. Rather, an agency would foreseeably opt for other structural or non-structural control measures.

Non Structural Controls

Non-structural BMPs and source reduction efforts would involve no change to the physical environment either directly or indirectly and would have no impact on housing.

Alternative Cooling Technologies for Power Plants

Pipeline to carry cooling water to power plants might be placed in residential areas; however, pipeline would likely be placed under streets or rights of way and would not displace housing. Cooling water storage facilities would likely be placed on site. To the extent that cooling water storage facilities may conceivably require the displacement of available housing, it is not reasonably foreseeable that the responsible agencies would install such devices.

Advanced Treatment for Water Reclamation Plants

Implementation of advanced treatment facilities would not require displacement of existing housing because these facilities would be placed on existing WRP sites.

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

Answer: **Potentially Significant**

Infiltration Devices, Media Filters, Diversion and Treatment, and Regional BMPs
The proposal may result in additional vehicular movement during installation of infiltration devices, media filters, diversion and treatment facilities, and regional BMPs. 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. As discussed under air impacts, maintenance of these devices could generate an additional 240 trips per day, watershed-wide, which is not a substantial increase in vehicular movement. Consequently, the proposed project would be in conformance with the Los Angeles County CMP and this impact would be 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.

To the extent that significant adverse traffic impacts occur in a given locality, those effects are already occurring in the metals TMDLs implementation areas and should be considered baseline impacts.

Non Structural Controls
The number of trips generated by increased street sweeping will depend of the magnitude of increase in sweeping frequency determined by any responsible agency choosing to use this implementation alternative. It is not anticipated that such increases will have a significant impact on traffic and transportation. However, in the unlikely event that traffic and or transportation systems are negatively compromised, mitigation measures similar to those described for the structural treatment devices could be applied. Potential impacts could be mitigated by scheduling sweeping during mid-day hours or avoiding peak traffic hours.

Alternative Cooling Technologies for Power Plants
Construction of alternative cooling technologies would likely occur on the power plant sites and would not generate substantial additional vehicular movement. To the extent that switching to alternative cooling technologies results in additional vehicular movement during construction of a pipeline to carry cooling water, mitigation measures similar to those described for the structural treatment devices could be applied.

Advanced Treatment for Water Reclamation Plants
Construction of advanced treatment technologies would likely occur on the WRP sites and would not generate substantial additional vehicular movement.

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)).

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

Answer: **Potentially Significant**

Infiltration Devices, Media Filters, Diversion and Treatment, and Regional BMPs
Compliance with the TMDL may result in alterations to existing parking facilities to incorporate infiltration or other structural BMPs to treat storm water. 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 provide functionally similar parcel for use as offsite parking to mitigate potential adverse parking impacts.

Maintenance of structural BMPs could reduce available parking in an area during certain times of the day, week, and/or month, depending on frequency of operation and/or maintenance events. Maintenance events should be scheduled to be performed at the same time as other maintenance activities performed by the municipalities, and/or at times when these activities have lower impact, such as periods of low traffic activity and parking demand.

Non Structural Controls
Non-structural BMPs and source reduction efforts would involve no change to the physical environment either directly or indirectly and would have no impact on existing parking facilities or demand for new parking.

Alternative Cooling Technologies for Power Plants
Potential compliance strategies for power plants would likely occur onsite and are not expected to affect existing parking facilities or demand for new parking.

Advanced Treatment for Water Reclamation Plants
Potential compliance strategies for WRPs would occur onsite and are not expected to affect existing parking facilities or demand for new parking.

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)).

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

Answer: **Potentially Significant**

Infiltration Devices, Media Filters, Diversion and Treatment, and Regional BMPs

Depending on the implementation strategy chosen, the proposal may result in temporary alterations to existing transportation systems during construction of structural BMPs, storm water 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 infiltration trenches and 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.

Non Structural Controls
Non-structural BMPs and source reduction efforts would involve no change to the physical environment either directly or indirectly and would have no impact on existing transportation systems.

Alternative Cooling Technologies for Power Plants
Construction of alternative cooling technologies would likely occur onsite and are not expected to affect existing transportation systems. To the extent that switching to alternative cooling technologies results in additional vehicular movement during construction of a pipeline to carry cooling water, mitigation measures similar to those described for the structural treatment devices could be applied.

Advanced Treatment for Water Reclamation Plants
Potential compliance strategies for WRPs would occur onsite and are not expected to result in substantial impacts upon existing transportation systems.

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)).

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**

See response to "Transportation/Circulation." 13.a. and 13.c.

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

Answer: **Potentially Significant**

Infiltration Devices, Media Filters, Diversion and Treatment, and Regional BMPs
The proposal may potentially result in temporary alterations to rail transportation during construction of storm water 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.

Non Structural Controls
Non-structural BMPs and source reduction efforts would involve no change to the physical environment either directly or indirectly and would have no impact on waterborne, rail or air traffic.

Alternative Cooling Technologies for Power Plants
Potential compliance strategies for power plants would likely occur onsite and are not expected to affect waterborne, rail or air traffic.

Advanced Treatment for Water Reclamation Plants
Potential compliance strategies for WRPs would occur onsite and are not expected to affect waterborne, rail or air 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 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)).

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

Answer: **Potentially Significant**

Infiltration Devices, Media Filters, Diversion and Treatment, and Regional BMPs
The foreseeable methods of compliance may entail short-term disturbances during construction of structural BMPs, storm water 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.

Non Structural Controls
Non-structural BMPs and source reduction efforts would involve no change to the physical environment either directly or indirectly and would have no impact on traffic hazards to motor vehicles, bicyclists or pedestrians.

Alternative Cooling Technologies for Power Plants
Foreseeable methods of compliance, including alternative cooling technologies, may entail short-term disturbances during construction. Appropriate mitigation methods similar to those described for structural treatment devices can be applied during construction.

Advanced Treatment for Water Reclamation Plants
Implementation of advanced treatment would occur onsite at existing WRPs and would have no impact on traffic hazards to motor vehicles, bicyclists or pedestrians.

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)).

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

Answer: **Potentially Significant**

Infiltration Devices, Media Filters, Diversion and Treatment, and Regional BMPs
It is not reasonably foreseeable that this proposal will have an effect upon or result in a need for new or altered governmental facilities for fire 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 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.

Non Structural Controls
Non-structural BMPs and source reduction efforts would involve no change to the physical environment either directly or indirectly and would have no impact on fire protection.

Alternative Cooling Technologies for Power Plants
Foreseeable methods of compliance, including alternative cooling technologies, may entail short-term disturbances during construction. Appropriate mitigation methods similar to those described for structural treatment devices can be applied during construction.

Advanced Treatment for Water Reclamation Plants
Potential compliance strategies for WRPs would occur onsite and are not expected to entail disturbances to traffic or delays in emergency response times.

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)).

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

Answer: **Potentially Significant**

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

Any potential impact to police protection due to diversion of resources is not an "environmental" impact that involves changes in the physical environment.

There is potential for temporary delays in response time of police vehicles due to road closure/traffic congestion during construction activities. The responsible agencies could notify local emergency service providers of construction activities and road closures and could coordinate with local providers to establish alternative routes and appropriate signage. Most jurisdictions have in place established procedures to ensure safe passage of emergency vehicles during periods of road maintenance, construction, or other attention to physical infrastructure, and there is no evidence to suggest that installation of structural devices would create any more significant impediments than such other ordinary activities.

Non Structural Controls
Non-structural BMPs and source reduction efforts would involve no change to the physical environment either directly or indirectly and would have no impact on police protection.

Alternative Cooling Technologies for Power Plants
Foreseeable methods of compliance, including alternative cooling technologies, may entail short-term disturbances during construction. Appropriate mitigation methods similar to those described for structural treatment devices can be applied during construction.

Advanced Treatment for Water Reclamation Plants
Potential compliance strategies for WRPs would occur onsite and are not expected to entail disturbances to traffic or delays in emergency response times.

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)).

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

Answer: **Less than Significant**

Proposed implementation strategies for this TMDL include stormwater best management practices, storm drain diversions and treatment strategies, pollution prevention, alternative cooling technologies, and advanced treatment of wastewater. 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.

Depending on the implementation strategy chosen, school facilities may offer opportunities for storm water collection and reuse through structural BMPs. Maintenance of such 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. To the extent that structural BMPs pose a risk, standard safety measures should be employed including fencing, other physical safety structures, signage, and other physical impediments designed to promote safety and minimize accidents.

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: **Less than Significant**

Proposed implementation strategies for this TMDL include stormwater best management practices, storm drain diversions and treatment strategies, pollution prevention, alternative cooling technologies, and advanced treatment of wastewater. Depending on the implementation strategy chosen, the proposal may result in the need for new or altered parks or other recreational facilities to provide land for storage, diversion or treatment facilities for urban and storm water runoff. Projects may be designed to increase parks and wildlife habitat areas and to improve water quality.

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: **Less Than Significant**

The proposal will result in the need for increased maintenance of public facilities and, specifically, storm water treatment and/or diversion facilities or structural BMPs. Non-structural BMPs, such as increased storm drain catch basin cleanings and improved street cleaning, would require additional road maintenance as well. 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. Nevertheless, an increased cost of maintenance is not an “environmental” impact that involves a change in the physical environment. Increased street sweeping and storm drain catch basin cleanings would result in positive environmental impacts through cleaner streets. Potentially significant negative impacts from increased street sweeping resulting in increased air emissions are addressed in 2.a.

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

Answer: **Less Than Significant**

The proposal will result in the need for increased monitoring to track compliance with the TMDL. Non-structural BMPs, such as education and outreach, would result in the need for new or altered governmental services. In addition, as described in 14.e., additional maintenance would be required for street sweeping and structural BMP maintenance. Potentially significant negative impacts from increased street sweeping resulting in increased air emissions, are addressed in 2.a. Nevertheless, increased costs due to these types of alterations to governmental services are not “environmental” impacts that involve a change in the physical environment. Increased public education and outreach regarding recycling, proper disposal of wastes, and other source control measures resulting in improved water quality are positive environmental impacts.

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

Answer: **Potentially Significant**

Infiltration Devices, Media Filters, Diversion and Treatment, and Regional BMPs
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. 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. Urban runoff plants are another alternative implementation strategy, which would require additional electricity, but less energy intensive treatment could be employed. In any event, such plants are not a requirement to meet the TMDL.

Non Structural Controls
Non-structural BMPs and source reduction efforts would involve no change to the physical environment either directly or indirectly and would have no impact on energy.

Alternative Cooling Technologies for Power Plants
If chosen as a compliance option, conversion to cooling towers could result in decreased efficiency, which would require power plants to increase natural gas consumption to increase onsite electricity generation or purchase electricity form the grid. Energy penalties include turbine efficiency penalty, fan energy requirements, and pumping energy usage. When converting from once-through to recirculating wet towers, the differences in pumping energy requirements may be relatively small. The extent of this potential impact for the specific power plants subject to this TMDL and the comparison with existing energy and fuel consumption impacts would be subject to a project-level CEQA analysis.

Advanced Treatment for Water Reclamation Plants
If MF-RO facilities were chosen as a compliance option, they could require increased energy consumption. However, the development of high performance low pressure reverse osmosis membranes has resulted in a significant reduction of energy use.

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)).

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

Answer: **Potentially Significant**

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: **No Impact**

Infiltration Devices, Media Filters, Diversion and Treatment, and Regional BMPs
It is not reasonably foreseeable that implementation of diversion and/or treatment of urban and storm water runoff, the use of storm water BMPs or pollution control measures 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.

Non Structural Controls
Non-structural BMPs and source reduction efforts would involve no change to the physical environment either directly or indirectly and would have no impact on utilities and service systems.

Alternative Cooling Technologies for Power Plants
If cooling towers were chosen as a compliance option, potential impacts to utilities and service systems would be due to the potential increase in energy usage by the towers. However, the amount of additional electricity generation and gas consumption to operate the cooling towers would likely be insignificant in comparison to the existing gas consumption to operate the power plants such that new or altered utilities would be required. See response to "15. Energy. a."

Advanced Treatment for Water Reclamation Plants
If MF-RO facilities were chosen as a compliance option, they could require increased energy consumption. However, the development of high performance low pressure reverse osmosis membranes has resulted in a significant reduction of energy use. Advanced treatment facilities should not result in the use of substantial amounts of energy 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: communications systems?

Answer: **No Impact**

Implementation alternatives may entail short-term construction of structural BMPs, diversion and treatment facilities, nonstructural BMPs, or alternative cooling

technologies. 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**

Infiltration Devices, Media Filters, Diversion and Treatment, and Regional BMPs
It is not reasonably foreseeable that implementation of diversion and/or treatment of urban and storm water runoff, the use of storm water BMPs and pollution control measures will result in a substantial increase in the need for new systems, or substantial alterations to water utilities. Potential projects associated compliance with the metals 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 integrated water resources approach 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.

Non Structural Controls
Non-structural BMPs and source reduction efforts would involve no change to the physical environment either directly or indirectly and would have no impact on utilities and service systems.

Alternative Cooling Technologies for Power Plants
If alternative cooling technologies, including wet-cooling towers, were chosen as a compliance strategy, there could be an increased demand for public water supply. However, steam electric generating facilities using once-through salt water can reduce water usage by 70 to 96% by converting to closed-cycle, recirculating cooling systems. It is not reasonably foreseeable that the increased water demand would result in the need for new water systems, or substantial alterations to existing water utilities. If the power plants were unable to fully supply wet cooling towers with existing reclaimed water supplies, they could look to alternative sources. Power plants may work with other responsible agencies under the TMDL to pursue an integrated water resources approach. To the extent that potable water would be used in wet cooling towers, the amount of required water could be mitigated through the installation of flow reduction technologies such as recirculating cooling lakes, cooling canals, or hybrid wet-dry cooling towers.

Advanced Treatment for Water Reclamation Plants
Implementation of advanced treatment technology at existing WRPs will not significantly increase the demand on the current water supply facilities or require new water supply 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 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)).

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: **No Impact**

Implementation of this Basin Plan amendment involves the diversion and/or treatment of urban and storm water runoff, the use of storm water BMPs, pollution control measures, and implementing advanced wastewater treatment technologies at existing WRPs to control loading of metals to the San Gabriel River and its tributaries. It is not foreseeable that this proposal will result in a substantial increase need for new systems, or substantial alterations to sewers or septic tanks. If diversion of runoff to a treatment plant is chosen as an implementation strategy, it is not likely that such a treatment plant would alter or expand its design capacity to accommodate additional the flow. Implementation of advanced treatment technologies at existing WRPs would not require an expansion to the design capacity or other substantial alterations.

A commentor on the previously adopted TMDL alleged that absent a once-through cooling water system, inplant process wastewater would likely need to be discharged to a sewer system and a new sewer connection and possibly a new sewer line would be required. However, a new sewer line or connection would not constitute a substantial alteration to a sewer utility. A substantial alteration to a sewer system would involve an increase in capacity of a wastewater treatment plan, for example, and the amount of inplant process wastewater generated by the power plants would not require an expansion in the capacity. For example, Haynes discharges 498,000 gallons per day of miscellaneous wastewater (excluding 67,000 gallons of reverse osmosis reject). Furthermore, if an expansion was required to accommodate, it is not likely that a wastewater treatment plant would accept the discharge.

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

Answer: **Potentially Significant**

Infiltration Devices, Media Filters, Diversion and Treatment, and Regional BMPs
Implementation of diversion and treatment, infiltration devices, media filters, or other structural BMPs could result in substantial alterations to storm water 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. In addition, any device installed in a storm drain, especially an older, under-capacity drain could have a negative effect on the drain's ability to convey runoff. These negative impacts can be mitigated through design of devices with overflow/bypass structures, by performing regular maintenance of these devices and, if necessary, enlargement of the storm drain upstream of devices. Notably, infiltration devices will likely reduce peak floodwater flows, which would be a public benefit, as some of these peak flows constitute a potential flooding hazard.

Overall, the significant amount of installation required by structural BMPs will substantially alter the storm water drainage system. Implementation of the TMDL could potentially lead to the development of a storm water utility. These alterations will have a positive environmental impact with the resulting reduced pollutant loads from urban and storm water runoff.

Non Structural Controls
Non-structural BMPs and source reduction efforts would involve no change to the physical environment either directly or indirectly and would have no impact on utilities and service systems.

Alternative Cooling Technologies for Power Plants
Alternative cooling technologies will not significantly impact urban runoff and would not result in a need for new systems or substantial alterations to storm water drainage.

Advanced Treatment for Water Reclamation Plants
Implementation of advanced treatment at existing WRPs will not significantly impact urban runoff and would not result in a need for new systems or substantial alterations to storm water drainage.

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)).

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

Answer: **Potentially Significant**

Implementation of this Basin Plan amendment involves the potential diversion and/or treatment of urban and storm water runoff, the use of storm water BMPs, pollution control measures, alternative power plant cooling technologies, and implementation of advanced treatment at existing WRPs.

To the extent that BMPs collect sediment which contain metals concentrations in excess of regulatory concentrations, these sediments may be subject to solid or hazardous waste disposal requirements. In sand filters, the filter medium should be regularly replaced so that metals so do not accumulate to the point where their level is considered hazardous. Generally, the sand removed from sand filters can be removed to a landfill (WERF, 2005).

Nominal amounts of construction debris may also be generated by installation of structural BMPs, alternative power plant cooling technologies, discharge outfalls and advanced treatment facilities at existing WRPs. 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 storm water 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.

If chosen as a compliance strategy, precipitation at WRPs to remove metals at existing WRPs can result in the increase of total dissolved solids in the wastewater and the generation of sludge which may require treatment. Special handling and disposal of sludge would mitigate these 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 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)).

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

Answer: **Potentially Significant**

It is reasonably foreseeable that hazards or hazardous materials could be encountered during the installation of diversion and treatment facilities, storm water BMPs, alternative

power plant cooling technologies, discharge outfalls and implementation of advanced treatment at existing WRPs. 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 these 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 CalOSHA and local safety regulations during installation, operation, and maintenance of these systems would prevent any worksite accidents or accidents involving the release of hazardous materials into the environment, which could harm the public, nearby residents and sensitive receptors such as schools.

Implementation of storm water detention and treatment BMPs 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. Caltrans recommends that infiltration trenches infiltrate within 72 hours (Caltrans, 2002) and Washington State Department of Ecology recommends that sand filters empty in 24 hours (WA DOE, 2005). Certain storm water 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). 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, 2003b). Netting can be installed over devices to further mitigate vector production.

BMPs that collect sediment could potentially contain elevated metals concentrations. Potential health hazards associated with removing collected material and maintaining BMPs can be mitigated with proper handling and storage procedures and standard industrial hygiene practices such as protective skin barriers and respirators. In sand filters, the filter medium should be regularly replaced so that metals so do not accumulate to the point where their level is considered hazardous.

If chosen as a compliance strategy, precipitation at WRPs to remove metals at existing WRPs can result in the increase of total dissolved solids in the wastewater and the generation of sludge which may require treatment. Special handling and disposal of sludge would mitigate any potential health hazzard impacts.

Unguarded retention basins and other structural BMPs could expose people to potential falling hazards. Such hazards could be avoided by installing fencing and barricades around structural BMPs. Potential health hazards attributed to installation and maintenance of structural BMPs can be mitigated by use of CalOSHA construction and maintenance, health and safety guidelines. Potential health hazard attributed to BMP maintenance can be mitigated through Cal OSHA industrial hygiene guidelines. For

example, access must be provided to all chambers in the design, and the design must conform to standards established by OSHA for worker safety. (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 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)).

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

Answer: **Potentially Significant**

See response to 17 Human Health a.

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

Answer: **Potentially Significant**

Infiltration Devices and Media Filters
Structural BMPs such as sand filters and infiltration trenches are surface or subsurface devices and therefore it is not foreseeable that installing them at a particular location will result in an impairment of scenic vistas or views open to the public.

Diversion and Treatment and Regional BMPs
It is reasonably foreseeable that treatment facilities could obstruct a scenic vista or view open to the public. However, 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). In addition, projects may be located so as to avoid potential impacts to scenic vistas. Finally, visual and scenic impairments on the San Gabriel River and the Estuary and in the Los Cerritos Channel are existing impacts, and should be considered baseline conditions.

Non Structural Controls
Non-structural BMPs and source reduction efforts would involve no change to the physical environment either directly or indirectly and would have no impact on aesthetics.

Alternative Cooling Technologies for Power Plants
It is reasonably foreseeable that cooling towers could obstruct a scenic vista or view open to the public. However, standard architectural and landscape architectural practices can be implemented to reduce impacts. In addition, projects may be located so as to avoid potential impacts to scenic vistas. Finally, visual and scenic impairments on the San Gabriel River and the Estuary are existing impacts, and should be considered baseline conditions.

Advanced Treatment for Water Reclamation Plants
If MF-RO was chosen as a compliance strategy and brine disposal was required, the construction of pipeline and outfall structures could cause temporary impacts to views. The change in visual quality would not be significant because it is short term and would occur in an already developed area. Pipelines and outfall structures would be installed at or below grade and therefore it is not foreseeable that installing them at a particular location will result in a long-term impairment of a scenic vista or view open to the public.

This SED impact analysis concludes that there are potentially significant impacts from implementation of the TMDL, but notes that there are mitigation measures available to reduce potentially significant environmental impacts to less than significant levels. However, implementation of these mitigation measures are within the responsible and jurisdiction of the responsible agencies listed in this TMDL (Title 14, California Code of Regulations, Section 15091(a)(2)). These agencies have the ability to implement these mitigation measures, can and should implement these mitigation measures, and are required under CEQA to implement mitigation measures unless mitigation measures are deemed infeasible through specific considerations (Title 14, California Code of Regulations, Section 15091(a)(3)).

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

Answer: **Potentially Significant**

Infiltration Devices and Media Filters
Structural BMPs, such as sand filters and infiltration trenches, 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). However, many structural BMPs can be designed to provide habitat, recreational areas, and green spaces in addition to improving storm water quality. Standard architectural and landscape architectural practices can be implemented to reduce impacts from aesthetically offensive structures. 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, any more than adding any other public structure. Improved lighting and enforcement of current

vandalism regulations may decrease vandalized structures. Below grade structures, such as subsurface sand filters and infiltration trenches, are safe for application in public areas and are relatively vandal-proof (FHWA, 2007).

Diversion and Treatment and Regional BMPs
It is reasonably foreseeable that treatment facilities could result in aesthetically offensive sites. However, 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). In addition, projects may be located so as to avoid potential impacts to scenic vistas. Finally, visual and scenic impairments on the San Gabriel River and the Estuary are existing impacts, and should be considered baseline conditions.

Non Structural Controls
Non-structural BMPs and source reduction efforts would involve no change to the physical environment either directly or indirectly and would have no impact on aesthetics.

Alternative Cooling Technologies for Power Plants
It is reasonably foreseeable that cooling towers could result in aesthetically offensive sites. However, standard architectural and landscape architectural practices can be implemented to reduce impacts. Visual and scenic impairments on the San Gabriel River and the Estuary are existing impacts, and should be considered baseline conditions.

Advanced Treatment for Water Reclamation Plants
If MF-RO was chosen as a compliance strategy and brine disposal was required, the construction of pipeline and outfall structures could cause temporary impacts to views. The change in visual quality would not be significant because it is short term and would occur in an already developed area. Pipelines and outfall structures would be installed at or below grade and therefore it is not foreseeable that installing them at a particular location will result in a long-term impairment of a scenic vista or view open to the public.

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)).

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

Answer: **Potentially Significant**

Infiltration Devices, Media Filters, Diversion and Treatment, and Regional BMPs
It is reasonably foreseeable that installation of diversion and treatment facilities, infiltration devices, media filters, and other structural BMPs 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. In the event that the municipalities might install facilities on a scale that could alter a recreational area, the structural BMPs could be designed in such a way as to be incorporated into the recreational area. Additionally, many structural BMPs, if necessary, may be constructed underground to minimize impacts on the quality or quantity of existing recreational opportunities. Mitigation to replace lost areas may include the creation of new open space recreation areas and/or improved access to existing open space recreation areas. 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 storm water 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. Also see 14.d.

Non Structural Controls

Non-structural BMPs and source reduction efforts would involve no change to the physical environment either directly or indirectly and would have no impact on recreational opportunities.

Alternative Cooling Technologies for Power Plants

Alternative cooling technologies would be installed on site and would not require additional land. Therefore, it is not reasonably foreseeable that park land, recreational or open space areas will be needed for the installation of alternative cooling technologies. In addition, implementation of the metals TMDL is designed to improve the quality of the San Gabriel River and Estuary. This will create a positive impact and increase recreational opportunities.

Advanced Treatment for Water Reclamation Plants

Advanced treatment technologies would be implemented at existing WRPs and would not require additional land. Pipeline for potential brine disposal would be installed at or below grade and would not require additional land. Therefore, it is not reasonably foreseeable that park land, recreational or open space areas will be needed for the implementation of advanced treatment technologies. In addition, implementation of the metals TMDL is designed to improve the quality of the San Gabriel River and Estuary. This will create a positive impact and increase recreational opportunities.

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)).

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

Answer: **Potentially Significant**

Infiltration Devices, Media Filters, Diversion and Treatment, and Regional BMPs
Diversion and treatment facilities, infiltration devices, media filters, and other structural BMPs 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 further investigation, including consultation with Native American tribes, 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. According to the California Office of Historic Preservation, avoidance and preservation in place are the preferable forms of mitigation for archeological sites. When avoidance is infeasible, a data recovery plan should be prepared which adequately provides for recovering scientifically consequential information from the site. Studies and reports resulting from excavations must be deposited with the California Historical Resources Regional Information Center (California Office of Historical Preservation, 2006).

Non Structural Controls
Non-structural BMPs and source reduction efforts would involve no change to the physical environment either directly or indirectly and would have no impact on any archeological or historical site structure, object or building.

Alternative Cooling Technologies for Power Plants
Alternative cooling technologies would be installed on site and would not require additional land. Therefore, it is not reasonably foreseeable that any archeological or historical site structure, object or building would be impacted by the installation of alternative cooling technologies.

Advanced Treatment for Water Reclamation Plants

Advanced treatment technologies would be installed at existing WRP facilities and would not require additional land. Therefore, it is not reasonably foreseeable that any archeological or historical site structure, object or building would be impacted. If MF-RO were chosen as a compliance strategy, pipeline for potential brine disposal would be installed where ground disturbance has previously occurred but where potential impacts to cultural resources could occur. Impacts and mitigation measures would be the same as those discussed for diversion and treatment facilities, infiltration devices, media filters, and other structural BMPs.

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

21. Mandatory Findings of Significance.

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?

Answer: **Potentially Significant**

The California Legislature and the Secretary of Resources have determined that certain kinds of impacts are necessarily “significant” and thus automatically require preparation of an EIR or an EIR level of analysis to effectuate CEQA’s substantive mandate. Thus, the purpose of mandatory findings of significance is to remove an agency’s discretion to not adopt an EIR in some specific circumstances, and to ensure that agencies do not avoid the requirements to make necessary findings, to modify projects, and to adopt statements of overriding consideration.

When an initial study concludes that any of these impacts may occur, the lead agency must prepare an EIR, rather than a negative declaration. This lead agency however, is not obligated to prepare an EIR, and the checklist is not an initial study, but rather, a component of the Regional Board’s substitute environmental documents, as required by CEQA and Water Board regulations.

Without implementation of recommended mitigation measures, potentially significant environmental impacts, such as impacts to air, noise, and transportation, can result from implementation projects. However, it is reasonably foreseeable that local agencies will implement the proposed mitigation measures to reduce these potential impacts to less than significant levels.

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

Answer: **No Impact**

This TMDL is directed to long-term environmental goals, and does not sacrifice long-term for short-term benefit. Rather, the proposed metals TMDL is designed is achieve long-term environmental goals, most notably in improved water quality in the waters of the Region, and this document recognizes that in achieving these long-term goals, short-term impacts may result, as discussed in more detail above, as well as elsewhere in this document.

21. Mandatory Findings of Significance. 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. However this TMDL will require many individual projects to comply region-wide, which may have potential program-level, and project-level, cumulative effects upon the region. These impacts are discussed in detail in this document.

21. Mandatory Findings of Significance. 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. However, it is reasonably foreseeable that local agencies will implement the proposed mitigation measures to reduce these potential impacts to less than significant levels.

7. OTHER ENVIRONMENTAL CONSIDERATIONS

This section evaluates several other environmental considerations of reasonably foreseeable methods of complying with the metals TMDL, specifically:

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

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

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

7.1 CUMULATIVE IMPACTS

Cumulative impacts, defined in Section 15355 of the CEQA Guidelines, refer to two or more individual effects, that when considered together, are considerable or that increase other environmental impacts. Cumulative impact assessment must consider not only the impacts of the proposed TMDLs, 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 exist, are analyzed. On the project level, while the full environmental analysis of individual projects are the purview of the implementing municipalities of 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 Metals TMDL projects, if occurring with other construction projects, could contribute to temporary cumulative noise and vibration effects that would not occur with only one project.

7.1.1 PROGRAM CUMULATIVE IMPACTS

Currently there are no other TMDLs adopted for the portions of the San Gabriel River and Los Cerritos Channel subject to the Metals TMDLs. However, if other TMDLs are adopted in the future, the programmatic cumulative impacts would be analyzed in the SED documents for those TMDLs. Some implementation strategies for these TMDLs have a secondary benefit; for example, structural treatment devices to remove sediment and metals can also remove other pollutants such as bacteria and nutrients. Therefore, the potential implementation strategies discussed in this SED for the Metals TMDLs may contribute to the implementation of other TMDLs for the San Gabriel River and Los Cerritos Channel in the future. Likewise, implementation of other TMDLs in the San Gabriel River and Los Cerritos Channel may contribute to the implementation of this Metals TMDLs.

7.1.2 PROJECT CUMULATIVE IMPACTS

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

Noise and Vibration - Local residents in the near vicinity of installation and maintenance activities may be exposed to noise and possible vibration. The cumulative effects, both in terms of added noise and vibration at multiple Metals TMDL installation sites, and in the context of other related projects, are not considered cumulatively significant due to the temporary nature of noise increases. Noise mitigation methods including scheduling of construction or installation activities are available as discussed in the checklist. In addition, the fact that 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 Metals TMDLs may cause additional emissions of criteria pollutants and slightly elevated levels of carbon monoxide during construction or installation activities. The TMDLs, in conjunction with all other construction activity, may contribute to the region's non-attainment status during the installation period. SCAQMD prepared the Air Quality Management Plan (AQMP) (2003) to bring the region into compliance with the National Ambient Air Quality Standards as set by the EPA under the Clean Air Act Amendments (1990). The AQMP is essentially designed to address the cumulative air pollutants released into the South Coast Air Basin (SCAB). Because these installation-related emissions are temporary, and because the AQMD addresses cumulative air pollution in the SCAB, compliance with the TMDLs 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 Metals TMDLs involves installation activities occurring simultaneously at a number of surface sites in the Metals TMDL area. Installation of structural treatment devices may be occurring in the same general time and space as other related or unrelated projects. In these instances, construction activities from all projects could produce cumulative traffic effects which may be significant, depending upon a range of factors including the specific location involved and the precise nature of the conditions created by the dual construction activity. Special coordination efforts may be necessary to reduce the combined effects to an acceptable level. Overall, significant cumulative impacts are not anticipated because coordination can occur and because transportation mitigation methods are available as discussed in the checklist. In addition, the fact that 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 Metals TMDL study areas 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 Metals TMDL construction sites. To the extent that combined construction activities do occur, there would be temporary adverse visual effects of less than cumulatively significant proportions as discussed in the checklist.

7.2 GROWTH-INDUCING IMPACTS

This section presents the following:

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

7.2.2) a discussion of the types of growth that can occur in the Metals TMDL area,

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

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

7.2.1 CEQA GROWTH-INDUCING GUIDELINES

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

> 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.

7.2.2 TYPES OF GROWTH

The primary types of growth that occur within the Metals TMDL areas 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 Metals TMDL areas. 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 Metals TMDL areas 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. Orange County and the cities within the Metals TMDL areas also have plans which direct land use development.

7.2.3 EXISTING OBSTACLES TO GROWTH

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

7.2.4 POTENTIAL FOR COMPLIANCE WITH PROPOSED TMDL TO INDUCE GROWTH

Direct Growth Inducement

Because the reasonably foreseeable methods of compliance with the proposed Metals TMDL focus on structural and non-structural BMPs, storm water treatment, and implementation of alternative cooling technologies, or advanced treatment at WRPs, which would be located throughout the urbanized portion of the TMDL area, the Metals TMDLs 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 implementation plans: (1) the potential for compliance with the TMDLs to generate economic opportunities that could lead to additional immigration, and (2) the potential for the proposed TMDL implementation plans to remove an obstacle to land use or population growth.

Installation of storm water treatment devices to comply with the proposed TMDL implementation plans would occur over a 16-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 storm water treatment devices. Based on the annual construction cost estimates, the alternatives would result in direct jobs and indirect jobs. The creation of jobs in the region is considered a benefit.

Although the construction activities associated with the metals TMDLs 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.

7.3 UNAVOIDABLE SIGNIFICANT ADVERSE IMPACTS

Section 15126.2(c) of the CEQA Guidelines requires a discussion of potential significant, irreversible environmental changes that could result from a proposed project. Examples of such changes include commitment of future generations to similar uses, irreversible damage that may result from accidents associated with a project, or irretrievable commitments of resources. Although the proposed TMDL implementation plans would require resources (materials, labor, and energy) they do not represent a substantial irreversible commitment of resources.

Furthermore, implementation of the metals TMDLs is both necessary and beneficial. To the extent that the alternatives, mitigation measures, or both, that are examined in this SED are not deemed feasible by the municipalities and agencies complying with the

TMDLs, the necessity of implementing the federally required TMDLs and removing the significant environmental effects from metals impairment in the San Gabriel River and Los Cerritos Channel Watersheds (an action required to achieve the express, national policy of the Clean Water Act) remains.

In addition, implementation of the TMDLs will have substantial benefits to water quality and will enhance beneficial uses. Enhancement of habitat beneficial uses (including the warm freshwater habitat, cold freshwater habitat, wildlife habitat, wetland habitat and rare, threatened or endangered species) will have positive indirect economic and social benefits. These substantial benefits outweigh any unavoidable adverse environmental effects, as set forth herein in and in the Statement of Overriding Considerations. Section 6 of this SED identifies the anticipated environmental effects for each resource area, identifies mitigation measures for potentially significant impacts, and determines if impacts after implementation of mitigation are significant.

8. STATEMENT OF OVERRIDING CONSIDERATIONS AND DETERMINATION (14 CAL CODE REGS. § 15093)

The Regional Board staff has balanced the economic, legal, social, technological, and other benefits of this proposed Metals TMDL implementation plans and recommends 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 Metals TMDL implementation plans outweigh the unavoidable adverse environmental effects, and that such adverse environmental effects are acceptable under the circumstances.

The implementation of these Basin Plan amendments 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 habitat beneficial uses (including the warm freshwater habitat, cold freshwater habitat, wildlife habitat, wetland habitat and rare, threatened or endangered species) will also have positive indirect economic and social benefits. Specific projects employed to implement the Basin Plan amendments 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 and the Basin Plan amendments, and this SED provide the necessary information pursuant to Public Resources Code section 21159 to conclude that properly designed and implemented BMPs and other wastewater and stormwater treatment devices 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. These mitigation measures in most cases are routine measures to ease the expected and routine impacts attendant with ordinary minor construction projects and infrastructure maintenance in an urbanized environment. Routine construction and maintenance of power lines, sewers, streets, etc. are regular and expected incidents of living in urban environments such as the Los Angeles region. Sewer and power line maintenance, street sweeping, traffic alterations, and environmental impacts from them already occur and are expected. This project will foreseeably require many more such projects, but their individual impacts are not expected to be extraordinary in the magnitude or severity of impacts. Specific projects, that may have a significant impact, would therefore be subject to a separate environmental review. The lead agency for subsequent projects would be obligated to mitigate any impacts they identify, for example by mitigating potential flooding impacts by designing the BMPs with adequate margins of safety. 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. For instance, they can locate BMPs further down the storm drain system away from such receptors, or impose increased street sweeping or enforcement at that location 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 these TMDL implementation plans, the USEPA-established TMDLs, without implementation plans or schedules, would remain in place. The impacts associated with USEPA-established TMDLs would be significantly more severe, as discussed herein, because USEPA TMDLs do 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 storm water 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 these TMDLs will result in improved water quality in the San Gabriel River and Los Cerritos Channel Watersheds, but it may result in short-term localized significant adverse impacts to the environment as a variety of small construction projects may be undertaken at many places throughout the watershed over a period of 16 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 San Gabriel River Metals TMDL and Los Cerritos Channel Metals TMDL implementation plans and this checklist provide the necessary information pursuant to Public Resources Code section 21159 to conclude that properly designed and implemented structural or non-structural methods of compliance should mitigate and generally avoid significant adverse effects on the environment, and all agencies responsible for implementing the TMDLs 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 TMDLs. 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 (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 TMDLs 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 TMDLs and removing the metals impairments from the San Gabriel River and Los Cerritos Watersheds (an action required to achieve the express, national policy of the Clean Water Act) remains.

9. 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).

10. REFERENCES

California Department of Conservation, California Geological Survey. 2002. Guidelines for Evaluating the Hazard of Surface Fault Rupture – Note 49.

California Exotic Pest Plant Council (CalEPPC). 1999. Exotic Pests Plants of Greatest Ecological Concern, October, 1999. ucce.ucdavis.edu/files/filelibrary/5319/4898.pdf.

California Geological Survey, State Mining and Geology Board. Special Publication 117. Guidelines for Evaluating and Mitigating Seismic Hazards in California**,** 1997.California Office of Historical Preservation. 2006. Proprietary data.

California Stormwater Quality Association (CASQA). 2003a. California Stormwater BMP Handbook: Municipal. January 2003. http://www.cabmphandbooks.com.

California Stormwater Quality Association (CASQA). 2003b. California Stormwater BMP Handbook: New Development and Redevelopment. January 2003. www.cabmphandbooks.com.

Electric Power Research Institute (EPRI). 2002. Comparison of Alternate Cooling Technologies for California Power Plants, prepared for the California Energy Commission.

Federal Highway Administration (FHWA). 2007. Storm Water Best Management Practices in an Ultra-Urban Setting: Selection and Monitoring. http://www.fhwa.dot.gov/environment/ultraurb/index.htm. Accessed January 2007.

Los Angeles Regional Water Quality Control Board (LARWQCB). 1994. Water Quality Control Plan for the Los Angeles Region (Basin Plan).

Metcalf and Eddy. 1991. Wastewater Engineering Treatment Disposal and Reuse. Third Edition. McGraw-Hill, Inc.

City of Santa Monica. Santa Monica Urban Runoff Recycling Facility Fact Sheet. Accessed January 2007.

Soil & Water Conservation Society of Metro Halifax. 2006. Select features of the CDS (Continuous Deflective Separation) Technologies Inc. http://lakes.chebucto.org/SWT/cds.html. Accessed November 2006.

South Coast Air Quality Management District (SCAQMD) webpage. 2006. http://www.aqmd.gov/ceqa/handbook/signthres.doc. Accessed October, 2006.

South Coast Air Quality Management District. 2006. Regulation XI - Source Specific Standards. Rule 1186.1 - Less-Polluting Sweepers. http://www.aqmd.gov/rules/reg/reg11/r1186-1.pdf#.

State of California Department of Transportation (Caltrans). 2002. Storm Water Quality Handbooks: Project Planning and Design Guide. September 2002, revised July 2005. http://www.dot.ca.gov/hq/oppd/stormwtr/.

State of California Department of Transportation (Caltrans). 2003. Construction Manual. December 2003.

State of California Department of Transportation (Caltrans). 2004. BMP Retrofit Pilot Program. Final Report January 2004. CTSW - RT - 01 – 050.

Tetratech, 2008. California's Coastal Power Plants: Alternative Cooling System Analysis.

U.S. EPA. 2002. Considerations in the Design of Treatment Best Management Practices (BMPs) to Improve Water Quality. Office of Research and Development. EPA/600/R-03/103

U.S. EPA. 2004. The Use of Best Management Practices (BMPs) in Urban Watersheds. Office of Research and Development. EPA/600/R-04/184.

U.S. EPA. 2005. National management measures to Control Nonpoint Source Pollution from Urban Areas. EPA/841/B/05/004.

U.S. EPA. 2007. National Menu of Stormwater Best Management Practices, Accessed January 2007 http://cfpub.epa.gov/npdes/stormwater/menuofbmps/index.cfm.

Washington State Department of Ecology Water Quality Program. February 2005. Stormwater Management Manual for Western Washington. Publication No. 05-10-33

Water Environment Research Foundation (WERF). 2005. Critical Assessment of Stormwater Treatment and Control Selection Issues. Project No. 02-SW-1 http://www.werf.org/AM/Template.cfm?Section=Research&Template=/CustomSource/Research/ResearchProfile.cfm&ReportId=02-SW-&CFID=707181&CFTOKEN=54086235.