Substitute Environmental Document for the Los Angeles River Watershed Trash TMDL

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

Draft: March 20, 2007

California Regional Water Quality Control Board
Los Angeles Region
320 West 4th Street, Suite 200
Los Angeles, California 90013

This page is intentionally left blank

TABLE OF CONTENTS

1. EXECUTIVE SUMMARY

The California Regional Water Quality Control Board – Los Angeles Region is the Lead Agency for evaluating the environmental impacts of the proposed Total Maximum Daily Load (TMDL) for trash in the Los Angeles River Watershed. This Substitute Environmental Document (SED) analyzes environmental impacts that may occur from reasonably foreseeable methods of implementing a TMDL for trash in the Los Angeles River Watershed (trash TMDL). This SED is based on a proposed trash TMDL that will be considered by the California Regional Water Quality Control Los Angeles Region (Los Angeles Water Board) and, if approved by the Los Angeles Water Board, implemented through an amendment to the Water Quality Control Plan Los Angeles Region (Basin Plan). The proposed trash TMDL is described in the Staff Report, Tentative Board Resolution and Tentative Basin Plan Amendment available on the Los Angeles Water Board website. This SED analyzes foreseeable methods of compliance with the trash TMDL and provides the public information regarding environmental impacts, mitigation, and alternatives in accordance with the California Environmental Quality Act (CEQA). The SED also complies with a Superior Court Writ of Mandate to develop a SED that is functionally equivalent to an Environmental Impact Report and fulfills the Los Angeles Water Board requirements under CEQA as a certified regulatory program by the California Resources Agency.

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

Water quality in the Los Angeles River is limited by trash, as documented in current and proposed State of California 303(d) lists of impaired waterbodies. Trash in waterways causes significant water quality problems and impairs beneficial uses of the Los Angeles River, including wildlife, warm water aquatic and wetland habitat, and water contact recreation. Small and large floatable trash can inhibit the growth of aquatic vegetation, decreasing spawning areas and habitats for fish and other living organisms. Wildlife living in rivers and in riparian areas can be harmed by ingesting or becoming entangled in floating trash. Trash which does not float, but which settles, instead, is less obvious. The settleables include glass, cigarette butts, rubber, construction debris and more. Settleables can be a problem for bottom feeders and can contribute to sediment contamination. Some debris (e.g. diapers, medical, and household waste) are a source of bacteria and toxic substances.

Floating debris that is not trapped and removed will eventually end up on the beaches or in the open ocean, repelling visitors away from beaches and degrading coastal waters. Trash in the Los Angeles River migrates downstream and impairs the Los Angeles and Long Beach Harbors and beaches nearby the Harbors.

Figure 1-1: Trash Clean-up in the Port of Long Beach after a storm

Persistent trash such as plastics is a worldwide problem and trash in the Los Angeles River may pollute the Pacific Ocean and distant Pacific beaches for many years. Marine debris has been widely recognized as a threat to the marine environment since the 1970s. Research shows that, despite global treaties to prevent dumping at sea and increasing efforts in developing countries to protect water quality, the quantity of debris in the world's oceans is increasing. For example, the abundance of micro plastics in the North Pacific tripled during the last decade (Moore, et. al, 2005). During the same period, near the coast of Japan, quantities increased by a factor of 10 every two-three years (ibid.).

A 1999 study of marine debris in the Mid-Pacific Gyre, conducted by the Algalita Marine Research Foundation, showed the mass of plastic particles collected from the gyre was six times higher (5,000 g/km^2) than the mass of plankton (841 g/km^2), even though the number of planktonic organisms (1,837,342/km^2) was five times the number of plastic pieces. (Moore, et. al, 2001).

Many years of International Coastal Clean-up (ICC) data[1] show definite trends. For example, an average of 60% of the debris items retrieved from beaches on Coastal Clean-up Day in the U.S. is comprised of plastic materials. The primary items of debris from land-based sources on the Pacific Coast collected during the ICC include food wrappers, beverage containers, cigarettes and smoking-related materials. (Sheavely, 2005).

A trash TMDL is required under section 303 of the Clean Water Act and mandated by a Consent Decree between Heal the Bay and the United States Environmental Protection Agency (US EPA). This consent decree requires that all TMDLs for the Los Angeles Region be adopted within 13 years, and prescribes schedules for certain TMDLs, including the Trash TMDL for the Los Angeles River watershed which had to be approved by March 2001. The objective of the trash TMDL is to restore the beneficial uses of the Los Angeles River that are currently impaired by trash, in accordance with Clean Water Act section 303(d).

The Los Angeles River watershed is highly developed and this TMDL specifically addresses the urbanized portion of the watershed. This SED analyzes impacts due to implementation of the TMDL to the current, "baseline", conditions of the urbanized portion of the Los Angeles River watershed. The appropriate baseline conditions of the Los Angeles River Watershed include a large, densely populated urban setting with industrial, commercial, residential and recreational land uses. Additionally, the baseline condition includes approximately 100,000 catch basins which are inlets to a 1,500 mile long maze of pipes, open channels, and outlets that make up the storm drain system.

Municipal and transportation stormdrain systems are the principal source of trash to the Los Angeles River. The trash TMDL establishes waste load allocations that will be used to develop effluent limits in National Pollutant Discharge Elimination System (NPDES) storm water permits for discharges to the Los Angeles River and its tributaries and estuaries. The principal permits for compliance with the trash TMDL include the Los Angeles County Municipal Separate Storm Sewer Systems (MS4) Permit, the City of Long Beach (MS4) Permit and the California Department of Transportation (Caltrans) (MS4). The TMDL also established compliance metrics based on structural and nonstructural "Best Management Practices" (BMPs) to attain full capture certification by the Los Angeles Water Board. The Regional Board has certified BMPs such as vortex separators, gross solid removal devices, and catch basin inserts and screens as full capture devices. In addition, Waste Load Allocations (WLAs) may be issued to additional facilities under Phase II of the US EPA Stormwater Permitting Program.

This SED analyzes three Program Alternatives and three types of Implementation Alternatives (see Section 2.3.3 of this SED for a description of the alternatives) that encompass actions within the jurisdiction of the Los Angeles Water Board and implementing municipalities and agencies. A No Project Alternative is analyzed to allow decision makers to compare the impacts of approving a proposed alternative and its components compared with the impacts of not approving the proposed alternative. The SED analyzes the potential environmental impacts in accordance with significance criteria widely accepted by municipalities and government agencies in the Los Angeles River watershed for CEQA review. The TMDL does not specify types of projects, specific locations, or mitigation measures for those projects. Projects are specified,

[1] The ICC data is collected by volunteers on one day each year, and is not a scientific assessment.

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.

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 trash TMDL. Approval of projects (i.e., project alternatives or components of project alternatives) refers to the decision of either the implementing municipalities or agencies to select and carry out an alternative or a component of an alternative. (Section 2.2 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 trash TMDL projects.

Many of the specific projects and BMPs analyzed in this SED will involve small construction projects and maintenance of trash collection and stormdrain infrastructure. Infrastructure maintenance and urban construction projects generate varying degrees of environmental impacts. The potential impacts can include, for example, noise associated with construction, air emissions associated with vehicles to deliver materials during construction, traffic associated with increased vehicle trips and where construction or attendant activities occur near or in thoroughfares, and additional light and glare. Additionally, maintenance of constructed BMPs such as catch basin inserts or vortex separation systems may involve, for example, such consequences as additional traffic and air emissions from requisite additional street sweeping and additional trash collection, need for additional landfill space to dispose of collected trash, additional risk of flooding if trash collection devices are not properly maintained and so forth. These foreseeable impacts are analyzed in detail in Section 7 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, 2003a; CASQA, 2003a; CASQA, 2003b; WERF, 2005). These mitigation methods and BMPs are discussed in detail in Section 7 of this SED.

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 trash collection methods are undertaken by municipalities with a declaration by the relevant agency that their project falls under one or more "categorical exemptions" from CEQA, that is, projects that the municipality has concluded, and the Resources Agency agrees, do not result in significant adverse environmental impacts, see Appendix A.

In terms of the Trash TMDL that this environmental document is designed to evaluate, some commenters have contended that the impacts described above will occur in a significant magnitude throughout the region if the regulation is adopted. However, the existence of these mitigation measures and best management practices needs also to be considered. Additionally, the baseline conditions are such that compliance with the Trash TMDL does not present any different or more severe impacts to the watershed than the usual and ongoing construction and maintenance activities that each city performs every day.

This SED analyzes the reasonably foreseeable methods of compliance with the trash TMDL and the available mitigation methods. This SED has been prepared with the contention that a city council or county board or other project-approving agency would not allow its public works department to perform construction or maintenance projects in a less environmentally sound and more noxious manner to the public by not employing these generally accepted practices and mitigation measures. For instance, it is not reasonably foreseeable that a city would condemn a private residence to site a trash collection device when locations are readily available that do not involve destruction of private property or housing. Likewise, it is not reasonably foreseeable that a city would undertake a construction project in the center of a major intersection during rush hour when siting the project a block or two downstream would be just as effective, and involve far less traffic impacts, or when the project could be performed during non-rush hour times. Municipalities and public works departments must be presumed to be responsive to their citizens' concerns with respect to readily available, and generally accepted industry standard practices that would minimize noise, light and glare, odors, etc.

Nevertheless, several commenters have suggested that these mitigation measures and BMPs may not occur. The Regional Board recognizes that Water Code section 13360 prohibits the Regional Board from specifying the manner of compliance with the TMDL, and acknowledges that the Regional Board cannot mandate that any public works department perform construction activities attendant with the Trash TMDL in the least environmentally harmfully manner, or even in accordance with generally available, industry standard, practices. These mitigation measures are squarely within the authority and jurisdiction of the agencies that will comply with the Trash TMDL, and not the Regional Board. While those agencies can and should implement them, to the extent they choose not to, the Regional Board recognizes that impacts that are otherwise mitigable, and even mitigable to levels that are less than significant, could nevertheless occur.

This SED finds foreseeable methods to comply with the trash TMDL focus on improvements to the stormdrain system in the Los Angeles River Watershed and do not cause significant impacts that cannot be mitigated through commonly used construction and maintenance practices. The Los Angeles River stormdrain system has been in place for more than 25-years and no undeveloped land will need to be acquired or developed to comply with the trash TMDL. The SED finds that environmental impacts from the trash TMDL are those impacts related to installation and maintenance of structural BMPs. The SED identifies mitigation methods for impacts with potentially significant effects and finds that those methods can mitigate potentially significant impacts, in many cases, 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 trash TMDL.

This SED finds that foreseeable methods to comply with the trash TMDL focus on improvements to the stormdrain system in the Los Angeles River Watershed and do not cause significant impacts that cannot be mitigated through commonly used construction and maintenance practices. The Los Angeles River stormdrain system has been in place for more than 25-years and no undeveloped land will need to be acquired or developed to comply with the trash TMDL. The SED finds that environmental impacts from the trash TMDL are those impacts related to installation and maintenance of structural BMPs. The SED identifies mitigation measures for impacts with potentially significant effects and finds that these measures can mitigate potential 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 trash TMDL.

As discussed in this SED, California Water Code section 13360 prohibits the Regional Board from specifying the manner of compliance with the TMDL. Methods of compliance and selection of specific BMPs and associated mitigation measures are the responsibility of the responsible agencies for implementing the trash TMDL. In this SED, in Section 7 and reflected in the summary table in Section 1 and in the checklist in Section 10, the Regional Board has found certain effects to be potentially significant. This category of “potentially significant” includes those effects that can be reduced and/or eliminated by available mitigation measures (as described in the Section 7; the Regional Board recommends that appropriate mitigation measures be applied in order that potential environmental impacts be reduced or avoided. The “potentially significant” category also includes those effects can be reduced and/or eliminated by mitigation measures such as those used as standard practices by responsible agencies and jurisdictions when implementing public works projects; the Regional Board has conservatively evaluated the possible adverse environmental effects as “potentially significant” based solely on the unlikely event that responsible agencies fail to exercise due diligence, through pre-project planning and adherence to existing codes, standards and/or practices, in implementing these alternatives.

This SED finds that to the extent that there are significant adverse effects on the environment due to the implementation of this TMDL, there are feasible alternatives and/or feasible mitigation measures that would substantially lessen any significant adverse impact. Furthermore, to the extent the alternatives, mitigation measures, or both are not deemed feasible by implementing agencies, the necessity of implementing the federally required trash TMDL and removing trash from the waterbodies of the Los Angeles River Watershed outweigh the unavoidable adverse environmental effects.

In reviewing this SED, the reader should note that by failing to adequately control trash discharges through their storm drains, and trying to avoid the impacts described in this document, (and raised as significant impacts of concern by several commenting responsible agencies), responsible agencies are unwittingly forcing undue adverse environmental impacts on communities in the lower part of the watershed. For instance, the Port of Long Beach suffers significant aesthetic impacts from trash after storm events, and the associated increases in noise levels, air emissions, and traffic during clean-up, as they must remove the trash themselves. While moving the impacts of proper trash disposal upstream may force the communities generating the trash to bear burdens in the form of environmental impacts (aesthetics, noise, traffic, etc.) from trash collection efforts that they, so far, have not had to endure, doing so will alleviate the burden on the rest of the watershed, including the downstream communities and watershed users who cannot control the generation in the first place.

The reader should also note that many of the impacts that have been contended by commenters to be of concern are attendant with many routine construction and maintenance projects, maintenance of stormdrains, sewers, electrical systems and other utilities, that are undertaken everyday in every urban environment. Accordingly, mitigation measures proposed are often derived from the generally accepted and employed mitigation measures and BMPs that would be employed to lessen impacts on citizens who would be subject to such effects. Such mitigation measures and BMPs are described in detail in a variety of references available to the public and to public work departments, as noted earlier in this document.

Table 1-1 provides a summary of the environmental analysis for the Los Angeles River Trash TMDL; including foreseeable impacts and potential mitigation measures for the various implementation alternatives. Many of the mitigation measures identified in the SED are common practices currently employed by agencies when planning and implementing storm water BMPs. Agencies such as Caltrans, the California Stormwater Quality Association (CASQA), and the Water Environment Research Foundation (WERF) publish handbooks containing guidance on the selection, siting, design, installation, monitoring, and evaluation of storm water BMPs (Caltrans, 2002, CASQA, 2003a, CASQA, 2003b, WERF, 2005). Manuals are also available, which describe engineering and administration policies and procedures for construction projects (e.g., Caltrans, 2003a). The regulatory requirements and the program objectives for the Los Angeles River Trash TMDL are provided in Section 2 and Section 3 respectively. Section 4 discusses the program level alternatives for the trash TMDL and presents implementation alternatives to achieve compliance with the final waste load allocation of zero trash. Areas of controversy and issues to be resolved are addressed in Section 5, while a detailed description of implementation alternatives is provided in Section 6. An in-depth analysis of each resource area is presented in Section 7. This SED also contains site specific environmental impacts (Section 8), other environmental considerations (Section 9) and the CEQA Checklist and Determination (Section 10). A list of references and appendices refer to and provide supporting documentation for this SED.

SUMMARY OF ENVIRONMENTAL IMPACTS

Table 1-1: Summary of Environmental Impacts
Trash TMDL for the Los Angeles River Watershed

Implementation Alternatives by Resource Area	Environmental Impacts	Significance Determination	Mitigation Measures
Aesthetics			
Vortex Separation Systems	**VSSs may create an aesthetically offensive site to the public during installation.** **VSSs may become a target of vandalism. Vandalized structures may become an aesthetically offensive site.**	**Less than significant**	**Temporary fencing or screening of installation sites.**
Gross solids removal devices	**GSRDs may create an aesthetically offensive site to the public during installation.** **GSRDs may become a target of vandalism. Vandalized structures may become an aesthetically offensive site.**	**Less than significant**	**Temporary fencing or screening of installation**
Trash nets	**Trash nets may create an esthetically offensive site to the public during and after installation.** **Trash nets may become a target of**	**Less than significant**	**Employing alternative structural devices, such as in-line trash nets, or employing non-structural controls, such as increased litter enforcement**

Table 1-1: Summary of Environmental Impacts

Trash TMDL for the Los Angeles River Watershed

Implementation Alternatives by Resource Area	Environmental Impacts	Significance Determination	Mitigation Measures
	vandalism. Vandalized structures may become an aesthetically offensive site.		
Catch Basin Inserts	Catch basin inserts may create an aesthetically offensive site after installation.	Less than significant	Improve the aesthetic characteristics of that device. Increase street sweeping to remove accumulated debris.
Increased street sweeping	No impact (see section 7.3)	No impact	No mitigation necessary
Enforcement of Litter Laws	No impact (see section 7.3)	No impact	No mitigation necessary
Public Education	No impact (see section 7.3)	No impact	No mitigation necessary
Agricultural Resources			
Vortex Separation Systems	No impact (see section 7.4)	No impact	No mitigation necessary
Gross solids removal devices	No impact (see section 7.4)	No impact	No mitigation necessary
Trash nets	No impact (see section 7.4)	No impact	No mitigation necessary
Catch Basin Inserts	No impact (see section 7.4)	No impact	No mitigation necessary
Increased street sweeping	No impact (see section 7.4)	No impact	No mitigation necessary
Enforcement of Litter Laws	No impact (see section 7.4)	No impact	No mitigation necessary
Public Education	No impact (see section 7.4)	No impact	No mitigation necessary
Air Quality			
Vortex Separation Systems	Short term increases in traffic during the construction and installation of	Potentially significant	Mitigation measures could include: 1) use of construction, and maintenance vehicles with

Table 1-1: Summary of Environmental Impacts
Trash TMDL for the Los Angeles River Watershed

Implementation Alternatives by Resource Area	Environmental Impacts	Significance Determination	Mitigation Measures
	VSS devices and long-term increases in traffic caused by ongoing maintenance of these devices (e.g., delivery of materials and deployment of vacuum trucks) are potential sources of increased air pollutant emissions.		lower-emission engines, 2) use of soot reduction traps or diesel particulate filters, and 3) use of emulsified diesel fuel.
	During installation of the VSS units, it is possible that foul air could be temporarily released to the atmosphere while enclosed sources are uncovered or piping is reconfigured.	Potentially significant	Mitigation measures could include aeration, filters, barriers, and/or odor suppressing chemical additives.
	VSS devices may be a source of objectionable odors if design allows for water stagnation or collection of water with sulfur-containing compounds.	Potentially significant	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, trash removal devices could be designed to minimize stagnation of water and installed to increase the distance to sensitive receptors in the event of any stagnation.
		Potentially	

Table 1-1: Summary of Environmental Impacts Trash TMDL for the Los Angeles River Watershed			
Implementation Alternatives by Resource Area	**Environmental Impacts**	**Significance Determination**	**Mitigation Measures**
	The potential re-suspension of sediments and associated pollutants during installation could also impact air quality. The potential exists for the improper disposal of household hazardous wastes which may become trapped in structural BMPs, and may result in the release of such chemicals, thereby exposing local residents to potentially harmful effects.	significant Potentially significant	An operations plan for the specific installation and/or maintenance activities could be completed to address the variety of available measures to limit the air quality impacts. These could include vapor barriers and moisture control to reduce transfer of small sediments to air. Such impacts could be avoided or mitigated by educating the local community of the effects of improper disposal of such wastes, enforcing litter ordinances, and timely cleaning out VSSs.
Gross solids removal devices	Short term increases in traffic during the construction and installation of gross solids removal devices and long-term increases in traffic caused by ongoing maintenance of these devices (e.g., replacement of nets) are potential sources of increased air pollutant emissions.	Potentially significant	Mitigation measures could include 1) use of construction, and maintenance vehicles with lower-emission engines, 2) use of soot reduction traps or diesel particulate filters, and 3) use of emulsified diesel fuel.

Table 1-1: Summary of Environmental Impacts Trash TMDL for the Los Angeles River Watershed			
Implementation Alternatives by Resource Area	**Environmental Impacts**	**Significance Determination**	**Mitigation Measures**
	Trash trapped GSRDs may be a source of objectionable odors.	Potentially significant	Mitigation measures to eliminate odors could include covers, aeration, filters, barriers, and/or odor suppressing chemical additives. During maintenance, odorous sources could be uncovered for as short of a time period as possible. The impacts from odor could be mitigated by employing non-structural controls, for instance, increased litter enforcement.
Trash nets	Short term increases in traffic during the construction and installation of trash nets and long-term increases in traffic caused by ongoing maintenance of these devices (e.g., replacement of nets) are potential sources of increased air pollutant emissions.	Potentially significant	Mitigation measures could include 1) use of construction, and maintenance vehicles with lower-emission engines, 2) use of soot reduction traps or diesel particulate filters, and 3) use of emulsified diesel fuel.
	Trash trapped in trash nets may be a source of objectionable odors.	Potentially significant	Mitigation measures to eliminate odors could include covers, aeration, filters, barriers, and/or odor suppressing chemical additives. During maintenance, odorous sources could be uncovered for as short of a time period as possible. The impacts from odor could also be mitigated by employing alternative structural devices, such as in-line trash nets, or by employing non-structural controls, for instance, increased litter enforcement.

Table 1-1: Summary of Environmental Impacts Trash TMDL for the Los Angeles River Watershed			
Implementation Alternatives by Resource Area	**Environmental Impacts**	**Significance Determination**	**Mitigation Measures**
Catch Basin Inserts	**Long-term increases in traffic caused by ongoing maintenance of catch basin inserts (e.g., delivery of materials, street sweeping) are potential sources of increased air pollutant emissions.** **Improper disposal of, for instance, household hazardous wastes result in them being kept on the street or in inserts, and potentially allowing a release of such chemicals, local residents could be exposed to those effects.**	**Potentially significant** **Potentially significant**	**Mitigation measures could include 1) use of construction, maintenance, and 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, and 5) the design of trash removal devices to minimize the frequency of maintenance trips.** **Such impacts could be avoided or mitigated by educating the local community of the effects of improper disposal of such wastes, enforcing litter ordinances, and timely cleaning out inserts.**
Increased street sweeping	**Increased street sweeping would increase traffic and therefore increase air pollutant emissions.** **Increased street sweeping may increase objectionable odors on street.**	**Potentially significant**	**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, and 5) the design of trash removal devices to minimize the frequency of**

Table 1-1: Summary of Environmental Impacts

Trash TMDL for the Los Angeles River Watershed

Implementation Alternatives by Resource Area	Environmental Impacts	Significance Determination	Mitigation Measures
			maintenance trips
Enforcement of Litter Laws	**No impact (see section 7.5)**	**No impact**	**No mitigation necessary**
Public Education	**No impact (see section 7.5)**	**No impact**	**No mitigation necessary**
Biological Resources			
Vortex Separation Systems	**Change in diversity or number of plant species.**	**Potentially significant**	**Preservation prior to and during construction and re-establishment post-construction.**
	Reduction of unique, rare or endangered plant species.	**Potentially Significant**	**Project-level search of** California Natural Diversity Database (**CNDDB) and focused protocol plant surveys. Consultation with the California Department of Fish and Game (CDFG) and US Fish and Wildlife Service USFWS.**
	Disruption of resident native species if landscaping is incorporated into design.	**Potentially significant**	**Use of native plants. Prohibition of invasive species or other plants listed in Exotic Pest Plant of Greatest Ecological Concern in California.**
	Direct or indirect impacts to special-status animal species.	**Potentially significant**	**Project-level search of CNDDB and focused protocol animal surveys. Pre-installation surveys to determine the presence or absence of special-status species. Consultation with CDFG and USFWS to determine mitigation, such as special nighttime lighting for indirect habitat impacts.**

Table 1-1: Summary of Environmental Impacts Trash TMDL for the Los Angeles River Watershed			
Implementation Alternatives by Resource Area	**Environmental Impacts**	**Significance Determination**	**Mitigation Measures**
	Impacts to wildlife crossings or migratory avian species during installation.	**Potentially significant**	**Design to include new wildlife crossing in same general location. Conducting of nesting surveys and establishment of buffers and/or delay of installation, if necessary.**
Gross solids removal devices	**Same as vortex separation systems**	**Same as vortex separation systems**	**Same as vortex separation systems**
Trash nets	**No impact (see section 7.6)**	**No impact**	**No mitigation necessary**
Catch Basin Inserts	**No impact (see section 7.6)**	**No impact**	**No mitigation necessary**
Increased street sweeping	**No impact (see section 7.6)**	**No impact**	**No mitigation necessary**
Enforcement of Litter Laws	**No impact (see section 7.6)**	**No impact**	**No mitigation necessary**
Public Education	**No impact (see section 7.6)**	**No impact**	**No mitigation necessary**
Coastal Resources			
Vortex Separation Systems	**Minor delays in accessing coastal resources during installation.**	**Less than significant**	**Implementation of construction management plan with access routes, traffic hours, traffic controls and detours and plans for temporary traffic control, signage and tripping, location points for ingestion and egress of vehicles, and staging areas. Limit hours of installation.**
Gross solids removal devices	**Same as vortex separation systems**	**Same as vortex separation systems**	**Same as vortex separation systems**

Table 1-1: Summary of Environmental Impacts Trash TMDL for the Los Angeles River Watershed			
Implementation Alternatives by Resource Area	**Environmental Impacts**	**Significance Determination**	**Mitigation Measures**
Trash nets	**No impact (see section 7.7)**	**No impact**	**No mitigation necessary**
Catch Basin Inserts	**No impact (see section 7.7)**	**No impact**	**No mitigation necessary**
Increased street sweeping	**Increased street sweeping and storm drain cleaning could cause increased traffic and delays in accessing coastal areas.**	**Potentially significant**	**Schedule catch basin cleanings with trash pickups to decrease added vehicle trips. Limit hours of sweeping.**
Enforcement of Litter Laws	**No impact (see section 7.7)**	**No impact**	**No mitigation necessary**
Public Education	**No impact (see section 7.7)**	**No impact**	**No mitigation necessary**
Cultural Resources			
Vortex Separation Systems	**Impact to cultural resources if installation results in minor ground disturbances in previously undisturbed locations containing these resources.**	**Potentially significant**	**Site-specific investigations including California Register search and consultation with Native American tribes. Redesign and relocation of facilities outside boundaries of archeological or historical sites. When avoidance or preservation in place is infeasible, preparation of data recovery plans to recover scientifically consequential information. Excavation studies and reports should be deposited with the California Historical Resources Regional Information Center.**
Gross solids removal devices	**Same as vortex separation systems**	**Same as vortex separation systems**	**Same as vortex separation systems**
Trash nets	**No impact (see section 7.8)**	**No impact**	**No mitigation necessary**
Catch Basin Inserts	**No impact (see section 7.8)**	**No impact**	**No mitigation necessary**

Table 1-1: Summary of Environmental Impacts

Trash TMDL for the Los Angeles River Watershed

Implementation Alternatives by Resource Area	Environmental Impacts	Significance Determination	Mitigation Measures
Increased street sweeping	**No impact (see section 7.8)**	**No impact**	**No mitigation necessary**
Enforcement of Litter Laws	**No impact (see section 7.8)**	**No impact**	**No mitigation necessary**
Public Education	**No impact (see section 7.8)**	**No impact**	**No mitigation necessary**
Geology and Soils			
Vortex Separation Systems	**Exposure of people to or property to rupture of earthquake faults, strong seismic ground shaking, liquefaction, or landslides.**	**Potentially significant**	**Preparation of project-level geotechnical studies. Identification of site-specific soil and subsurface conditions and specification of seismic-related design features. Compliance with existing regulations, building codes, and standards specifications. Specification of building setbacks to avoid fault rupture zones.**
	Short-term wind or water erosion of soils during installation	**Potentially significant**	**BMPs to minimize offsite sediment runoff or deposition as required by general construction storm water permits or through the construction program of the MS4 permit.**
	Minor surface soil excavation during installation resulting in unstable soil.	**Potentially significant**	**Siting of facilities away from** areas with unsuitable soils or steep slopes. **Design and installation in compliance with existing regulations, building codes, and standard specifications and construction techniques, including shoring, piling and soil stabilization. Conducting of geotechnical studies to evaluate geology and soil conditions.**

Table 1-1: Summary of Environmental Impacts Trash TMDL for the Los Angeles River Watershed			
Implementation Alternatives by Resource Area	**Environmental Impacts**	**Significance Determination**	**Mitigation Measures**
			Requirements for groundwater level monitoring.
Gross solids removal devices	**Same as vortex separation systems**	**Same as vortex separation systems**	**Same as vortex separation systems**
Trash nets	**No impact (see section 7.9)**	**No impact**	**No mitigation necessary**
Catch Basin Inserts	**No impact (see section 7.9)**	**No impact**	**No mitigation necessary**
Increased street sweeping	**No impact (see section 7.9)**	**No impact**	**No mitigation necessary**
Enforcement of Litter Laws	**No impact (see section 7.9)**	**No impact**	**No mitigation necessary**
Public Education	**No impact (see section 7.9)**	**No impact**	**No mitigation necessary**
Hazards, Hazardous Materials, and Human Health			
Vortex Separation Systems	**Encounter hazards or hazardous materials during installation.** **Accidents from the use of hazardous materials (e.g., paint, oil, gasoline) during installation. Or public accidents near existing sites.**	**Potentially significant** **Potentially significant**	**Preparation of health and safety plan with proper handling and storage procedures and procedures to address potential cross contamination and worker exposure to contaminated soils and water. Plan for temporary storage, transportation and disposal of contaminated soils and water.** **Compliance with requirements of the** California Occupational Health and Safety Administration **(CalOSHA) and local safety regulations. Redesign and protection of sites with fencing and signs to**

Table 1-1: Summary of Environmental Impacts Trash TMDL for the Los Angeles River Watershed			
Implementation Alternatives by Resource Area	Environmental Impacts	Significance Determination	Mitigation Measures
			prevent accidental health hazards.
	Trash collected in systems could become hazardous to the public or maintenance workers if not handled and disposed of properly.	Potentially significant	Education of local community of the effects of improper disposal of trash, enforcement of litter ordinances, and cleaning of facilities in a timely fashion.
	Temporary interference of emergency response or evacuation plans during installation.	Potentially significant	Traffic control plans to manage emergency traffic through installation zones.
	Vector production as a result of standing water in systems.	Potentially significant	Mitigation at the project planning phase. Installation of units with adequate separation between inlet and outlet pipes to mitigate vector habitats. Sealing of units to prevent vector harborage. Installation of netting over devices to further mitigate vector production. Employing assistance of vector control agencies. Installation of systems away from high-density areas and residential housing where possible.
Gross solids removal devices	Same as vortex separation systems	Same as vortex separation systems	Same as vortex separation systems

Table 1-1: Summary of Environmental Impacts Trash TMDL for the Los Angeles River Watershed			
Implementation Alternatives by Resource Area	**Environmental Impacts**	**Significance Determination**	**Mitigation Measures**
Trash nets	**No impact (see section 7.10)**	**No impact**	**No mitigation necessary**
Catch Basin Inserts	**Catch basin cleaning and maintenance could pose risks to maintenance workers.**	**Potentially significant**	**Requirement of workers to obtain proper maintenance, record keeping, and disposal activities training, OSHA-required Health and Safety Training, and OSHA Confined Space Entry training.**
Increased street sweeping	**No impact (see section 7.10)**	**No impact**	**No mitigation necessary**
Enforcement of Litter Laws	**No impact (see section 7.10)**	**No impact**	**No mitigation necessary**
Public Education	**No impact (see section 7.10)**	**No impact**	**No mitigation necessary**
Hydrology and Water Quality			
Vortex Separation Systems	**Potential for flooding** **Changes in drainage patterns, rate and amount of surface water runoff** **Change in currents or surface water movement**	**Potentially significant** **Potentially significant** **Less than significant**	**Proper design and sizing of units with overflow/bypass and regular maintenance.** **Proper design and sizing of units with overflow/bypass and regular maintenance. Enlargement of storm drain system if necessary.** **No mitigation necessary**

Table 1-1: Summary of Environmental Impacts

Trash TMDL for the Los Angeles River Watershed

Implementation Alternatives by Resource Area	Environmental Impacts	Significance Determination	Mitigation Measures
Gross Solids Removal Devices	**Potential for flooding**	**Potentially significant**	**Proper design and sizing of units with overflow/bypass and regular maintenance.**
	Changes in drainage patterns, rate and amount of surface water runoff	**Potentially significant**	**Proper design and sizing of units with overflow/bypass and regular maintenance. Enlargement of storm drain system if necessary.**
	Change in currents or surface water movement	**Less than significant**	**No mitigation necessary**
Trash Nets	**Potential for flooding**	**Potentially significant**	**Proper design and sizing of units with overflow/bypass and regular maintenance.**
Catch Basin Inserts	**Potential for flooding**	**Potentially significant**	**Proper design and sizing of units with overflow/bypass and regular maintenance.**
Increased Street Sweeping	**No impact (see section 7.11)**	**No impact**	**No mitigation necessary**
Enforcement of Litter Laws	**No impact (see section 7.11)**	**No impact**	**No mitigation necessary**
Public Education	**No impact (see section 7.11)**	**No impact**	**No mitigation necessary**
Land Use			
Vortex Separation Systems	**Substantial alteration of present or planned land use of an area**	**Less than significant**	**No mitigation necessary**
Gross Solids Removal Devices	**Substantial alteration of present or planned land use of an area**	**Less than significant**	**No mitigation necessary**
Trash Nets	**No impact (see section 7.12)**	**No impact**	**No mitigation necessary**
Catch Basin Inserts	**No impact (see section 7.12)**	**No impact**	**No mitigation necessary**

Table 1-1: Summary of Environmental Impacts

Trash TMDL for the Los Angeles River Watershed

Implementation Alternatives by Resource Area	Environmental Impacts	Significance Determination	Mitigation Measures
Increased Street Sweeping	**No impact (see section 7.12)**	**No impact**	**No mitigation necessary**
Enforcement of Litter Laws	**No impact (see section 7.12)**	**No impact**	**No mitigation necessary**
Public Education	**No impact (see section 7.12)**	**No impact**	**No mitigation necessary**
Noise			
Vortex Separation Systems	**Short-term increase in noise levels during installation** **On-going limited duration Increase in ambient noise levels during clean-outs**	**Potentially significant**	**Source Control-** **(i) Scheduling – performing noisy work during less sensitive time periods** **(ii) Equipment Restrictions – restricting the type of equipment used** **(iii) Substitute Methods –using quieter or newer equipment when possible** **(iv)Exhaust Mufflers – ensuring equipment have quality mufflers installed** **Path Control** **(i) Noise barriers – semi-portable or portable concrete or wooden barriers** **(ii)Increased distance – perform noisy activities further away from receptors** **Receptor Control** **(i) Community participation –open dialog to involve affected parties**

Table 1-1: Summary of Environmental Impacts

Trash TMDL for the Los Angeles River Watershed

Implementation Alternatives by Resource Area	Environmental Impacts	Significance Determination	Mitigation Measures
			(ii) Noise complaint process – ability to log and respond to noise complaints
Gross solids removal devices	**Short-term increase in noise levels during installation** **On-going limited duration Increase in ambient noise levels during clean-outs**	**Potentially significant**	**Source Control-** **(i) Scheduling – performing noisy work during less sensitive time periods** **(ii) Equipment Restrictions – restricting the type of equipment used** **(iii) Substitute Methods –using quieter or newer equipment when possible** **(iv)Exhaust Mufflers – ensuring equipment have quality mufflers installed** **Path Control** **(i) Noise barriers – semi-portable or portable concrete or wooden barriers** **(ii)Increased distance – perform noisy activities further away from receptors** **Receptor Control** **(i) Community participation –open dialog to involve affected parties** **(ii) Noise complaint process – ability to log and respond to noise complaints**
Trash nets	**Short-term increase in noise levels**	**Potentially**	**Source Control-**

Table 1-1: Summary of Environmental Impacts

Trash TMDL for the Los Angeles River Watershed

Implementation Alternatives by Resource Area	Environmental Impacts	Significance Determination	Mitigation Measures
	during installation On-going limited duration Increase in ambient noise levels during clean-outs	significant	(i) Scheduling – performing noisy work during less sensitive time periods (ii) Equipment Restrictions – restricting the type of equipment used (iii) Substitute Methods –using quieter or newer equipment when possible (iv)Exhaust Mufflers – ensuring equipment have quality mufflers installed Path Control (i) Noise barriers – semi-portable or portable concrete or wooden barriers (ii)Increased distance – perform noisy activities further away from receptors Receptor Control (i) Community participation –open dialog to involve affected parties (ii) Noise complaint process – ability to log and respond to noise complaints
Catch Basin Inserts	No impact (see Section 7.13)	Less than significant	No Mitigation Necessary
Increased street sweeping	On-going limited duration increase in ambient noise levels during clean-	Potentially significant	Source Control- (i) Scheduling – performing noisy work during less

Table 1-1: Summary of Environmental Impacts

Trash TMDL for the Los Angeles River Watershed

Implementation Alternatives by Resource Area	Environmental Impacts	Significance Determination	Mitigation Measures
	outs		**sensitive time periods** **(ii) Equipment Restrictions – restricting the type of equipment used** **(iii) Substitute Methods –using quieter or newer equipment when possible** **(iv)Exhaust Mufflers – ensuring equipment have quality mufflers installed** **Receptor Control** **(i) Community participation –open dialog to involve affected parties** **(ii) Noise complaint process – ability to log and respond to noise complaints**
Enforcement of Litter Laws	**No impact (see Section 7.13)**	**Less than significant**	**No mitigation necessary**
Public Education	**No impact (see Section 7.13)**	**Less than significant**	**No mitigation necessary**
Population and Housing			
Vortex Separation Systems	**No impact (see Section 7.14)**	**No impact**	**No mitigation necessary**
Gross Solids Removal Devices	**No impact (see Section 7.14)**	**No impact**	**No mitigation necessary**
Trash Nets	**No impact (see Section 7.14)**	**No impact**	**No mitigation necessary**

Table 1-1: Summary of Environmental Impacts

Trash TMDL for the Los Angeles River Watershed

Implementation Alternatives by Resource Area	Environmental Impacts	Significance Determination	Mitigation Measures
Catch Basin Inserts	**No impact (see Section 7.14)**	**No impact**	**No mitigation necessary**
Increased Street Sweeping	**No impact (see Section 7.14)**	**No impact**	**No mitigation necessary**
Enforcement of Litter Laws	**No impact (see Section 7.14)**	**No impact**	**No mitigation necessary**
Public Education	**No impact (see Section 7.14)**	**No impact**	**No mitigation necessary**
Public Services			
Vortex Separation Systems	**Delay of fire and police services due to installation activities**	**Potentially significant**	**Notify local fire and police service providers of construction activities and road closures and establish alternative routes and traffic control**
	Increased maintenance of public facilities, including roads	**Potentially significant**	**Increase in related service charges to fund maintenance and monitoring requirements**
	Increase in monitoring program	**Potentially significant**	**Increase in related service charges to fund maintenance and monitoring requirements**
Gross Solids Removal Devices	**Delay of fire and police services**	**Potentially significant**	**Notify local fire and police service provides of construction activities and road closures and establish alternative routes and traffic control**
	Increased maintenance of public facilities, including roads	**Potentially significant**	**Increase in related service charges to fund maintenance and monitoring requirements**
	Increase in monitoring program	**Potentially significant**	**Increase in related service charges to fund maintenance and monitoring requirements**

Table 1-1: Summary of Environmental Impacts

Trash TMDL for the Los Angeles River Watershed

Implementation Alternatives by Resource Area	Environmental Impacts	Significance Determination	Mitigation Measures
Trash Nets	**Delay of fire and police services** **Increased maintenance of public facilities, including roads**	**Potentially significant** **Potentially significant**	**Notify local fire and police service provides of construction activities and road closures and establish alternative routes and traffic control.** **Efficient timing of cleanings in areas of high trash generation.**
Catch Basin Inserts	**Delay of fire and police services** **Increased maintenance of public facilities, including roads**	**Potentially significant** **Potentially significant**	**Notify local fire and police service provides of construction activities and road closures and establish alternative routes and traffic control.** **Efficient timing of cleanings in areas of high trash generation.**
Increased Street Sweeping	**Increased maintenance of public facilities, including roads**	**Potentially significant**	**Efficient timing of cleanings in areas of high trash generation.**
Enforcement of Litter Laws	**No impact (see Section 7.15)**	**No impact**	**No mitigation necessary**
Public Education	**No impact (see Section 7.15)**	**No impact**	**No mitigation necessary**
Recreation			
Vortex Separation Systems	**Impact quality or quantity of recreational opportunities**	**Less than significant**	**No mitigation necessary**
Gross Solids Removal Devices	**Impact quality or quantity of recreational opportunities**	**Less than significant**	**No mitigation necessary**
Trash Nets	**Impact quality or quantity of recreational opportunities**	**Less than significant**	**No mitigation necessary**
Catch Basin Inserts	**Impact quality or quantity of**	**Less than**	**No mitigation necessary**

Table 1-1: Summary of Environmental Impacts

Trash TMDL for the Los Angeles River Watershed

Implementation Alternatives by Resource Area	Environmental Impacts	Significance Determination	Mitigation Measures
	recreational opportunities	significant	
Increased Street Sweeping	No impact (see Section 7.16)	No impact	No mitigation necessary
Enforcement of Litter Laws	No impact (see Section 7.16)	No impact	No mitigation necessary
Public Education	No impact (see Section 7.16)	No impact	No mitigation necessary
Transportation and Traffic			
Vortex Separation Systems	Potential short-term changes in traffic flow during installation Increase in vehicular traffic during clean-outs	Potentially significant	(i) Implement a construction traffic management plan (ii) Provide alternative pedestrian and bicycle access routes where applicable. (iii) Provide advance notice to any affected residents, businesses, and property owners in the vicinity of each installation site
Gross solids removal devices	Potential short-term changes in traffic flow during installation Increase in vehicular traffic during clean-outs	Potentially significant	(i) Implement a construction traffic management plan (ii) Provide alternative pedestrian and bicycle access routes where applicable. (iii) Provide advance notice to any affected residents, businesses, and property owners in the vicinity of each installation site
Trash nets	Potential short-term changes in traffic flow during installation Increase in vehicular traffic during	Potentially significant	(i) Implement a construction traffic management plan (ii) Provide alternative pedestrian and bicycle

Table 1-1: Summary of Environmental Impacts

Trash TMDL for the Los Angeles River Watershed

Implementation Alternatives by Resource Area	Environmental Impacts	Significance Determination	Mitigation Measures
	clean-outs		access routes where applicable. (iii) Provide advance notice to any affected residents, businesses, and property owners in the vicinity of each installation site
Catch Basin Inserts	No impact (see Section 7.17)	No impact	No mitigation necessary
Increased street sweeping	Potential short-term changes in traffic flow during street sweeping	Potentially significant	Provide notice to any affected residents, businesses, and property owners in the vicinity of areas targeted for increased street sweeping frequency
Enforcement of Litter Laws	No impact (see Section 7.17)	No impact	No mitigation necessary
Public Education	No impact (see Section 7.17)	No impact	No mitigation necessary
Utilities and Service Systems			
Power or Natural Gas	No impact (see Section 7.18)	No impact	No mitigation necessary
Communication Systems	No impact (see Section 7.18)	No Impact	No mitigation necessary
Water Supply Systems	No impact (see Section 7.18)	No Impact	No mitigation necessary
Sewer or Septic Tanks	No impact (see Section 7.18)	No Impact	No mitigation necessary
Stormwater Drainage	Increased risk of flooding	Potentially Significant	Design and installation of trash capture systems (catch basin inserts or full capture systems) shall be prepared by a Licensed Civil Engineer or Environmental Engineer in consultation with Hydrologist to ensure there will be adequate capacity for stormwater flows and or a stormwater

Table 1-1: Summary of Environmental Impacts

Trash TMDL for the Los Angeles River Watershed

Implementation Alternatives by Resource Area	Environmental Impacts	Significance Determination	Mitigation Measures
			bypass system. There shall be regular maintenance of trash capture systems to remove trash and to prevent the accumulation of trash especially prior to forecasted storm events.
Solid Waste Disposal	Increased landfill waste	Less than Significant	No mitigation necessary

2. REGULATORY REQUIREMENTS FOR ENVIRONMENTAL IMPACT ANALYSIS OF THE TMDL

This section presents the regulatory requirements for assessing environmental impacts of a TMDL implemented through a Basin Plan Amendment at the Regional Board. This TMDL for trash in the Los Angeles River Watershed is 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 the California Environmental Quality Act (CEQA), including preparation of an initial study, negative declaration, and environmental impact report (California Code of Regulations, Title 14, Section 15251(g)). As the proposed amendment to the Basin Plan is part of the basin planning process, the environmental information developed for and included with the amendment is considered a substitute for an initial study, negative declaration, and/or environmental impact report.

2.2 CALIFORNIA CODE OF REGULATIONS AND PUBLIC RESOURCES CODE REQUIREMENTS

While the "certified regulatory program" of the Regional Board is exempt from certain CEQA requirements, it is subject to the substantive requirements of California Code of Regulations, Title 23, Section 3777(a), which requires a written report that includes a description of the proposed activity, an analysis of reasonable alternatives, and an identification of mitigation measures to minimize any significant adverse environmental impacts. Section 3777(a) also requires the Regional Board to complete an environmental checklist as part of its substitute environmental documents. This checklist is provided in section 10 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, <u>an Environmental Analysis of the reasonably foreseeable methods of compliance</u>. 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 environmental, economic, and technical factors, population and geographic areas, and 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 ENVIRONMENTAL IMPACT ANALYSIS OF EXISTING PROJECTS

Many of the trash TMDL compliance projects discussed in this document have already been implemented by municipalities such as the City of Los Angeles, and public agencies such as Caltrans. To date, all of the structural BMP projects discussed in this document have been deemed categorically exempt from CEQA analysis by the lead agencies that have been installing and monitoring them (see Appendix A). This indicates that the lead agencies consider the environmental impacts from implementing these trash TMDL compliance projects to have no reasonable probability of resulting in significant adverse effects on the environment. An otherwise applicable categorical exemption is not available when the project could result in significant individual or cumulative adverse environmental effects. (Cal. Code Regs. Title 14 § 15300.2.) Except as otherwise discussed in this document, staff has located no evidence to dispute the integrity of these agencies' reliance on the relevant categorical exemptions.

2.5 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 needs to be adequate, complete, and show good faith efforts at full disclosure. (Cal.Code Regs., tit.14, § 15151.) The Court stated in River Valley Preservation Project v. Metropolitan Transit Development Board (1995) 37 Cal.App.4th 154, 178:

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

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

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

3. TMDL OVERVIEW AND PROGRAM OBJECTIVES

3.1 Introduction – Legal Background

The Total Maximum Daily Load (TMDL) for trash in the Los Angeles River Watershed was designed to attain the water quality standards for trash in waterbodies of the watershed. The TMDL was prepared pursuant to state and federal requirements to preserve and enhance water quality in the Los Angeles River Watershed. The adoption of a TMDL is not discretionary and is compelled both by section 303(d) of the federal Clean Water Act (33 USC 1313(d)) and by a federal consent decree, Heal the Bay Inc., et al. v. Browner, et al. C 98-4825 SBA (United States District Court, Northern District of California, 1999) approved on March 22, 1999.

The California Water Quality Control Plan, Los Angeles Region, also known as the *Basin Plan*, sets water quality standards for surface waters and ground waters in the region. These standards are comprised of designated beneficial uses for surface and ground 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 Los Angeles River, also requiring water quality standards for all surface waters as required pursuant to the federal Clean Water Act (CWA).

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

TMDLs must be established at a level necessary to attain water quality standards, considering seasonal variations and a margin of safety. 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.
As part of California's 1996 and 1998 303(d) list submittals, the Regional Board identified the reaches of the Los Angeles River at the Sepulveda Flood Basin and downstream as being impaired due to trash.

A consent decree between the USEPA, the Santa Monica BayKeeper and Heal the Bay, represented by the Natural Resources Defense Council (NRDC), was signed on March 22, 1999. This consent decree requires that all TMDLs for the Los Angeles Region, for 1998 listed water, be adopted within 13 years. The consent decree also prescribed schedules for certain TMDLs. According to this schedule, a Trash TMDL for the Los Angeles River watershed had to be approved by EPA before March 2001.

On September 19, 2001, the Regional Board adopted a Trash TMDL for the Los Angeles River Watershed. The TMDL was subsequently approved by the State Water Resources Control Board (State Water Board) on February 19, 2002 and by the Office of Administrative Law on July 16, 2002. The USEPA approved the Los Angeles River Trash TMDL on August 1, 2002. Although the TMDL included provisions relating to the Los Angeles River Estuary, which was not listed, USEPA agreed that the Estuary met the criteria for listing and approved that part of the TMDL as well. The City of Los Angeles and the County of Los Angeles both filed petitions and complaints in Los Angeles Superior Court challenging the Los Angeles River Trash TMDL. Subsequent negotiations led to a settlement agreement, which became effective on September 23, 2003. Twenty-two other cities[2] ("Cities") sued the Regional Board and State Water Board to set aside the TMDL, on several grounds. The trial court entered an order deciding some claims in favor of the Los Angeles Water Board and State Water Board (collectively "California Water Boards"), and some in favor of the Cities. Both sides appealed, and on January 26, 2006, the Court of Appeal decided every one of the claims in favor of the California Water Boards, except with respect to CEQA compliance. (*City of Arcadia et al.v. State Water Resources Control Board et al.* (2006) 135 Cal.App.4th 1392.) The Cities filed a petition for review by the California Supreme Court, but on April 19, 2006, the Supreme Court declined to hear any of the Cities' claims.

The Appellate Court found that the California Water Boards did not adequately complete the environmental checklist, and that evidence of a "fair argument" of significant impacts existed such that the California Water Boards should have performed an EIR level of analysis through an EIR or its functional equivalent. (135 Cal.App.4th at 1420-26.) The Court therefore affirmed a writ of mandate issued by the trial court, which ordered the California Water Boards to set aside and not implement the TMDL, until it has been brought into compliance with CEQA.

On June 8, 2006 the Regional Board set aside the trash TMDL and resolution # 01-013 which established it, pursuant to the writ of mandate. Setting aside the TMDL was not deemed a repudiation of the settlement agreement entered into between the Los Angeles Regional Water Quality Control Board and the City of Los Angeles and the

[2] The cities include Arcadia, Baldwin Park, Bellflower, Cerritos, Commerce, Diamond Bar, Downey, Irwindale, Lawndale, Monrovia, Montebello, Monterey Park, Pico Rivera, Rosemead, San Gabriel, Santa Fe Springs, Sierra Madre, Signal Hill, South Pasadena, Vernon, West Covina, and Whittier. They are members of a group that refers to itself as "The Coalition for Practical Regulation (CPR)."

County of Los Angeles, which was executed on September 24, 2003, and the Los Angeles Water Board expressed its continued intent to be bound by that agreement. The Regional Board also directed staff to revise the CEQA documentation as directed by the writ of mandate, and to prepare and submit for the Regional Board's reconsideration, a TMDL for Trash in the Los Angeles River Watershed, consistent with the requirements of the writ. Staff was also directed to incorporate into its proposed revised TMDL the changes agreed upon in the settlement with the City of Los Angeles, County of Los Angeles and the Los Angeles County Flood Control District.

The Los Angeles River Trash TMDL is a Basin Plan Amendment and is subject to the 2001 provision of Public Resources Code Section 21083.9 that requires a CEQA Scoping meeting 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 June 28, 2006 a CEQA Scoping hearing was held to present and discuss the foreseeable potential environmental impacts of compliance with the Los Angeles River Trash TMDL. A notice of the CEQA Scoping meeting was sent to interested parties including cities and/or counties with jurisdiction in or bordering the Los Angeles River watershed. Input from all stakeholders and interested parties was solicited for consideration in the development of the CEQA document. The Regional Board received seven comment letters after the CEQA scoping meeting. These commenters included Lily Y. Lee; American Plastic Council and Polystyrene Packaging Council; Contech Stormwater Solutions; City of Azusa; City of South Pasadena; City of Inglewood and City of Claremont.

On July 7, 2006 a new Los Angeles River Trash TMDL staff report, Basin Plan Amendment incorporating the changes agreed upon in the settlement with the City of Los Angeles, County of Los Angeles and the Los Angeles County Flood Control District, and CEQA document were released for a consideration of adoption at the scheduled September 14, 2006 Regional Board Hearing. Additional revisions were made to the TMDL to update the Implementation and Compliance schedules and include city-specific baseline waste load allocations derived from results of the baseline monitoring program conducted by the Los Angeles County Department of Public Works (LACDPW). In addition, the CEQA checklist was revised as directed by the writ of mandate. Staff received 21 comment letters on the July 7, 2006 draft TMDL. Commenters included California Department of Transportation (Caltrans); City of Arcadia; City of Commerce; City of Downey Police Department; City of Downey; City of San Gabriel; City of Signal Hill Police Department; City of Signal Hill; County of Los Angeles Sheriff's Department; Downey Brand – representing the City of Los Angeles; Friends of the Los Angeles River; Heal the Bay & Santa Monica Baykeeper; Los Angeles Unified School District; Long Beach Unified School District; Polystyrene Packaging Council; Richards Watson Gershon - representing five cities; Rutan & Tucker – representing 22 cities and CPR; Sanitation Districts of Los Angeles County; Southern California Association of Governments (SCAG); City of South Pasadena; and City of Temple City. Many of the comments concerned CEQA compliance.

A complete Response to Comments was prepared for all comments received (see Appendices B and C.). The TMDL was scheduled to be heard at the September 14, 2006 Regional Board Meeting, was continued to the October 24, 2006 Board Meeting, and thereafter delayed to allow staff time to rewrite the SED to more fully accommodate the many comments received both to the Regional Board in writing, and in subsequent judicial proceedings relating to this matter.

This SED, including the appendices herein is being released for public comment accompanying the TMDL staff report, Basin Plan amendment, and tentative resolution for adoption by the Regional Board; these documents should be considered as a whole when evaluating the environmental impacts of implementing the TMDL, and should together be considered, with any subsequent responses to comments, as the material required by 23 Cal Code Regs §3777.

3.2 TMDL GOALS AND WATER QUALITY OBJECTIVES

The Water Quality Control Plan Los Angeles Region (Basin Plan) designates beneficial uses of waterbodies, establishes water quality objectives for the protection of these beneficial uses, and outlines a plan of implementation for maintaining and enhancing water quality. The proposed amendment would incorporate into the Basin Plan a TMDL for trash in the Los Angeles River Watershed.

Reaches of the Los Angeles River that are impaired by trash, and listed on the State's List of Water Quality Limited Segments (303(d) list), are Tujunga Wash (downstream Hansen Dam to Los Angeles River), Los Angeles River Reach 5 (within Sepulveda Basin), Los Angeles River Reach 4 (Sepulveda Dam to Riverside Dr.), Los Angeles River Reach 3 (Riverside Dr. to Figueroa St.), Los Angeles River Reach 2 (Figueroa St. to upstream Carson St.), Los Angeles River Reach 1 (upstream Carson St. to estuary), Burbank Western Channel, Verdugo Wash (Reaches 1 and2), Arroyo Seco Reach 1 (downstream Devil's Gate Dam) and Reach 2 (W. Holly Ave. to Devil's Gate), and Rio Hondo Reach 1 (Santa Ana Freeway to Los Angeles River). Peck Road Lake, Echo Park Lake and Lincoln Park Lake are also listed as impaired for trash. In addition, as noted above, the Regional Board has determined, and the USEPA has agreed, that the Los Angeles River Estuary is impaired for trash as debris flushed down from the upper reaches of the river collect there.

The beneficial uses likely to be impaired by trash include: water contact recreation- (REC-1), limited water contact recreation- (LREC-1), and non-contact water recreation (REC-2); warm freshwater habitat (WARM); wildlife habitat (WILD), estuarine habitat (EST); marine habitat (MAR); rare and threatened or endangered species (RARE); migration of aquatic organisms (MIGR); spawning, reproduction and early development of fish (SPWN); commercial and sport fishing (COMM); shellfish harvesting (SHELL); wetland habitat (WET); and cold freshwater habitat (COLD).

The Regional Board's goal in adopting the TMDL is to eliminate the significant water quality impacts caused by trash in waterways. Small and large floatables can inhibit the growth of aquatic vegetation, decreasing spawning areas and habitats for fish and other living organisms. Wildlife living in rivers and in riparian areas can be harmed by ingesting or becoming entangled in floating trash. Trash which does not float, but which settles, instead, is less obvious. The settleables include glass, cigarette butts, rubber, construction debris and more. Settleables can be a problem for bottom feeders and can contribute to sediment contamination. Some debris (e.g. diapers, medical and household waste) are a source of bacteria and toxic substances. Floating debris that is not trapped and removed will eventually end up on the beaches or in the open ocean, repelling visitors away from our beaches and degrading coastal waters. In addition, persistent trash such as plastics is a worldwide problem and trash from Los Angeles may pollute the Pacific Ocean and distant Pacific beaches for many years.

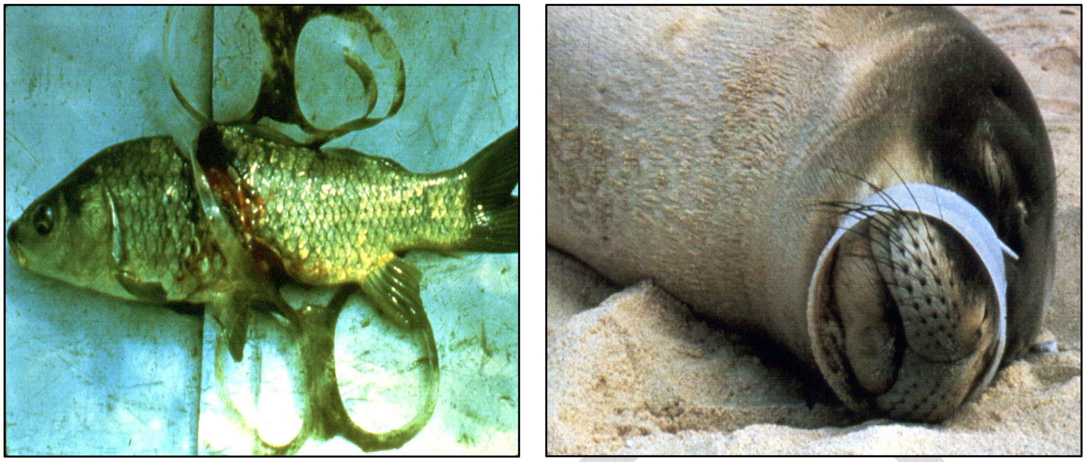


Figure 3.2-1: Impacts to wildlife from trash

The proposed TMDL sets the numeric water quality targets equal to zero in order to implement the Basin Plan's narrative water quality objectives for trash:

"Waters shall not contain floating materials, including solids, liquids, foams, and scum, in concentrations that cause nuisance or adversely affect beneficial uses."

"Waters shall not contain suspended or settable material in concentrations that cause nuisance or adversely affect beneficial uses."

For purposes of controlling point source discharges, municipal and Caltrans storm sewer discharges, trash is defined as man-made litter that can be retained by a 5 mm mesh screen. Additionally, a number of "best management practices" (BMPs) have been approved as "full capture devices" because of their expected performance, such that if a responsible agency implements these BMPs, the agency will be deemed in compliance with what will ultimately be a zero waste load allocation, in all drainage areas served by these devices.

The proposed TMDL establishes a 10-year plan for progressively reducing the amount of trash that may be discharged to the river. The schedule requires a 30% reduction in the first year and annual reductions of 10% in subsequent years until the final numeric target of zero trash is reached. Final compliance with the numeric target is required in the 10th year, based on a rolling 3-year average. The final loads will be re-evaluated and may be revised if future studies demonstrate that a higher loading capacity will be sufficiently protective of the beneficial uses within the river.

The TMDL will be implemented primarily through the National Pollutant Discharge Elimination System storm water permits. Waste Load Allocations will be assigned to the Permittees and Co-permittees (hereinafter referred to as Permittees) of the Los Angeles

County Municipal Stormwater Permit (MS4) and Caltrans. In addition, Waste Load Allocations may be issued to additional facilities under Phase II of the US EPA Stormwater Permitting Program. Waste Load Allocations assigned under the MS4 permit and the Caltrans permit will be based on a phased reduction from estimated discharges (i.e., baseline) over the compliance period until the final Waste Load Allocation (currently set at zero) is met. The baseline allocation for the MS4 Permittees was derived from data collected for this purpose as part of a Baseline Monitoring Program.

4. DESCRIPTION OF ALTERNATIVES

These substitute environmental documents analyze two Program Alternatives that encompass actions within the jurisdiction of the Regional Board and implementing municipalities and agencies. The program alternatives include the trash TMDL as it is proposed for Regional Board adoption; a trash TMDL established by the US EPA, and a No Program Alternative in which a trash TMDL is not implemented. While a No Program Alternative is unlawful, because a TMDL is required by Section 303(d) of the Clean Water Act and a federal consent decree, this alternative is analyzed to allow decision makers to compare the impacts of approving a proposed alternative and its components compared with the impacts of not approving a proposed alternative. The specifics of the many projects which would make up a program alternative are discussed in detail in Section 6 and include structural and non structural Best Management Practices (BMPs) that are reasonably foreseeable to be implemented under the trash TMDL program alternatives.

This document does not analyze a "partial" TMDL; for example, a TMDL which would achieve only a 70% or only an 80% reduction in trash. This sort of alternative was considered and rejected because, to the extent that significant adverse environmental impacts would be created by compliance with this proposed TMDL, while a "partial" TMDL would, in fact, have fewer of those environmental impacts associated with .0compliance (although, also, less environmental benefits of the TMDL), the specific legal requirements of section 303(d) of the Clean Water Act require a level necessary to achieve water quality standards. Thus, a "partial" TMDL is unlawful because a partial reduction in trash would not meet water quality standards.
The components assessed at a program level generally are program elements that would be implemented as part of the trash TMDL, but these elements do not have specific locations or design details identified. The components assessed at a project level have specific locations which will be determined by implementing municipalities and agencies. The project-level components will be subject to additional future environmental review, including review by cities and municipalities implementing trash TMDL projects.

4.1 PROGRAM ALTERNATIVES

4.1.1 Alternative1 - Regional Board TMDL

This program alternative is based on the TMDL that is presently proposed for Regional Board consideration. The TMDL focuses on reduction in sources of trash from municipal stormdrains and highways and assigns wasteloads to stormwater permittees and Caltrans. The TMDL waste load allocations (WLA) are established through an amendment to the Water Quality Control Plan (Basin Plan) and implemented through National Pollutant Discharge Elimination System (NPDES) permits. The Regional Board TMDL provides a program for addressing the adverse impacts of trash through a progressive reduction in trash discharges to the Los Angeles River, through a 10 year schedule, which is both reasonable and as short as practicable. The WLAs and the schedule when they are incorporated into the Basin Plan will be considered by the NPDES permit writers when developing permit limits that are adopted in separate actions by the Regional Board.

The proposed TMDL establishes a 10-year plan for progressively reducing the amount of trash that may be discharged to the river. The schedule requires a 30% reduction in the first year and annual reductions of 10% in subsequent years until the final numeric target of zero trash discharged is reached. Final compliance with the numeric target is required in the 10th year, based on a rolling 3-year average. The final loads will be re-evaluated and may be revised if future studies demonstrate that a higher loading capacity will be sufficiently protective of the beneficial uses within the river.

The TMDL will be implemented primarily through the NPDES storm water permits. Waste Load Allocations will be assigned to the Permittees and Co-permittees (hereinafter referred to as Permittees) of the Los Angeles County Municipal Stormwater Permit (MS4) and Caltrans. In addition, Waste Load Allocations may be issued to additional facilities under Phase II of the US EPA Stormwater Permitting Program. Waste Load Allocations assigned under the MS4 permit and the Caltrans permit will be based on a phased reduction from estimated discharges (i.e., baseline) over the compliance period until the final Waste Load Allocation (currently set at zero) is met.

Although the Regional Board cannot mandate the manner of compliance, foreseeable environmental impacts from methods of compliance are well known. During the development of the TMDL, a CEQA scoping meeting and a Trash Colloquium meeting were held (see Section 11) during which the manner of compliance was discussed. At these meetings, the most reasonable means of compliance were examined. They included structural methods such as catch basin inserts, structural vortex separation devices, end of pipe trash nets, as well as non-structural alternatives such as increased street sweeping, and enforcement of existing litter laws. At the colloquium, The California Department of Transportation and the City of Glendale presented success stories of trash-BMP installations and performance in their jurisdictions. In addition, the July 7, 2006 release of a draft TMDL Staff Report, CEQA documentation and tentative Basin Plan Amendment included extensive discussion of these methods and comments were received from many stakeholders as outlined in Section 3.1.

This TMDL program alternative anticipates compliance through installation of structural devices (full or partial capture devices in the stormdrain systems), and non-structural methods (institutional controls) as discussed in Section 6. Potential adverse impacts to the environment stem principally from the installation, operation, and maintenance of the full or partial capture devices in the storm drain systems. This document analyzes these impacts and concludes that installation of implementation projects are of relatively short duration and typical of “baseline” construction and maintenance projects that occur presently in the Los Angeles River Watershed/ It also concludes that significant impacts can be mitigated or there are alternative means of compliance available, and that the benefits of the program outweigh any significant adverse environmental effects.

4.1.2 Alternative 2 – US EPA TMDL

This program alternative is based on a TMDL that would be established by the United States Environmental Protection Agency, pursuant to the consent decree, if the Regional Board fails to adopt a Trash TMDL. Because the technical analysis will be very similar to the Regional Board analysis and because the same laws and regulations apply, it is assumed that the technical portions and WLAs of this TMDL Program Alternative will be essentially the same as Program Alternative 1. However, because such a TMDL is not implemented through a Basin Plan amendment, the WLAs will be implemented through NPDES permit limits as the permits are renewed without consideration of a compliance schedule. Because NPDES permits are renewed every five years, all responsible parties, municipalities and Caltrans, could be required to be in full compliance immediately following the TMDL adoption by USEPA, or within 5 years.

This TMDL program alternative also anticipates compliance through installation of structural devices (full or partial capture devices in the stormdrain systems), and non-structural methods (institutional controls) as discussed in Section 6. Potential adverse impacts to the environment stem principally from the construction and operation of the full or partial capture devices in the storm drain systems. This document analyzes these impacts and concludes that installation of implementation projects are of relatively short duration and typical of "baseline" construction and maintenance projects that occur presently in the Los Angeles River Watershed/ It also concludes that significant impacts can be mitigated or there are alternative means of compliance available, and that the benefits of the program outweigh any significant adverse environmental effects.

4.1.3 Alternative 3 – No Program Alternative

This program alternative assumes that neither the USEPA nor the Regional Board implements a trash TMDL. While cities and municipalities could implement BMPs on a discretionary basis, this CEQA analysis is based on the assumption that no additional trash reduction BMPs would be implemented in addition to those that are presently in place. However, the No Project TMDL is contrary to federal and state law and a Court Ordered Consent Decree between citizen plaintiffs and the US Environmental Protection Agency. Therefore, the failure to implement a trash TMDL is unlawful.

In addition, while impact to the environment from construction or maintenance of full or partial capture devices in the stormdrain systems would be avoided in this No Program alternative, No Program would *not* restore beneficial uses to the Los Angeles River. Either TMDL Program Alternative will restore beneficial uses in the Los Angeles River watershed and attain water quality standards by removing trash from the Los Angeles River and its tributaries. As such, either trash TMDL program alternative 1 or 2 represents a benefit to the environment and the No TMDL Program Alternative represents a continued trash impairment of the environment.

4.1.4 Recommended Program Alternative

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

Alternative 3 is not a feasible alternative because, while it avoids impacts due to discrete installation projects, it allows the trash impairment of the river and the Los Angeles contribution to the ocean plastics problem to continue. Both program alternatives 1 and 2 will comply with the law and the federal consent decree, remove the large trash impairment from the Los Angeles River, and reduce the Los Angeles River's contribution to the ocean plastics pollution problem at the comparatively small environmental cost of small installation projects throughout the watershed.

The key difference between program alternatives 1 and 2 is the establishment of an implementation schedule. While the same WLAs will need to be met and the same technological choices will be available by both alternatives, alternative 1 will allow a measured implementation plan, resulting in full compliance in 10 years. Alternative 2, in contrast, will require compliance at the time of permit renewal, in all permit cases, in less than 5 years. The environmental impacts due to alternative 2 may be of greater severity as the intensity of implementation actions will be greater to comply with the shorter time frame. The longer schedule of alternative 1 allows for prioritization and planning, more thoroughly mitigated impacts, more appropriately designed, sited and sized structural devices and, therefore, less environmental impact, in general. In addition, prioritization and planning will likely result in more efficient use of funds and lower overall costs.

4.2 PROJECT LEVEL ALTERNATIVES

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

Although the Regional Board cannot mandate the manner of compliance, foreseeable environmental impacts from methods of compliance are well known, as are feasible mitigation measures. During the development of the TMDL, a CEQA scoping meeting and a Trash Colloquium meeting were held (see Section 11) during which the manner of compliance was discussed. At these meetings, the most reasonable means of compliance discussed included structural methods such as catch basin inserts, structural vortex separation devices, end of pipe trash nets, as well as non-structural alternatives such as increased street sweeping, and enforcement of existing litter laws. In addition, the July 7, 2006 release of a draft TMDL Staff Report, CEQA documentation and tentative Basin Plan Amendment included extensive discussion of these methods and comments were received from many stakeholders as outlined in Section 3.1.

The components assessed at a project level have specific locations which will be determined by implementing municipalities and agencies. The project-level components will be subject to additional future environmental review, including review by cities and municipalities implementing trash TMDL projects. Section 6 of this SED includes an extensive discussion of the project alternatives.

5. AREAS OF CONTROVERSY

This SED discusses three areas of controversy regarding the trash TMDL: the form of the environmental analysis, compliance, and costs. Compliance and cost issues do not directly pertain to environmental impacts and their mitigation, but these issues have been raised in public meetings and comments regarding the trash TMDL, and are discussed below.

5.1 FORM OF ENVIRONMENTAL ANALYSIS DOCUMENTS

As noted in Section 3.1, in response to a writ of mandate that resulted from a lawsuit by 22 cities, on June 8, 2006 the Regional Board set aside the trash TMDL, and resolution # 01-013 which established it. Setting aside the TMDL was not deemed a repudiation of the settlement agreement entered into between the Los Angeles Regional Water Quality Control Board and the City of Los Angeles and the County of Los Angeles, which was executed on September 24, 2003, and the Los Angeles Water Board expressed its continued intent to be bound by that agreement. The Regional Board also directed staff to revise the CEQA documentation as directed by the writ of mandate, and to prepare and submit for the Regional Board's reconsideration, a TMDL for Trash in the Los Angeles River Watershed, consistent with the requirements of the writ. Staff was also directed to incorporate into its proposed revised TMDL the changes agreed upon in the settlement with the City of Los Angeles, County of Los Angeles, and the Los Angeles County Flood Control District.

The Appellate Court found that the California Water Boards did not adequately complete the environmental checklist, and that evidence of a "fair argument" of significant impacts existed such that the California Water Boards should have performed an EIR level of analysis through an EIR or its functional equivalent. (135 Cal.App.4th at 1420-26.) The Court therefore affirmed the writ of mandate issued by the trial court, which ordered the California Water Boards to set aside and not implement the TMDL, until it has been brought into compliance with CEQA.

This Substitute Environmental Document addresses the concerns expressed by plaintiffs regarding the environmental analysis for the trash TMDL. The SED complies with CEQA guidelines, Water Board regulations, and the Porter-Cologne Water Quality Control Act, as a certified regulatory program (Public Resources Code section 21080.5 and 21000 et seq; 14 Cal. Code Regs. § 15251(g) and 15252; 23 Cal. Code Regs. § 3782)

The Superior Court of California, in an order dated October 31, 2006, found that "The language 'functional equivalent' and 'substitute environmental documents' have caused a semantic debate between the parties. The Court finds there is no substantive distinction between the two phrases." The Regional Board uses the term substitute environmental document (SED), the appropriate term derived from the Public Resources Code section 21080.5 and section 15252 of Title 14 of the California Code of Regulations, and is in full compliance with the Court's requirement to prepare a functional equivalent of an EIR. After several subsequent court appearances and receipt of numerous CEQA comments, the Regional Board postponed its reconsideration of the trash TMDL to create this comprehensive SED to ensure all comments were addressed.

5.2 COMPLIANCE OPTIONS

Several commenters have assumed in comments to the Regional Board that there is only one way to comply with the TMDL and that is through vortex separation system, full-capture devices such as Continuous Deflection Separator (CDS) units. Predicated on that erroneous assumption, cost estimates become extreme and implementation in general becomes more difficult.

At the time of the 2001 Trash TMDL, although the option to develop other full capture devices and to use a partial capture system with increased non-structural measures were always available as options for complying agencies or municipalities, only one full capture device had been submitted by responsible agencies for certification by this Regional Board - the vortex separator system. Perhaps this was the source of the confusion.

It is clear in the TMDL documents released in July of 2006 and accompanying this SED, that now there are several, board-certified, full capture devices several of them less expensive. The options to develop other full capture devices or to use a partial capture system with increased non-structural measures are also still available. The devices and options are discussed in section VIII of the Staff Report and many technical details of the options are included in Section 6 of this SED.

A Trash Colloquium was held on August 25, 2006 where presentations about two of the currently Board-certified full capture devices were presented: first, the Caltrans developed full capture device, the Gross Solids Removal Devices (GSRD) and, second, the Cities of Glendale, La Canada Flintridge, Pasadena and Burbank's full capture brush and mesh catch basin inserts.

Mr. Robert Wu, Caltrans Senior Transportation Engineer, presented the GSRD with designs of Linear Radial and Inclined Screen that have been certified as full capture systems. Dimensions of Linear Radial GSRDs vary depending on the drainage area. Two sizes, 5 mm and 3 mm, of Inclined Screen GSRDs were studied. There are wide ranges of construction costs from $100,000 to $210,000 per unit due to actual size and site conditions. For example, Caltrans has installed the Linear Radial GSRD (LR1 I-10) off the I-10 Freeway at Rosemead and the Inclined Screen GSRD (IS1 SR-170) in the City of North Hollywood along the northbound side of State Route 170.

Mr. Jack Amar, Environmental Program Administrator for the City of Glendale, proposed a simple but cost effective method that the City developed that has also been certified as a full capture system. Continuous broom brushes were installed along the upper edge of storm drain inlets to prevent trash from entering. Inside the catch basins, a full capture 5 mm screen completely covers the basin to avoid the overflow of trash. The cost estimated is approximately $800 per catch basin. Each catch basin may need to be cleaned by a vacuum truck once per wet season for 45 minutes to one hour. For example, brush and mesh full capture systems have been installed in the City of Glendale in existing storm drains located at the intersection of Isabel and Broadway, the intersection of Jackson and Broadway, at the post office on Broadway, and in two locations north of the post office. These are urban, high trash loading sites.

The procedures and requirements for certification of a Best Management Practice (BMP) for trash control as a full capture system are described in a memo from Michael Yang of the Regional Board to The Executive Officer, Mr. Jonathan Bishop, dated August 3, 2004 (see Appendix D). A BMP can be certified as a full capture system if it 1) traps all particles retained by a 5-mm screen, and 2) has a treatment capacity that exceeds the peak flow rate resulting from a one-year, one-hour storm in the subdrainage area treated by the BMP. Additionally, some BMPs must have an end-of-pipe configuration if they would cause a pressure drop. Any pipes required by a BMP must be adequately sized to carry peak flows from the subdrainage area. Lastly, the BMP must be regularly inspected and serviced to continually maintain adequate flow-through capacity.

The process for certification of a BMP as a full capture system begins with submittal of a letter from the implementing agency requesting "full capture system certification" along with any necessary supporting documentation to the Executive Officer. Regional Board staff will then schedule a time for the proponent to present the BMP to Regional Board staff, and will conduct a site survey if necessary. Staff will then inform the proponent of any additional required information, and will subsequently make a written determination on the certification of the proposed BMP as a full capture system. As of February 2007, four requests for certification of a BMP as a full capture system have been submitted. Three have been approved and one is currently under-going review. The Cities of Burbank, Glendale and La Canada Flintridge developed a brush and aluminum mesh combination that can be installed in catch basins. This BMP, along with proper maintenance, is certified as a full capture system. The Hamilton Bowl Trash Nets developed by Fresh Creek Technologies, Inc., for the City of Signal Hill, are certified as a full capture system as long as they meet the additional requirements mentioned above, such as end-of-pipe configuration, adequate pipe sizing, regular inspections, and regular maintenance. Finally, both the Linear Radial Gross Solids Removal Device (GSRDs) and the Inclined Screen Gross Solids Removal Device developed by Caltrans are certified as full capture systems as long as they meet the additional requirements mentioned above, such as adequate pipe sizing, adequate drainage, regular inspections, and regular maintenance.

Some commenters have maintained that the trash TMDL fails to include, rather than the deemed compliant full capture alternative, a deemed compliant catch basin alternative, i.e., allowing the municipalities to comply with the "zero" TMDL by installing catch basins inserts or debris dams and/or excluders throughout the watershed, combined with weekly street sweeping. The commenters assert that the deemed compliant catch basin alternative would attain "most of the basic objectives of the project" and would avoid or substantially lessen many of the significant environmental effects of the project. These assertions were based on a 2006 report by Richard Watson and Associates entitled "Analysis of the Implementation Component of Draft Trash Total Maximum Daily Loads for the Los Angeles River Watershed".

As such, the commenters state, the Regional Board is obligated to consider catch basin improvements as feasible alternatives which comply with the TMDL. In fact, as discussed above, the Regional Board has recently done just that and certified catch basin improvements as a full capture alternative. The Cites of Glendale, La Canada Flintridge, Pasadena and Burbank proposed a simple and cost effective method which acts as a full capture method. Continuous broom brushes were installed along the upper edge of storm drain inlets to prevent trash from entering. Inside the catch basins, a full capture 5 mm screen completely covers the basin to avoid the overflow of trash. The cost estimated is approximately $800 per catch basin. See Section 6 for a more complete description of the method.

5.3 Costs and Impacts to Public Resources

In addition to comments on the TMDL itself that costs were underestimated, comments have also been received that economic considerations were not properly considered in the CEQA documents and in particular that economic impacts to public resources were not considered

Cost estimates differ.

Unrelated to CEQA, there still remains a discrepancy between Regional Board staff and some commenters regarding the estimated costs of compliance with the TMDL due principally to: a) land acquisition costs and b) compliance options which we discuss briefly below for completeness. The commenters have not submitted evidence supporting their claim that large expenditures for land acquisition is foreseeable as a result of the trash TMDL

a. Land Acquisition. Some commenters have stated that the costs estimated by the Regional Board staff are understated and do not include land acquisition costs. However, based on information provided by agencies implementing actions to comply with the trash TMDL, the cost analysis presented in the staff report is within the range of costs experienced by implementing agencies. Further, as described within this SED, the structural devices are implemented in developed areas of the watershed and land acquisition costs are non-existent or negligible as devices are implemented in the existing storm drain system.

b. Compliance Options. As discussed above, several commenters have assumed that there is only one way to comply with the TMDL and that is through vortex separation system full-capture devices such as Continuous Deflection Separator (CDS) units. Because of that erroneous assumption, estimates of costs of implementation have been greatly exaggerated.

Complete estimates of costs over the 10 year compliance schedule are included in the Staff Report.

More importantly, the cost issue has already been decided in *City of Arcadia, et al*. v. *State Water Resources Control Board, et al.* (2006) 135 Cal.App.4th 1392, 1400. The Appellate Court found that, while the TMDL was invalidated for other reasons, the TMDL Staff Report's analysis of compliance costs was adequate.

Consideration of economic impacts (including impacts to public fiscal resources) in CEQA documents (EIRs and/or SEDs).

Several commenters have stated that the CEQA documents are incomplete because they do not consider that because municipalities may have to spend additional funds on their storm water system in compliance with this TMDL, they will, therefore, have less to spend on other public needs (see Appendices B and C). However, the diversion of fiscal resources is an economic impact, which does not contribute to and is not caused by physical impacts on the environment that are the purview of this SED, and CEQA generally.

The City of San Gabriel and the City of Commerce quoted the Sierra Club in comments to draft documents released for this TMDL to wit “Although economic effects are not directly CEQA-subject, the cost associated with a project could impact a jurisdiction's ability to adequately provide services to its citizens. As the Sierra Club has noted: ’If a project fails to generate revenue adequate to fund its share of public services, will the level of such services available for existing residents decline? Will roads fall into disrepair? Will the availability of parks decline- as existing ones are used by more people? Will illegal dumping increase? These would all be physical effects on the environment stemming from project economics’.”

The full quote from the Sierra Club Motherload Chapter document *Working with California Environmental Quality Act (CEQA)* (in the section *Strategies: Risks and Benefits*) (http://www.motherlode.sierraclub.org/CEQAcommenting.htm) is:

> “Economic effects are not subject to CEQA, which concerns itself with physical effects on the environment. But with careful wording, you may nevertheless be able to include them. For example, if a project fails to generate revenue adequate to fund its share of public services, will the level of such services available for existing residents decline? Will roads fall into disrepair? Will the availability of parks decline as existing ones are used by more people? Will illegal dumping increase? These would all be physical effects on the environment stemming from project economics.” So, while the Sierra Club Motherload Chapter advises “with careful wording” drawing economic considerations into CEQA review, even it acknowledges that “Economic effects are not subject to CEQA…”

While several commenters (City of San Gabriel, City of Commerce Rutan and Tucker representing Cities known as the Coalition for Practical Regulation, City of Downey, County Sanitation Districts of Los Angeles County, among others) stated the SED should include such sorts of economic effects, in fact, CEQA does not require an EIR to discuss the economic feasibility of a project; an EIR, and this SED, are environmental reports. CEQA does require an EIR, and this SED, to identify project alternatives and to indicate the manner in which a project's significant effects may be mitigated or avoided, but does not mandate that the environmental documents themselves contain an analysis of the economic feasibility of the project alternatives or mitigation measures.

The Regional Board, when it considers adopting the proposed TMDL, will consider information provided on feasibility and determine whether the benefits of a project outweigh the significant effects that the project will have on the environment. Commenters should, and have, made comments on costs and economic impacts and the Regional Board should, and will, consider them in its decision making process. California Code of Regulations, title 14, section 21081.5, specifically provides that in making these determinations, the public agency shall base its findings “…on substantial evidence in the record,” not only on the documents produced specifically for the EIR or SED.

In fact, the Sierra Club and others have made several legal attempts to have CEQA documents found invalid by Courts by asserting that the CEQA documents did not include an analysis of economic feasibility. However, Courts have not found in their favor on this issue. Rather, the courts have confirmed that an economic analysis need not be included in CEQA documents (see San Franciscans Upholding the Downtown Plan, et al. v. City and County of San Francisco, et al., (2002) 102 Cal.App.4th 656; Sierra Club vs. County of Napa et al. (2004), 121 Cal.App.4th 1490.

Finally, while staff acknowledge that addressing the large volumes of trash that the cities wash downstream will be costly, the commenters have not supported their claim that resources will necessarily need to be diverted from one agency to another, and have not explained why other funding sources are not available, such as increased taxes or fees, grants (as in the case of the Hamilton Bowl project which was completely paid for by Board programs administered by the State Water Resources Control Board).

6. DESCRIPTION OF IMPLEMENTATION ALTERNATIVES

This Section of the SED begins with a description of the stormwater system in the Los Angeles River watershed and a description of the type of sites where structural devices or controls might be placed in compliance with the Trash TMDL. The structural alternatives such as catch basin inserts and vortex separators and the institutional control alternatives such as street sweeping and public education are then discussed.

The Regional Board is prohibited from specifying the manner of compliance with its regulations (Water Code § 13360), and accordingly, the actual compliance strategies will be selected by the local agencies and other permittees. Although the Regional Board does not mandate the manner of compliance, foreseeable methods of compliance are well known. The most likely measures of compliance include structural methods such as catch basin inserts, vortex separation devices, end of pipe trash nets, as well as non-structural alternatives such as increased street sweeping, and enforcement of existing litter laws.

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.).

6.1 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.

6.1.1 Design of devices for trash removal

The structural devices likely to be used for compliance with the Trash TMDL 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 trash 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. Start-of-pipe devices such as catch basin opening screens and excluders or end-of-pipe devices such as trash racks, fabric mesh socks and wire screens, may have less impact on hydraulic drain capacity under certain hydraulic conditions than devices installed mid-pipe. 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.

In addition, the definition of "full capture" in the Trash TMDL includes reference to a maximum trash particle size of 5mm. The 5mm size limit is approximately the diameter of a pencil or cigarette butt. A smaller particle size implies a smaller filtering mesh or screen size, and a smaller mesh or screen size implies more resistance to the flow passing through it. When designing and siting devices, assuming that a certain percentage of a screen would be blocked by trash during a storm event, the total area of the screen openings would have to be larger than the area of the drain's cross section by that percentage.

In addition to the requirement of removing litter 5mm and above from flows up to the runoff from a 1-year storm, the design of a trash removal device should takes into account reliability and performance sensitivity under varying loads. A trash device should meet the following minimum criteria:

- It must not adversely affect the level of flood protection provided by the drainage system;
- It should be vector-resistant, or not pond water for more than 48 hours after the end of a storm;
- It should not worsen water quality by resuspending trash, sediments, or bacteria, or by leaching heavy metals or semi-volatile organic compounds;
- If it is to be an underground device with access shafts, it must meet or exceed American Public Works Association standards, have ladder rungs, and have the ability to withstand lateral soil pressures;
- It should have no plastic or fiberglass interior parts that would break or shatter in the path of direct flow
- Its pipes, conduits and vaults should not be more than 32 feet below ground, and should be easily accessible by a vacuum truck hose for clean-out, be reasonably accessible by a qualified maintenance worker, have provisions for confined space entry and safety guard rails around the rim; and
- It should provide means to block off the inflow and tail water backflow to isolate the device for safe maintenance and repair of the unit.

6.2 STRUCTURAL DEVICES

6.2.1 Catch basins and catch basin inserts

A catch basin or storm drain inlet is an inlet to the storm drain system that typically includes a grate or curb opening where stormwater enters the catch basin, and a sump to capture sediment, debris and associated pollutants. They are also used in combined sewer watersheds to capture floatables and settle some solids. Catch basins act as pretreatment for other treatment practices by capturing large particles. The performance of catch basins at removing sediment and other pollutants depends on the design of the catch basin (e.g., the size of the sump), and routine maintenance to retain the storage available in the sump to capture sediment.

Catch basins are used in drainage systems throughout the United States. However, many catch basins are not designed for sediment and pollutant capture. Ideal application of catch basins is as pretreatment to another stormwater management practice. Retrofitting existing catch basins may help to improve their performance substantially. A simple retrofit option of catch basins is to ensure that all catch basins have a hooded outlet to prevent floatable materials, such as trash and debris, from entering the storm drain system.

The performance of catch basins is related to the volume in the sump (i.e., the storage in the catch basin below the outlet). Optimal catch basin sizing criteria, which relates all catch basin dimensions to the diameter of the outlet pipe (D) are shown Figure 6.1.

Typical dimensions are:

The diameter of the catch basin should be equal to 4D.

The sump depth should be at least 4D. This depth should be increased if cleaning is infrequent or if the area draining to the catch basin has high sediment loads.

The top of the outlet pipe should be 1.5 D from the inlet to the catch basin.

Catch basins can also be sized to accommodate the volume of sediment that enters the system. The study proposed a sizing criteria based on the concentration of sediment in stormwater runoff. The catch basin sump is sized, with a factor of safety, to accommodate the annual sediment load to the catch basin with a factor of safety. This method is preferable where high sediment loads are anticipated, and the optimal design described above is suspected to provide little treatment.

The basic design should also incorporate a hooded outlet to prevent floatable materials and trash from entering the storm drain system (see Figure 6.1). Adding a screen to the top of the catch basin would help capture trash entering the catch basin. To limit the discharge rate downstream of the outlet pipe, a flow restrictor is used and discharge rates can be accurately controlled by slot or orifice dimensions in the riser pipe shielded (see Figure 6.2).

Typical maintenance of catch basins includes trash removal if a screen or other debris capturing device is used, and removal of sediment using a vactor truck. Operators need to be properly trained in catch basin maintenance. When sediment fills greater than 60% of their volume, catch basins reach steady state. Storm flows may then bypass treatment as well as resuspend sediments trapped in the catch basin. Regular clean-outs can retain the volume in the catch basin sump available for treatment of stormwater flows.

At a minimum, catch basins should be cleaned once or twice per year. Two studies suggest that increasing the frequency of maintenance can improve the performance of catch basins, particularly in industrial or commercial areas. One study of sixty catch basins in Alameda County, California, found that increasing the maintenance frequency from once per year to twice per year could increase the total sediment removed by catch basins on an annual basis. These results suggest that, at least for industrial uses, more frequent cleaning of catch basins may improve removal efficiency. However, the cost of increased operation and maintenance costs needs to be weighed against the improved pollutant removal.

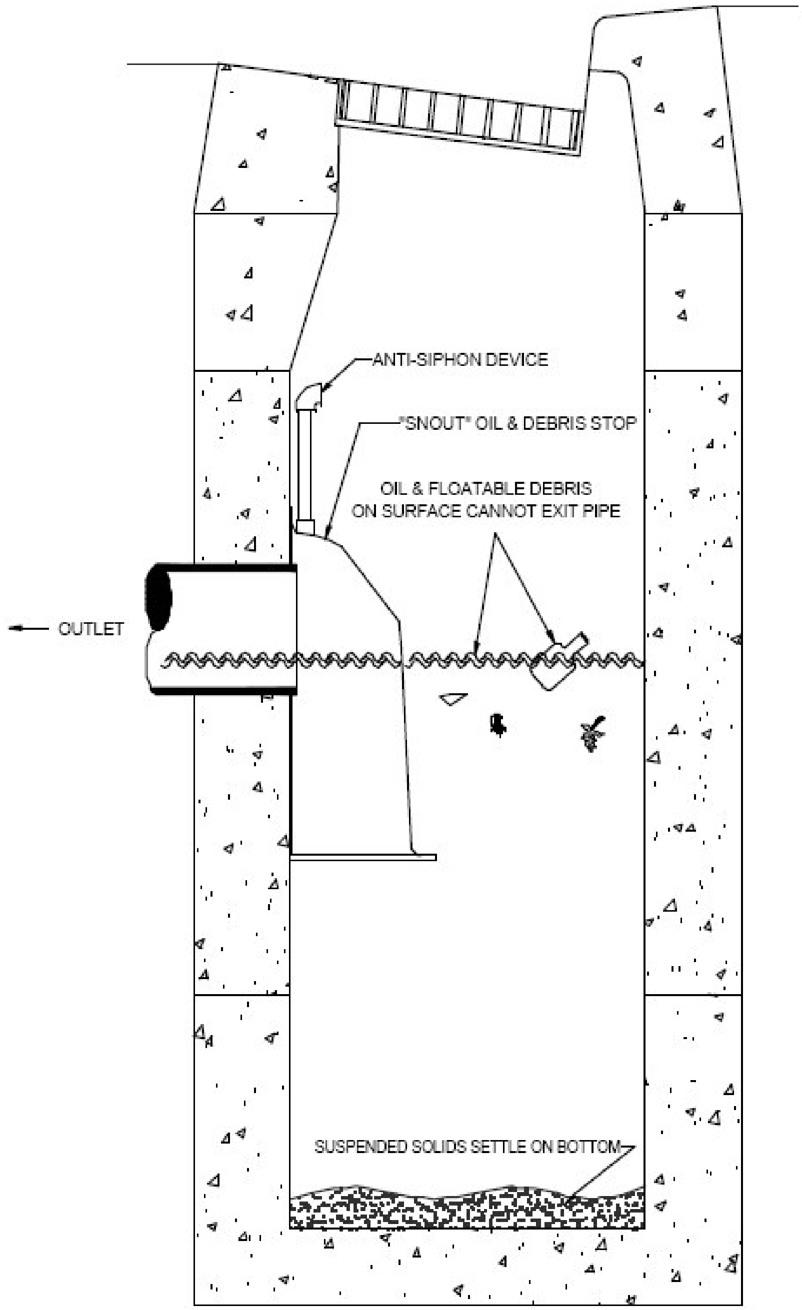
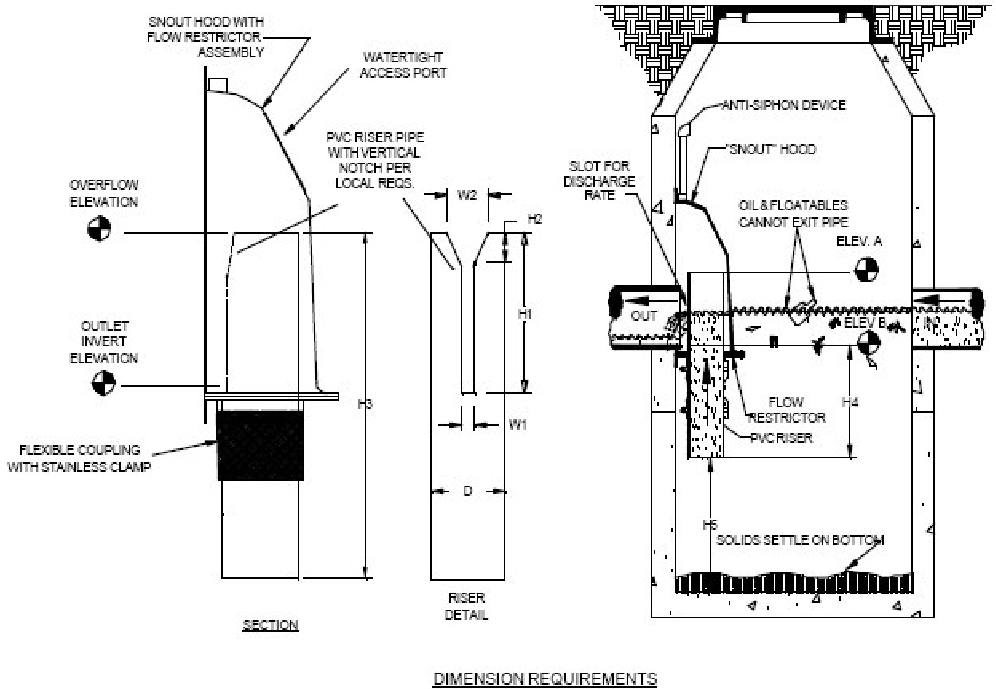


Figure 6-1 A typical cross section of a catch basin.
To minimize re-suspension of fine captured solids, a deep sump with a minimum depth of 4ft, or a depth equal to 4 times the outlet pipe inside diameter is recommended.



D=Riser ID, W1=Slot Width, W2=Notch Width
H1=Slot Length, H2=Notch Length, H3=Riser Length
H4=Submerge Depth, H5=Depth to Bottom

Figure 6-2 In-line catch basin with hood and flow restrictor.

Within a catch basin a "catch basin insert," may also be used to filter runoff entering the catch basin. There are several types of catch basin inserts. One insert configuration consists of a series of trays, with the top tray serving as an initial sediment trap, and the underlying trays comprised of media filters. Another option uses filter fabric to remove pollutants from stormwater runoff. These devices have a very small volume compared to the volume of the catch basin sump, and would typically require very frequent sediment removal. Bench test studies found that a variety of products showed little removal of total suspended solids, partially due to scouring from relatively small (6-month) storm events.

Catch basins can also be perforated metal screens placed horizontally or vertically within a catch basin. There are a multitude of inserts of various shapes and configurations. One device suitable for compliance with the Trash TMDL is a grated plastic box or metal screen that fits directly into the curbside catch basin. As the storm water passes through the box, trash, rubbish, and sediment remain in the box while storm water exits (see Figure 6.3).

Metal screening inserts can be deployed in a vertical or horizontal configuration within the catch basin for the retention of trash. These inserts maximize much of the existing catch basin volume and concurrently pass through flow. Companies such as American

Stormwater, Practical Technologies, and Advanced Solutions are marketing these types of devices.

Figure 6-3 Catch basin insert Source: http://www.lastormwater.org/WPD/program/TMDLs/tmdls.htm

Some catch basin screens are designed to open to curb flow in order to reduce the potential for flooding during wet weather, For example American Storm Water has a catch basin screen with an automatic retractable screen (ARS) gate design which can be adjusted to "un-lock" and open up to storm water curb flow from 20% to 60% of curb height. This device which is termed the “Surf Gate” is also designed with a special "locking" application, which keeps children safe and large debris from getting into the catch basin (see Figure 6-4).

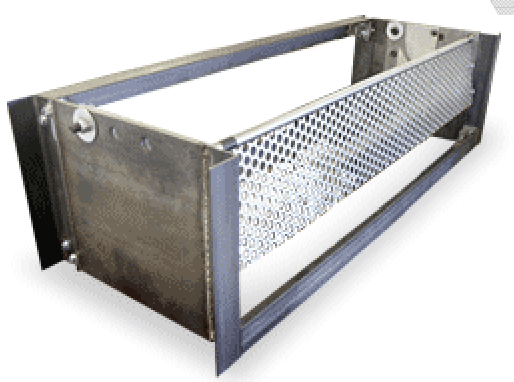


Figure 6-4: Catch basin insert with automatic retractable screen
Source: http://www.americanstormwater.com/Storm_Water_Products/surf_gate.html

Grate inserts are typically found in parking lots, alleys, and sloping streets. Inserts installed in these basins mainly capture trash smaller than an inch due to the standardized grating spacing. Inserts designed for curb opening basins are best suited for capturing larger debris like water bottles and plastics bags, as the opening under the curb may range from four to eight inches.

The City of Glendale creatively modified the catch basin inserts by installing brush-like material over catch basin openings. This material was actually designed as a type of mud flap for use on large trucks and motor homes. is the bristles are stiff enough to keep large items from entering the catch basin while allowing the flow of water into the basin. Large debris remain in the street where they would later be removed by street sweeping. To capture smaller debris that passes through the brush, Glendale installed metal mesh in the catch basin above the level of the outlet pipe. The mesh slopes down from the upstream end to the downstream end so that the debris can be flushed with a hose to the downstream end where it can be removed by vacuum trucks through the access hole in the top of the catch basin. The size of the opening is slightly less than 5 mm, so any debris passing through the mesh is allowed by the trash TMDL. Figures 6-5 and 6-6 are pictures of brush installed over the catch basin opening and the metal mesh in the catch basin.

Figures 6-5 Brush installed over the catch basin opening.

Figure 6-6 Metal mesh installed within the catch basin to collect trash not retained by the brush at the inlet.

6.2.2 Vortex Separation Systems

Vortex Separation Systems (VSS) units capture almost all trash deposited into a storm drain system. A VSS unit diverts the incoming flow of storm water and pollutants into a pollutant separation and containment chamber. Solids within the separation chamber are kept in continuous motion, and are prevented from blocking the screen so that water can pass through the screen and flow downstream. Solid pollutants including trash, debris and coarse sediments are retained in a centrally located solids catchment chamber with the heavier solids ultimately settling into the base of the unit or sump. This is a permanent device that can be retrofitted for oil separation as well. Outfitting a large drainage with a number of large VSS units may be less costly than using a larger number of small VSS units.

An example of VSS technology is the Continuous Deflective Separation (CDS) unit, developed by CDS Technologies, Inc.(see Figure 6.7). When applied to storm water, the CDS unit is designed to capture and retain sediments, floatable and settleable trash and debris over a wide range of flow conditions (up to 300 cubic feet per second (cfs)). The fine screens used in storm water applications vary in size from 1.2 – 4.7 mm (0.048-0.185 inch). The CDS units are placed underground and are appropriate for ultra urban retrofit situations where space is limited. In general, a CDS unit occupies about 4-1/2 square feet of surface area for each cfs that it treats, with the bulk of the installation being well below grade. The solids can be removed using a vactor truck, a removable basket or a clam shell depending on the user's preference and size of the unit. Based on climate conditions in Southern California, CDS units installed for the trash TMDL can be cleaned once per storm season. For new installations, it is recommended to check the condition of the unit after every runoff event for the first 30 days. Based on the behavior of the unit relative to storm events, inspections can be scheduled on projections using storm events vs. pollutant buildup. For ongoing operation, the unit should be inspected at least once every 30 days during the wet weather season. The floatables should be removed and the sump cleaned when the sump is above 85% full. At least once a year, the unit should be pumped down and the screen carefully inspected for damage and to ensure that the screen is properly fastened. Detailed information on CDS is provided at http://www.epa.gov/region01/assistance/ceitts/stormwater/techs/contdeflective.html.

Figure 6-7 CDS unit. (Source: http://lakes.chebucto.org/SWT/cds.html)

6.2.3 Trash Nets

Trash nets are devices using the natural energy of the flow to trap trash, floatables and solids in disposable mesh nets. An example is the trash net developed by Fresh Creek Technologies, Inc. Three modular models are available from Fresh Creek Technologies, Inc.:

- The *In-Line* Netting TrashTrap® model is a modular chamber containing the capture apparatus for holding the disposable nets. The system is installed in-line with the outfall pipe. A prefabricated chamber minimizes site work and cost. In-line units are underground and out of sight, particularly well suited for densely populated locations.
- The *End-of-Pipe* Netting TrashTrap® model is installed at the end of the pipe. These units are often installed as a retrofit to an existing outfall structure. When this opportunity exists, the End-of-Pipe system is highly cost effective.
- The *Floating* Netting TrashTrap® model is a modular pontoon structure that floats at the end of the outfall. Floating units are an economical solution where site conditions (minimum water depth of two feet and a relatively sheltered site) permit its use. They are often installed with only minor modifications to the existing site.

Model selection and sizing is based on site-specific criteria including peak volume, peak velocity, and trash/floatables volume. Modularity and capacity are achieved by varying the number of nets in the system. Current installations range from single net units to systems with 10 nets handling flows above 3,000 cfs. The standard mesh net will handle flows up to 30 cfs or 22 million gallons per day (mgd) and velocities up to 5 feet per second at the mouth of the net. A truck with a hoist for changing the nets, and a container for holding the full nets is used for servicing. A crew of two accomplishes the net change out in a matter of a few minutes. Road access to the site is required for the service vehicle.

The *End-of-Pipe* nets are suitable devices for the Trash TMDL because of the low cost, the ease of maintenance, and also because the devices can be relocated after a set period at one location (provided the pipe diameters are the same). With limited funding, installation could be spread over several land uses and lead to valuable monitoring results. For smaller systems the total installation time can be as short as one day. A diagram of end-of-pipe trash net is shown in Figure 6.8.

Because the devices require attachment to the end of a pipe, this can severely reduce the number of locations within a drainage system that can be monitored. In addition, these nets cannot be installed on very large channels (7 feet in diameter is the maximum), while the largest outlets into the Los Angeles River are 10 feet in diameter.

Detailed information on trash nets is provided at http://www.freshcreek.com/products/prod_specs.php?prodID=ntt.

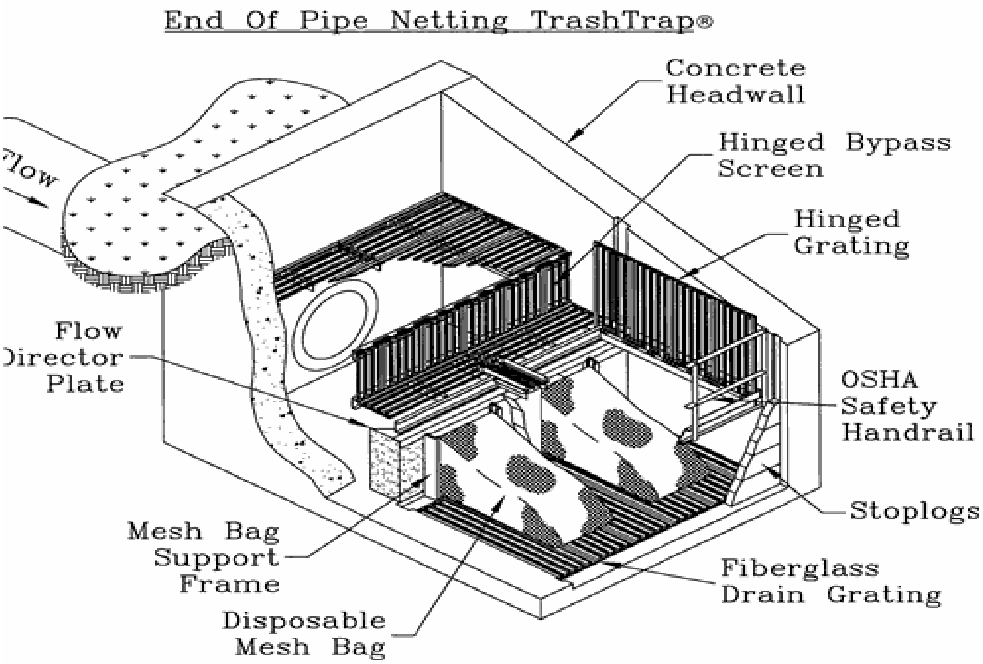


Figure 6-8 End-of-Pipe Trash Net
From: http://www.freshcreek.com/products.php

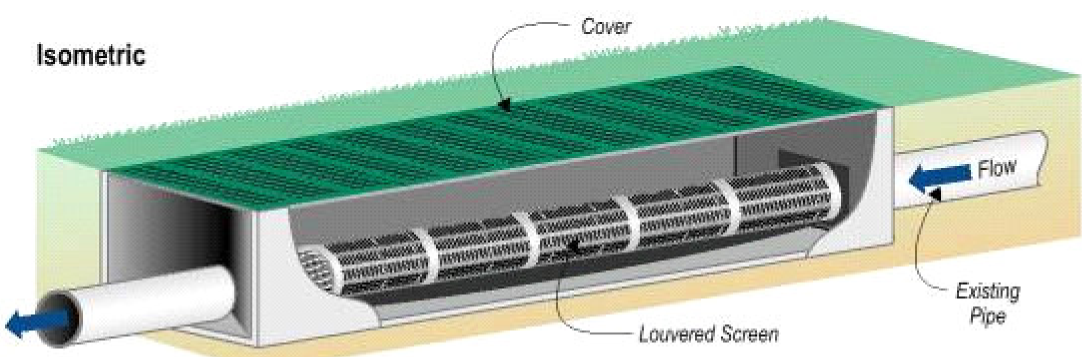
6.2.4 Gross Solids Removal Devices

Several Gross Solids Removal Devices (GSRDs) were developed by the California Department of Transportation (Caltrans) to be retrofitted into existing highway drainage systems or implemented in future highway drainage systems. GSRDs are structures that remove litter and solids 5 mm (0.25 inch nominal) and larger from the stormwater runoff using various screening technologies. Overflow devices are incorporated, and the usual design of the overflow release device is based upon the design storm for the roadway. Though designed to capture litter, the devices can also capture some of the vegetation debris. The devices shown below are generally limited to accept flows from pipes 30 inches in diameter and smaller.

The Caltrans' GSRD Pilot Program consists of multiple phases with each phase representing one pilot study. A pilot study generally consists of one or more devices that are developed from concept, advanced through design and installation, and placed in service for two years of testing to evaluate overall performance. Three types of GSRDs have been shown the most promising: linear radial and two versions using an inclined screen.

Linear Radial Device A Linear Radial Device is shown in Figure 6.9. This device is relatively long and narrow, with flow entering one end and exiting the other end. It is suited for narrow and flat rights-of-way with limited space. It utilizes modular well screen casings with 5 mm (0.25-inch nominal) louvers and is contained in a concrete vault, although it also could be attached to a headwall at a pipe outfall. While runoff flows enter into the screens, they pass radially through the louvers and trap litter in the casing. A smooth bottom to convey litter to the end of the screen sections is required, so a segment of the circumference of each screen is unlouvered. The louvered sections have access doors for cleaning with vacuum truck or other equipment. Under most placement conditions the goal would be to capture within the casing one year's volume of litter. This device has been configured with an overflow/bypass for larger storm events and if the unit becomes plugged.

Figure 6-9. Linear Radial Device



Inclined Screen Devices: Two Inclined Screen Devices have been developed; one is shown in Figure 6-10 and the other as Figure 6-11. Each device requires about 1-meter (3 ft) of hydraulic head and is better suited for fill sections. In the Type 1 device, the storm water runoff flows over the weir and falls through the inclined bar rack. The screen has 5-mm maximum spacing between the bars. Flow passes through the screen and exits via the discharge pipe. The trough distributes influent over the inclined screen. Storm water pushes captured litter toward the litter storage area. The gross solids storage area is sloped to drain to prevent standing water. This device has been configured with an overflow/bypass for larger storm events and if the unit becomes plugged. It has a goal of litter capture and storage for one year. The Type 2 Inclined Screen only comes in a sloped sidewall version.

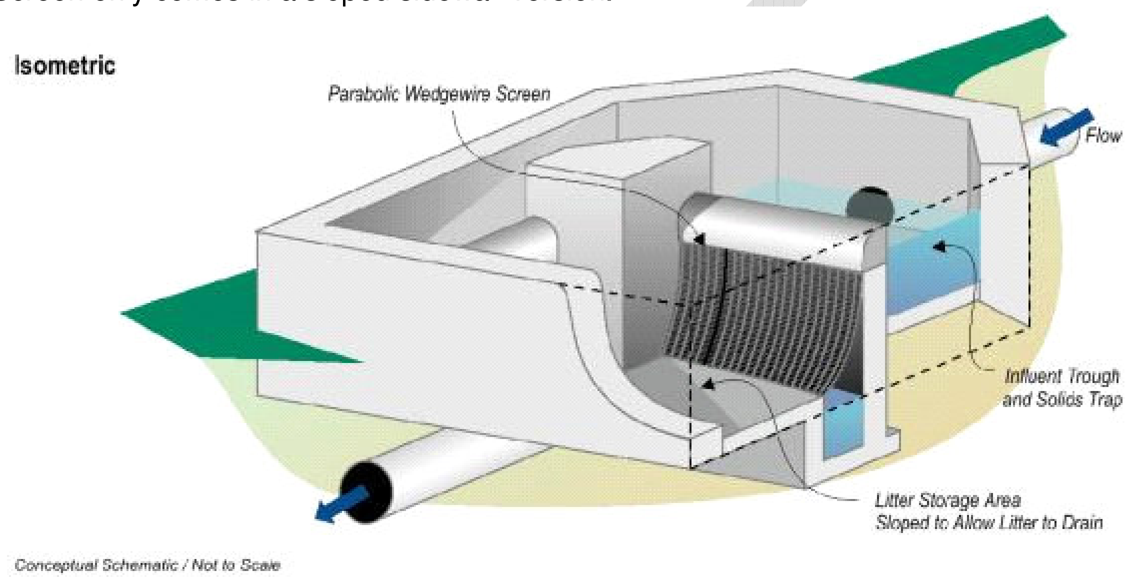
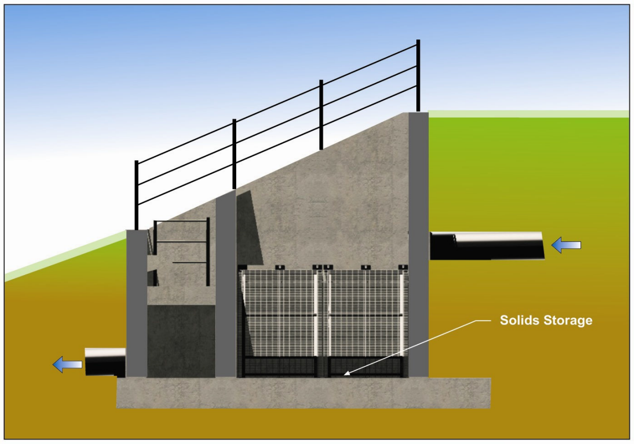
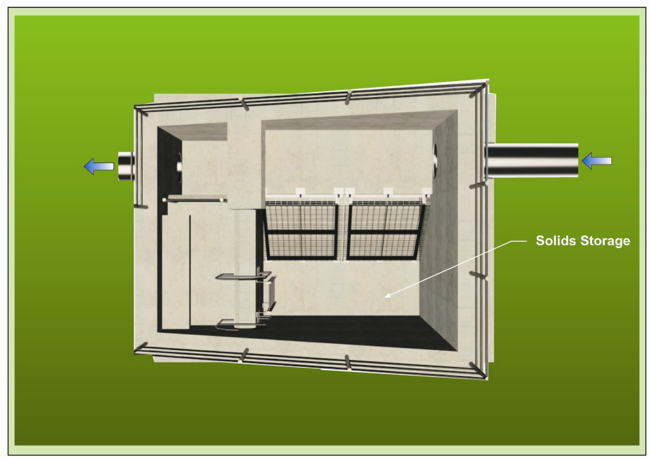
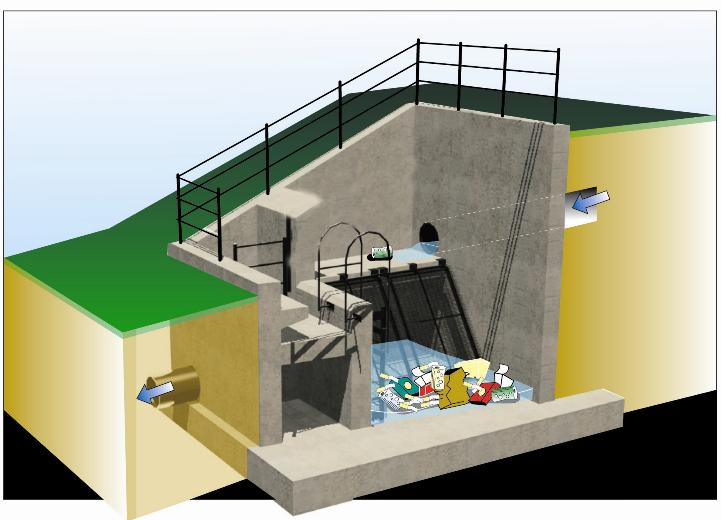


Figure 6-10. Inclined Screen Device – Type 1

Figure 6-11. Inclined Screen Device – Type 2







6.3 INSTITUTIONAL CONTROLS

Institutional controls are non-structural methods to control trash loading to the river such as enforcement of existing litter laws, increased street sweeping, and cleaning of storm water conveyance structures, such as catch basins and storm drain inlets. Institutional controls provide several advantages over structural full capture systems. Foremost, institutional controls offer other societal benefits associated with reducing litter in our city streets, parks and other public areas. Institutional controls can typically be implemented in a relatively short period of time. The capital investment required to implement institutional controls is generally less than for full capture systems.

6.3.1 Enforcement of litter laws

Enforcing litter laws in sensitive areas or in areas that generate substantial amounts of litter would eliminate an ultimate source of trash loading to the river. Ordinances that prohibit litter are already in place in most cities. For example, the Los Angeles City Code of Regulations recognizes that trash becomes a pollutant in the storm drain system when exposed to storm water or any runoff and prohibits the disposal of trash on public land:

> No person shall throw, deposit, leave, cause or permit to be thrown, deposited, placed, or left, any refuse, rubbish, garbage, or other discarded or abandoned objects, articles, and accumulations, in or upon any street, gutter, alley, sidewalk, storm drain, inlet, catch basin, conduit or other drainage structures, business place, or upon any public or private lot of land in the City so that such materials, when exposed to storm water or any runoff, become a pollutant in the storm drain system. (City Code of Regulations, §64.70.02.C.1(a).)

Ensuring compliance with existing statewide and local litter laws and ordinances would eliminate the substantial adverse environmental and economic impacts from the litter, and the need for additional structural or institutional controls that generate their own nominal adverse environmental impacts.

6.3.2 Street sweeping

Street sweeping minimizes trash loading to the river by removing trash from streets and curbs. Maintaining a regular street sweeping schedule reduces the buildup of trash on streets and prevents trash from entering catch basins and the storm drain system. Street sweeping can also improve the appearance of roadways and urban areas. There are three types of street sweepers: mechanical, vacuum filter, and regenerative air sweepers (US EPA, 2006).

A street sweeper cleans up pollutants and sediments on the street to reduce the amount of pollutants entering receiving waters

Figure 6-12 (Source: US EPA 2006a)

Mechanical sweepers use a broom to remove particles from the street curb and a water spray to control dust. The removed particles are carried by a cylindrical broom to a conveyor belt and into a storage hopper (FHWA, 2006).

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. Vacuum-assisted dry sweepers use a specialized brush that allows the vacuum system to recover almost all particulate matter. A continuous filtration system prevents very fine particulate matter from leaving the hopper and trailing on the street behind the sweeper (FHWA, 2006).

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, 2006).

No definitive independent studies have yet been staged to determine the best sweeping system (US EPA, 2006). However, it is recommended that local agencies use a combination of types of street sweeper 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 trash accumulation will further reduce trash 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. (California of Stormwater Quality Association - 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, 2006).

6.3.3 Storm Drain Cleaning

Routine cleaning of the storm drain system reduces the amount of trash entering the river, prevents clogging, and ensures the flood control capacity of the system. Cleanings may occur manually or with 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 trash accumulation, accurate recordkeeping, cleaning immediately prior to the rainy season to remove accumulated trash, and proper storage and disposal of collected material. (CASQA, 2003a)

Figure 6-12: Catch Basin cleaning (Source: CASQA, 2003a)

As required by MS4 permits, the County of Los Angeles Department of Public Works (DPW) was to prioritize catch basin cleanup by volumes of trash accumulated and to place more trash cans at public transit stops.

6.3.4 Public Education

Public education can be an effective implementation alternative to reduce the amount of trash entering the river. The public is often unaware that trash littered on the street ends up in receiving waters, much less the cost of abating it.

Community outreach is one way to educate the public about the effects of littering 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).

Under the Los Angeles County Municipal Storm Water Permit, permittees are required to develop and implement an educational storm water and urban runoff outreach program to reach as many County of Los Angeles residents as possible (MS4 permit 01-182). The residential component of this program includes:

- Stenciling of all storm drain inlets with a "No Dumping" message
- Maintenance of a countywide hotline for reporting clogged catch basin inlets and illicit discharges/dumping, faded or lack of catch basin stencils, and general storm water management information
- Outreach and education activities including advertising, media relations, public service announcements, "how to" instructional material, corporate, community association, environmental organization and entertainment industry tie-ins, and events targeted to specific activities and population subgroups
- Culturally diverse educational strategies
- Outreach efforts to residents and businesses related to the proper disposal of cigarette butts
- Participation in local and county-wide educational activities
- Prove assurance that a minimum of 35 million impressions per year are made on the general public about storm water quality via print, local TV access, local radio, or other appropriate media
- Distribution to schools within each School District in the County with materials, including, but not limited to, videos, live presentations, and other information necessary to educate a minimum of 50 percent of all school children (K-12) every 2 years on storm water pollution
- Develop a strategy to measure the effectiveness of in-school educational programs. Develop a behavioral change assessment strategy

The business component of the public education program includes:

- Corporate Outreach to educate and inform corporate managers about storm water regulations, including conferring with corporate management to explain storm water regulations, distribution and discussion of educational material.
- Business Assistance Program to provide technical resource assistance to small businesses to advise them on BMPs implementation to reduce the discharge of pollutants in storm water runoff.

Public Education materials are available through the Erase the Waste campaign, sponsored by the State Water Resources Control Board and Regional Boards. Erase the Waste is a public education program, working to reduce harmful storm water pollution and improve the environment of the region's coastal and inland communities. The campaign started in Los Angeles County, and materials produced during its three-year run have now been packaged here for state and nationwide use. It is built around the theme, Erase the Waste – a positive, empowering theme that encourages all residents and stakeholders to take ownership of their communities, help reduce and prevent storm water pollution from the local landscape and "become part of the pollution solution."

Recently made available is the ***California Storm Water Toolbox*** (State Water Resources Control Board, 2006 (http://www.waterboards.ca.gov/erasethewaste/index.html))***,*** which includes the following tools for residents, community and civic groups, educators, municipalities and public agencies:

- Advertisements, posters, collateral materials and a comprehensive Neighborhood Action Kit in English, Spanish, Chinese, Korean and Vietnamese – a comprehensive “how-to” guide to community-focused pollution prevention
- A landmark Water Quality Service Learning Model for grades 4-6 that meets the state’s curriculum standards
- The Water Quality Detectives After School Program, an adapted version of the curriculum for middle school and after school setting
- The California Storm Water Resource Directory, an online inventory of storm water materials developed in partnership with the California Storm Water Quality Association

7. SETTING, IMPACTS, AND MITIGATION

7.1 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 Los Angeles River Watershed trash TMDL are described in detail in Section 6 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 Los Angeles River Watershed is discussed prior to the analysis of resource area, which includes the potential negative environmental impacts of the Implementation Alternatives (see Section 6 for a detailed description of the TMDL Implementation Alternatives). In addition, the installation, operation and maintenance activities associated with the trash TMDL implementation alternatives are discussed in Section 7.2. The following resource areas are included in this section, each of which includes a description of potential impacts, and mitigations.

Section 7.3 Aesthetics
Section 7.4 Agricultural Resources
Section 7.5 Air Quality
Section 7.6 Biological Resources
Section 7.7 Coastal Resources
Section 7.8 Cultural Resources
Section 7.9 Geology and Soils
Section 7.10 Hazards and Hazardous Materials and Human Health
Section 7.11 Hydrology and Water Quality
Section 7.12 Land Use
Section 7.13 Noise
Section 7.14 Population and Housing
Section 7.15 Public Services
Section 7.16 Recreation
Section 7.17 Transportation
Section 7.18 Utilities

This information is used to support the environmental checklist provided in Section 10 of this document.

7.1.1 Approach to Environmental Setting and Impact Analysis

Any potential environmental impacts associated with the Los Angeles River Watershed Trash 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 Los Angeles River Watershed. The Los Angeles River Watershed is the geographic area for assessing impacts of the different implementation alternatives, because the discharge of trash generated in the watershed, via stormdrains, to the waterbodies would be controlled and/or eliminated by any one of or a combination of the implementation alternatives. Also, any potential impacts of implementing the proposed alternatives would be focused in this area.

The implementation alternatives evaluated in this draft SED are evaluated at a program level for impacts for each resource area. An assumption is made that a more detailed project-level analysis will be conducted by all responsible agencies and jurisdictions once their mode of achieving compliance with the trash 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).

7.1.2 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 agencies that will implement the water board’s TMDL

7.1.3 Environmental Setting

The Los Angeles River Watershed includes all or portions of the cities of Los Angeles, Alhambra, Arcadia, Bell, Bell Gardens, Bradbury, Burbank, Calabasas, Carson, Commerce, Compton, Cudahy, Downey, Duarte, El Monte, Glendale, Hidden Hills, Hunington Park, Irwindale, La Canada Flintridge, Long Beach, Lynwood, Maywood Monrovia, Montebello, Monterey Park, Paramount, Pasadena, Pico Rivera, Rosemead, San Fernando, San Gabriel, San Marino, Santa Clarita, Sierra Madre, Signal Hill, Simi Valley, South El Monte, South Gate, South Pasadena, Temple City and Vernon, and unincorporated areas of Los Angeles County.

The Los Angeles River flows 51 miles from the western end of the San Fernando Valley to the Queensway Bay and Pacific Ocean at Long Beach (see Figure 7.1-1). The headwaters are at the confluence of Arroyo Calabasas and Bell Creek. Arroyo Calabasas drains

Woodland Hills, Calabasas, and Hidden Hills in the Santa Monica Mountains. Bell Creek drains the Simi Hills and receives flows from Chatsworth Creek. From the confluence of Arroyo Calabasas and Bell Creek, the Los Angeles River flows east through the southern portion of the San Fernando Valley, bends around the Hollywood Hills before it turns south onto the broad coastal plain of the Los Angeles Basin, eventually discharging into Queensway Bay and thence into San Pedro Bay West of Long Beach Harbor. Together with its several major tributaries, notably the Tujunga Wash, Burbank Western Channel, Arroyo Seco, Rio Hondo, and Compton Creek, the Los Angeles River drains an area of about 834[3] square miles. Of this area, the incorporated cities and unincorporated portion of Los Angeles County comprise 599 square miles. The remaining acreage consists of the Los Angeles National Forest and other uses.

In the San Fernando Valley, the river flows east for approximately 16 miles along the base of the Santa Monica Mountains. Most of the Los Angeles River channel was lined with concrete between 1935 and 1959 for flood control purposes (Gumprecht, 1999). This reach is lined in concrete except for a section of the river with a soft bottom at the Sepulveda Flood Control Basin. The Sepulveda Basin is a 2,150-acre open space, located upstream of the Sepulveda Dam. It is designed to collect flood waters during major storms. Because the area is periodically inundated, it remains in natural or semi-natural conditions and supports a variety of low-intensity uses. The US Army Corps of Engineers owns the entire basin and leases most of the area to the City of Los Angeles Department of Recreation and Parks, which has developed a multi-use recreational area that includes a golf course, playing fields, hiking trails, and bicycle paths.

The river is again lined in concrete for most of its course except for a seven-mile soft-bottomed segment between the confluence of the Burbank/Western Channel near Riverside Drive and north of the Arroyo Seco confluence. Three miles of this segment border Griffith Park (encompassing 4,217 acres). Four miles downstream, the river flows parallel to Elysian Park (585 acres in size). The original Pueblo de Los Angeles was founded just east of the river "to take advantage of the river's dependable supply of water (LA River Master Plan, 1996)." Early this century, the progressive pumping of ground water, together with major diversions of water for irrigation and other uses throughout the watershed, contributed to a decreased flow in the River. From Willow Street all the way through the estuary, the river is soft bottomed with areas of riparian vegetation. This unlined section is about three miles long. A number of lakes including Peck Road Park Lake, Echo Park Lake, and Lincoln Park Lake are also part of the watershed

Several water body segments within the Los Angeles River Watershed are impaired by large accumulations of suspended and settled debris throughout the river system. The problem is even more acute in Long Beach where debris flushed down from the upper reaches of the river collects. Common items of trash that plague these waterways include Styrofoam cups, Styrofoam food containers, glass and plastic bottles, toys, balls, motor oil containers, antifreeze containers, construction materials, plastic bags, and cans. Heavier debris can be transported during storms as well.

[3] As determined by the Regional Board from GIS mapping.

Figure 7.1-1. Waterbodies in the Los Angeles River Watershed.

7.1.3.1 Beneficial Uses of the Watershed

The upper reaches of the Los Angeles River include Sepulveda Basin, a soft-bottomed area that is designed as a flood control basin. Designated beneficial uses for the upper reaches are Municipal and Domestic Supply (MUN) (although most reaches only have conditional MUN designations), Ground Water Recharge (GWR), Water Contact Recreation (REC1), Non-Contact Water Recreation (REC2), Warm Freshwater Habitat (WARM), Wildlife Habitat (WILD), and Wetland Habitat (WET). The arroyo chub is also found in the Sepulveda Basin area, and cannot survive on the flat surfaces on the concrete-lined portions of the Los Angeles River. The thick growth of riparian plants in this area provides habitat for a variety of wildlife. Native oaks grow along stretches of Valleyheart Drive in Studio City and Sherman Oaks. The river levees along this reach are accessible and neighborhood residents use them for walking and jogging.

Three native species of fish (the south coast minnow-sucker community) are found in Big Tujunga Creek from Big Tujunga Dam downstream to upper Hansen Dam. These are the Santa Ana sucker (Catastomus santaanae), which is listed as a federally endangered species, the Santa Ana speckled dace (Rhinichthys osculus) and the arroyo chub (Gila orcutti), both of which are State Species of Special Concern. They thrive in the moderate to fast cool or cold flows in gravelly and rocky riffles (suckers and dace), alternating with slower pools (chubs) (Swift, 2000).

Glendale Narrows, from Riverside Drive to Arroyo Seco (Figueroa Street), with the longest soft-bottomed segment (seven miles), supports many beneficial uses and is designated accordingly in the Basin Plan. This portion of the Los Angeles River is designated as open space in the various community general plans. Dense riparian vegetation provides habitat for wildlife including birds, ducks, frogs and turtles. Several small pocket parks are found along this section of the River, many of which were designed by North East Trees (NET), sometimes in partnership with the Mountains Recreation and Conservation Authority (MRCA), such as a small park South and North of Los Feliz Boulevard sometimes referred to as the "Los Angeles RiverWalk" (Dhandha, 2000) and Sunnynook park on the Atwater side, and Rattlesnake Park and Zanja Madre Park on the Silver Lake side. Another example of a pocket park, designed by MRCA, is Knox Park (Ibid.), at the end of Knox Avenue. The riparian vegetation closely mimics the historical "willow sloughs" that once dotted the basin (Cooper, 2000). The relatively lush environment in this reach attracts people who enjoy many forms of recreation including walking, jogging, horseback riding, bicycling, bird watching, photography and crayfishing. There are several access points in this reach, including the pedestrian bridge over the Golden State Freeway from Griffith Park near Los Feliz Boulevard (Sunnynook Bridge). This whole section is lined with a maintained bike path, and many bicyclists use the path, which is cooled in places by the riparian trees. In addition, cut fences provide easy access for the many people who use this section of the river, including the homeless who have set up camp under some of the bridges within this reach or on the vacant land between Highway 5 and the fence to the river.

Figure 7.1-2. Fletcher Drive: Great Egret, October 26, 1999.

From Figueroa Street to Washington Boulevard, the river supports several beneficial uses, including the Downtown Channel, which is used by many for recreation and bathing, in particular by homeless people who seek shelter there.

The mid-cities reach (11½ miles from Washington Boulevard to Atlantic Avenue), has several beneficial uses. The western levee is available for trail use from Atlantic Boulevard in Vernon to Firestone Boulevard in South Gate. There is a county bike path on the eastern levee (the Lario Trail) and a county equestrian and hiking trail adjacent to the levee. Continuous access to the Lario Trail is provided below each street bridge crossing. Several parks have been developed adjacent to the river on the east side, some of which provide access to the river trail (Cudahy Park). In Vernon, the channel invert is used for lunchtime soccer games, and people walk or jog on the river maintenance roads mostly during the week at lunchtime. The utility easement in Bell is used partly for small, informal vegetable gardening (LA River Master Plan, 1996). South of the confluence of the Los Angeles River and the Rio Hondo Channel in South Gate, increasing numbers of birds can be seen using the channel and adjacent lands.[4]

The nine-mile reach from Atlantic Avenue to the ocean supports some of the most abundant bird life found on the Los Angeles River. The parks, spreading grounds, utility easements and vacant land adjacent to the river provide roosting and feeding habitat. Many species of birds also feed in the concrete channel, where algae grow in the warm, shallow water, and in the estuary South of Willow Street, including fish-eaters like waders (herons, egrets, occidental bitterns and rails), terns, osprey (a fish-eating hawk), pelicans and cormorants. California Brown Pelican and California Least Tern are Federally Endangered Species (Cooper, 1999).

The water in the estuary pools is deep and slow enough to support an abundant fish community as well. In addition to gobies and tilapia (mostly *Tilapia mozambica*) (Mitchell,

---

[4] At the confluence there is a ten-acre site (approx.) owned by the City of South Gate that contains an abandoned landfill which is vegetated with grasses, shrubs and trees (Los Angeles River Master Plan 1996).

1999), which are very abundant in the Los Angeles River, especially South of Willow Street, many species of fish are found in the estuary of the Los Angeles River. As an example, the following species have been found between the Ocean boulevard bridge and Queensway Bay bridge: California tonguefish, California halibut, specklefin midshipman, California lizardfish, diamond turbot, barcheek pipefish, and Pacific staghorn sculpin (bottom feeders), as well as white croaker, queenfish, deepbody anchovy, white seaperch, slough anchovy, barred sand bass, shiner perch, California grunion, and striped mullet (midwater feeders, often associated with bottom environment). This area also has harbored some pelagic fish, some of which will venture up an undetermined portion of the estuary: northern anchovy, Pacific sardine, Pacific pompano, Pacific barracuda, topsmelt, jacksmelt, white seabass, barred pipefish, giant kelpfish, and bay pipefish (MBC, 1994).

Beneficial uses of the Los Angeles River watershed are summarized in Table 7.1-1, excerpted from the 1994 Basin Plan. These are the designated beneficial uses that must be protected (LARWQCB, 1994).

Table 7.1-1. Beneficial Uses of Surface Waters of the Los Angeles River.

Surface Waters	Hydro Unit	MUN	IND	PROC	GWR	NAV	REC1	REC2	COMM	WARM	COLD	EST	MAR	WILD	RARE	MIGR	SPWN	SHELL	WET
Los Angeles River Estuary	405.12		E			E	E	E	E			E	E	E	E	E	E	P	E
Los Angeles River to Estuary	405.12	P*	P	P	E		E	E		E			E	E	E	P	P	P	
Los Angeles River	405.15	P*	P		E		E	E		E				P					
Los Angeles River	405.21	P*	P		E		E	E		E				E					E
Compton Creek	405.15	P*			E		E	E		E				E					E
Rio Hondo downstream Spreading Grounds	405.15	P*			I		P	E		P				I					
Rio Hondo	405.41	P*			I		I	E		P				I	E				E
Alhambra Wash	405.41	P*			I		P	I		P				P	E				
Rubio Wash	405.41	P*			I		I	I		I				E	P				
Rubio Canyon	405.31	P*			E		I	I		I				E	E				E
Eaton Wash	405.41	P*			I		I	I		I				E					
Eaton Wash (downstream dam)	405.31	P*			I		I	I		I				E					
Eaton Wash (upstream dam)	405.31	P*			I		I	I		I				E					
Eaton Dam and Reservoir	405.31	P*			I		P	I		I				E					
Eaton Canyon Creek	405.31	P*			E		E	E		E				E	E		E		E
Arcadia Wash (lower)	405.41	P*			I		P	I		P				P					
Arcadia Wash (upper)	405.33	P*			I		P	I		P				P					
Santa Anita Wash (lower)	405.41	P*			I		P	E		P				P	E				
Santa Anita Wash (upper)	405.33	P*			E		E	E		E				E	E				
Little Santa Anita Canyon Creek	405.33	P*			I		I	I		I				E					
Big Santa Anita Reservoir	405.33	P*			E		P	E		E	E			E					

Table 7.1-1. Beneficial Uses of Surface Waters of the Los Angeles River, continued.

Surface Waters	Hydro Unit	MUN	IND	PROC	GWR	NAV	REC1	REC2	COMM	WARM	COLD	EST	MAR	WILD	RARE	MIGR	SPWN	SHELL	WET
Santa Anita Canyon Creek	405.33	E*			E		E	E		E	E			E	E		E		E
Winter Creek	405.33	P*			I		I	E		I				E					E
East Fork Santa Anita Canyon	405.33	P*			E		E	E		E	E			E			E		E
Sawpit Wash	405.41	I			I		I	I		I				E					
Sawpit Canyon Creek	405.41	P*			I		I	I		I				E	E				
Sawpit Dam and Reservoir	405.41	P*			I		P	I		I				E					
Monrovia Canyon Creek	405.41	I			I		I	I		I				E					E
Arroyo Seco downstream Devil's Gate R. (L)	405.15	P*					I	I		P				P					
Arroyo Seco downstream Devil's Gate R. (U)	405.31	P*					I	I		P				P	E				
Devil's Gate Reservoir (L)	405.31	P*			I		I	I		I				E					
Devil's Gate Reservoir (U)	405.32	I*			I		I	I		I				E					
Arroyo Seco upstream Devil's Gate R.	405.32	E	E	E	E		E	E		E	E			E					E
Millard Canyon Creek	405.32	E*	E	E	E		E	E		E				E	E				E
El Prieto Canyon Creek	405.32	I	I	I	I		I	I		I				E					
Little Bear Canyon Creek	405.32	P*			I		I	I		I	I			E					E
Verdugo Wash	405.24	P*			I		P	I		P				P					
Halls Canyon Channel	405.24	P*	I	I	I		I	I		I				E					
Snover Canyon	405.32	I	I	I	I		I	I		I				E					
Pickens Canyon	405.24	I*			I		I	I		I				E					
Shields Canyon	405.24	I	I	I	I		I	I		I				E					
Dunsmore Canyon Creek	405.24	I	I	I	I		I	I		I				E					

Table 7.1-1. Beneficial Uses of Surface Waters of the Los Angeles River, continued.

Surface Waters	Hydro Unit	MUN	IND	PROC	GWR	NAV	REC1	REC2	COMM	WARM	COLD	EST	MAR	WILD	RARE	MIGR	SPWN	SHELL	WET
Burbank Western Channel	405.21	P*					P	I		P				P					
La Tuna Canyon Creek	405.21	P*			I		I	I		I				E					
Tujunga Wash	405.21	P*			I		P	I		P	P			P					
Hansen Flood Control Basin & Lakes	405.23	P*			E		E	E		E	E			E	E				
Lopez Canyon Creek	405.21	P*			I		I	I		I				E					
Little Tujunga Canyon Creek	405.23	P*			I		I	E		I	I			E	E				
Kagel Canyon Creek	405.23	P*			I		I	I		I				E					
Big Tujunga Canyon Creek	405.23	P*			E		E	E		E	E			E	E		E		E
Upper Big Tujunga Canyon Creek	405.23	P*			E		E	E		I	P			E					E
Haines Canyon Creek	405.23	P*			I		I	I		I				E	E				
Vasquez Creek	405.23	P*			E		E	E		P	P			E					E
Clear Creek	405.23	P*			E		E	E		E	E			E					E
Big Tujunga Reservoir	405.23	P*			E		P	E		E	P			E			E		
Mill Creek	405.23	P*			E		E	E		E	E			E					E
Pacoima Wash	405.21	P*			E		P	E		E				E	E				
Pacoima Reservoir	405.22	P*			E		E	E		E				E					
Pacoima Canyon Creek	405.22	P*			E		E	E		E	E			E	E		E		E
Stetson Canyon Creek	405.22	P*			I		P	E		P				P					
Wilson Canyon Creek	405.22	P*			I		E	E		I				E					
May Canyon Creek	405.22	P*			I		I	E		I				E					
Sepulveda Flood Control Basin	405.21	P*			E		E	E		E				E					E
Bull Creek	405.21	P*			I		I	I		I				E					
Los Angeles Reservoir	405.21	E	E	E	P		P	E		E				E	E				
Lower Van Norman Reservoir	405.21	E*	E	E	E		E	E		E				E	E				
Solano Reservoir	405.21	E*					P			P				E					
Caballero Creek	405.21	P*			I		I	I		I				E					
Aliso Canyon Wash and Creek	405.21	P*			I		I	I		I				E					
Limeklin Canyon Wash	405.21	P*			I		I	I		I				E					

Table 7.1-1. Beneficial Uses of Surface Waters of the Los Angeles River, concluded.

Surface Waters	Hydro Unit	MUN	IND	PROC	GWR	NAV	REC1	REC2	COMM	WARM	COLD	EST	MAR	WILD	RARE	MIGR	SPWN	SHELL	WET
Browns Canyon Wash and Creek	405.21	P*			I		I	I		I				E					
Arroyo Calabasas	405.21	P*					P	I		P				P					
McCoy Canyon Creek	405.21	P*			I		I	I		I				E					
Dry Canyon Creek	405.21	P*			I		I	I		I				E					
Bell Creek	405.21	P*			I		I	I		I				E					
Chatsworth Reservoir	405.21	E	E	E			P	E		E				E					
Dayton Canyon Creek	405.21	P*			I		I	I		I				E					
Echo Lake	405.15	P*					P	E		P				E					
Lincoln Lake Park	405.15	P*					P	E		P				E					

I

BENEFICIAL USE CODES (see Basin Plan for more details):
MUN - Municipal and Domestic Water Supply
COLD - Cold Freshwater Habitat
EST - Estuarine Habitat
MAR - Marine Habitat
WILD - Wildlife Habitat
WARM - Warm Freshwater Habitat
IND - Industrial Service Supply
PROC - Industrial Process Supply
GWR - Ground Water Recharge
REC1 - Water Contact Recreation
REC2 - Non-Contact Water Recreation
COMM - Commercial and Sport Fishing

E: Existing beneficial use
P: Potential beneficial use
I: Intermittent beneficial use

: Conditional designation: the waters designated with an "" in the table do not have MUN as a designated use until such time as the Basin Plan is modified based on additional study. In the interim, no new effluent limitations will be placed in Waste Discharge Requirements as a result of these designations until the Regional Board adopts an amendment that identifies those waters in the Region that should be excepted from the MUN designation

7.1.3.2 Description of the storm drain system

The storm drain system in the Los Angeles River watershed is a vast network of underground pipes and open channels that were designed to prevent flooding. Runoff drains from the streets, into the gutters, and enters the system through an opening in the curb called a catch basin. Catch basins serve as the neighborhood entry point to the journey into the ocean.

The backbone of the flood control system in Los Angeles County, dating back to the 1930's, was designed, constructed, maintained, and monitored by the Los Angeles County Flood Control District, represented by the County of Los Angeles Department of Public Works. Other flood control systems, either in whole or in part, are the jurisdiction of other permittees, Caltrans, or the U.S. Army Corps of Engineers. Stormwater and urban runoff from streets are collected to approximately 100,000 catch basins. These are inlets to a 1,500 mile long maze of pipes, open channels, and outlets that make up the storm drain system.

The storm drain system receives no treatment or filtering process and is completely separate from Los Angeles' sanitary sewer system. The following graphics show the storm drain system in Los Angeles River Watershed. In general, curbside catch basins are the primary points of entry for urban runoff. From there, runoff flows into underground tunnels that empty into flood control channels in Los Angeles River Watershed. The flood control channels eventually discharge to over 65 shoreline outfalls rimming the coast.

Figure 7.1-1 Storm drain systems in the Los Angeles River Watershed and Greater Los Angeles Area

Source: City of Los Angeles

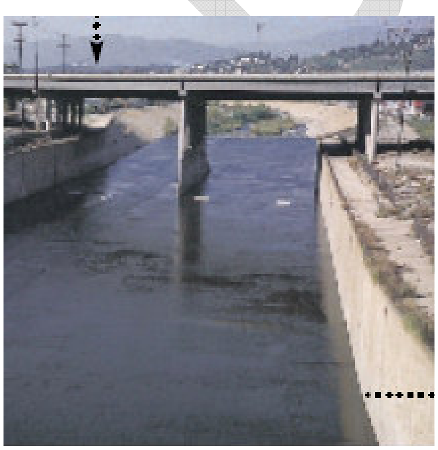
Figure 7.1-2 Stormwater flow path in the storm drain system of the Los Angeles River Watershed

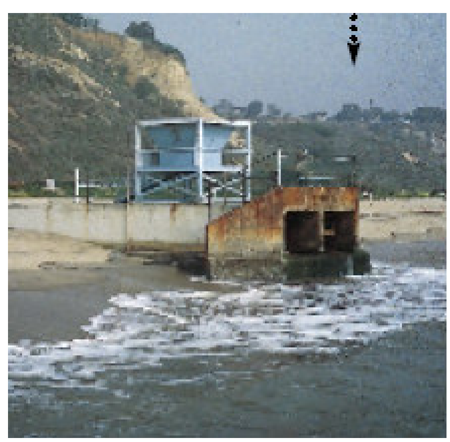
Catch Basins are the major entry points to the storm drain system

Underground drains carry runoff into larger channels such as this

Storm drain enters Los Angeles River at Lankershim, by Circa 1991

Glendale LA Water Treatment Plant Effluent Outfall





Runoff in storm drains flows into open channel in Los Angeles River

Runoff reaches the ocean through outlets at beaches

Los Angeles' flood control is a complex system of hundreds of debris basins in the surrounding canyons, secondary regulating dams, storm drains, paved control channels, and specially constructed streets that act as secondary storm drains. A typical storm drain is shown in the Figure 7.1-2. The storm drain system in Los Angeles River Watershed shown in the Figure 7.1-3 consists of thousands of catch basins, thousands of miles of underground storm drains, as well as open channels. The length of the system and the locations of all storm drain connections are not known exactly. Rough estimates, based on information from large municipalities, indicate that the length of the system exceeds 1500 miles. Approximately 100 million gallons of water flow through Los Angeles' storm drain system on an average dry day. When it rains, the amount of water flowing through the channels can increase to 10 billion gallons reaching speed of 35 mph and depths of 25 feet.

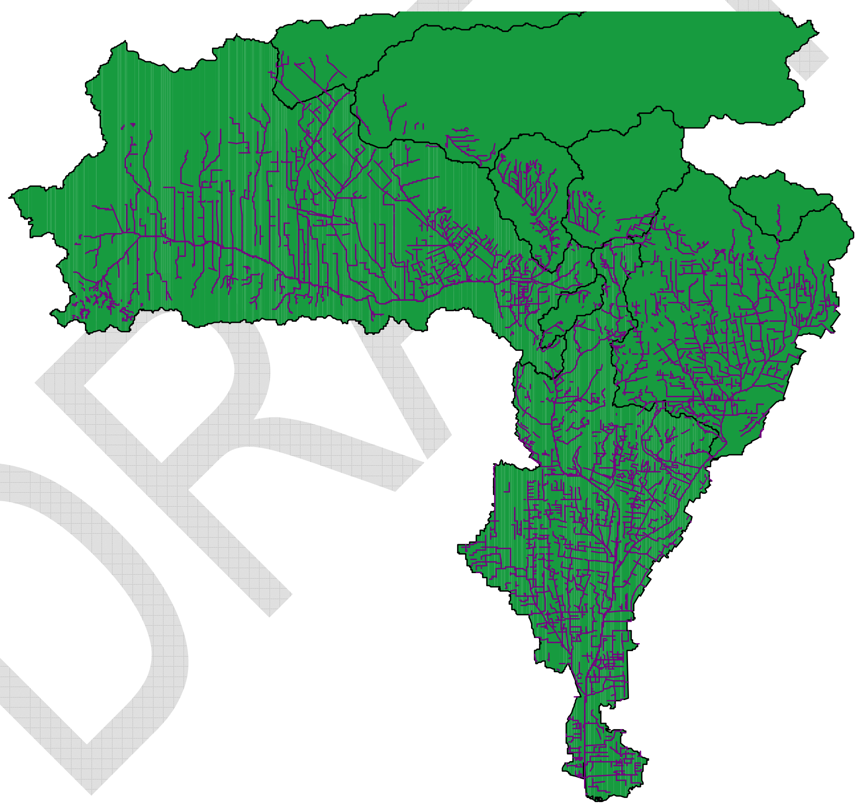


Figure 7.1-3: The Storm Drain System in Los Angeles River Watershed

Catch basins are the main points of entry into the storm drain system. The County of Los Angeles and other cities within the Los Angeles River Watershed are co-permittees of a Municipal Separate Storm Sewers (MS4) Stormwater permit that has certain Storm Drain Operation and Management requirements including, but not limited to:

a) Prioritization of catch basins for clean-outs based on their propensity for trash accumulation,
b) Inspection and cleaning of catch basins between May 1 and September 30 of each year;
c) Additional cleaning of any catch basin that is at least 25% full of trash and/or debris;
d) Record keeping of catch basins cleaned; and
e) Recording of the overall quantity of catch basin waste collected.

The MS4 permit requires that catch basins be cleaned out according to the following schedule:

- Priority A (high trash generation): A minimum of three times during the wet season and once during the dry season
- every year.
- Priority B (moderate trash generation): A minimum of once during the wet season and once during the dry season every year.
- Priority C (low trash generation): A minimum of once per year.

Each Permittee is required to implement BMPs for Storm Drain Maintenance that includes:

- A program to visually monitor Permittee-owned open channels and other drainage structures for debris at least annually and identify and prioritize problem areas of illicit discharge for regular inspection;
- A review of current maintenance activities to assure that appropriate storm water BMPs are being utilized to protect water quality;
- Removal of trash and debris from open channel storm drains shall occur a minimum of once per year before the storm season;
- Minimize the discharge of contaminants during MS4 maintenance and clean outs; and
- Proper disposal of material removed.

Permittees subject to a trash TMDL (such as in the Los Angeles River and Ballona Creek Watershed Management Areas) are subject to these requirements until trash TMDL implementation measures are adopted. Thereafter, the subject Permittees shall implement programs in conformance with the TMDL implementation schedule, which could include an effective combination of measures such as street sweeping, catch basin cleaning, installation of treatment devices and trash receptacles, or other BMPs.

7.2 Installation, Operation and Maintenance Activities for Trash-reduction Structural BMPs

This section discusses the installation, and operation and/or maintenance activities associated with the trash 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 trash TMDL would consist of the installation of improvements to the stormdrain system to attain "full capture" certification. These improvements include installation of screens and inserts for catch basins, gross solids removal devices (GSRDs) within the alignment of storm drain pipes, and trash collection nets in stormdrain outlets. 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.

Installation of stormdrain improvements to comply with the trash TMDL would be located throughout the developed portion of the Los Angeles River watershed. The trash TMDL provides approximately ten years to complete the installation of storm drain improvements. The installation would occur at different locations at different periods. Equipment to be installed would include filters, metal screen, fabric nets, and gross solid removal devices. Some of the equipment would be mounted on small steel structures. Equipment weights range from several hundred pounds to 100,000 pounds, therefore the installation rigs would range from small truck-mounted cranes to larger track-mounted units. The equipment would be electrically connected together by cable or by buss (open air copper or aluminum tubes). The installation would be either through the inlets or outlets or with the piping. GSRD station sites would typically be finished with fencing around the site.

7.2.1 Stormdrain Improvement Installation Staging and Methods

The following paragraphs describe installation activities and staging for these facilities. The sites proposed for the location of trash TMDL are presently in residential, commercial, or industrial areas. Site preparation would include clearing, grubbing and grading with bulldozers and dump trucks. Access roads would be prepared concurrently with the site operations.

7.2.1.1 Catch Basin Inserts

Improvements to catch basins include concrete work, installation of filters within the catch basins and installation of screens at the catch basin inlets. These activities entail concrete demolition and refinishing and field fabrication methods such as welding and mechanical bolting. These improvements would be located in existing catch basins within existing municipal and agency stormdrain systems. Construction of new catch basins is not required to comply with the TMDL, although damaged catch basins may require replacement. Existing catch basins are located below sidewalks and streets with openings flush with the curb.

Installation tasks for catch basin improvements include:

- Removal of manhole cover and accessing bottom of catch basin and manually inserting prefabricated catch basin inserts in the bottom or interior of the catch basin

- Concrete demolition and removal if the entire catch basin need replacement

- Catch basin installation – this task pertains to catch basins that require replacement

- Concrete drilling and welding – this task is required to install fasteners and bracing for screens and brushes at the storm drain inlets. These screens can be welded onto the installed bracing

- Concrete finishing – to restore site after installation is completed.

Installation of catch basin improvements requires the following types of tools: compressor, hand power tools, hand tools, backhoe, welder, light-duty truck. Based on Means Heavy Construction Cost Data, removal and reset of a catch basin can be accomplished at a rate of 7 per day by a three person crew with a backhoe. Conversations with City of Glendale personnel indicate that 2-person crew can install inserts and screens in less than one-day City of Glendale, 2006).

7.2.1.2 Gross Solid Removal Device and Vortex Separation System Installation

Gross Solid Removal Devices are new installations that are located in transportation rights of way. These devices are typically fabricated off-site and transported to the site for installation. The installation sites are typically not located in areas of sensitive receptors. Installation activities include:

- Site Preparation – a flat area of sufficient size to locate a concrete equipment pad is required. Vegetation removal might be required, as well as placement of a gravel sub-base for the area. The site should be selected for access by an equipment crane, maintenance vehicles and trash collection vehicles.

- Fencing – security fencing is generally preferred for water quality treatment systems located within existing structures in watersheds. Chain link fencing is often selected which involves installation of fence poles. Fence screens are often used in areas where a GSRD causes adverse visual impacts.

- Concrete pad – GSRDs are generally fabricated as modular units that are transported to the site and bolted to a concrete pad. This task involves preparing a level sub-base, placement of rebar and forms, and pouring ready-mix concrete to form a pad of sufficient dimensions to support the GSRDs.

- GSRD placement – the GSRDs are placed onto the concrete pad with an equipment crane and secured with anchor bolts.

- Pipe fitting/connection – the storm drain conveyance piping is connected to the GSRD with standard plumbing connects such as unions or joints. The connections are leak tested.

- Utility service – for GSRDs which require electrical service, wiring from a nearby service connector will be made to a switchbox located on the concrete pad. Appropriate conduit and wiring for outdoor service would be used.

Equipment required to install GSRDs include: equipment crane, concrete mix truck, hand power tools, hand tools, backhoe, and light duty truck. Caltrans provided descriptions of installation of GSRD in the report Phase I Pilot Study – Gross Solid Removal Devices (Caltrans 2003b), and reported that the installation of GSRDs was straightforward there were no significant environmental impacts due to the installation of GSRD.

7.2.1.3 Trash Nets

Trash nets are installed at the outlets of stormdrains and channels. These locations are typically located within the interior of the stormdrain system where there is limited public access. Installation of trash nets includes field joining techniques and may include concrete repair. The tasks for trash net installation include:

- Preparation of concrete for installation of bracing to hold trash nets. Concrete preparation may entail simple cleaning of the concrete surfaces to patching and resurfacing of areas where the trash nets are to be attached.

- Installation of net bracing – net bracing is typically installed with anchor bolts.

- Attachment of the net to the bracing – simple mechanical devices are used to attach the flexible netting to the metal bracing.

Tools required to install trash netting include: hand power tools, hand tools, backhoe, and light duty truck. Contractors report that the Hamilton Bowl trash nets in Signal Hill and Long Beach were installed in a single day without adverse environmental impacts. Any impacts to air quality from installation equipment would be less than significant for such a short duration, particularly if equipment is tuned and maintained in good working condition to minimize emissions of criteria pollutants and particulates. Potential short-term noise impacts could be mitigated through installation practices such as using noise barriers and modified work hours. These measures are discussed in greater detail in the sections dealing with each specific resource area.

7.2.2 Maintenance

Maintenance includes removing trash from catch basins, GSRDs, and trash nets and providing any mechanical service and repair that may be required. Because each device is limited in the volume of trash that can be collected, it is likely that relatively light-duty trucks can be used. Additionally, there is opportunity to consolidate the trash collected from catch basins, GSRDs and trash nets with other trash to mitigate impacts associated with transport and disposal of trash collected from storm drain improvements.

The impacts from maintenance activities associated with the trash TMDL can be mitigated through modified work hours and dust suppression methods. Spoils resulting from installation of storm drain improvements would be relatively small in quantity. These spoils would be disposed of by disposal of excess in licensed facilities. Any spoils found to be contaminated with hazardous waste would not be spread within the right-of-way; the disposal of such material is addressed in Hazardous Waste.

7.3 AESTHETICS

This section focuses on the existing visual resources at, or in the vicinity of, the proposed implementation locations of the Trash TMDL. The potential impacts that could result to visual resources from installation and maintenance of each of the implementation alternatives are addressed, and the significance of those impacts, if anticipated, is analyzed for each of the implementation alternatives. Mitigation to reduce the impacts to the project is provided, where applicable. Visual resources include the aesthetics of the component sites and their surroundings, valued views, designated scenic highways, corridors or parkways, and lighting.

7.3.1 Environmental Setting

This section provides an overview of visual resources known to occur in the Los Angeles River Watershed, specifically as related to each implementation alternative for the trash TMDL.

The Los Angeles River and its tributaries traverse throughout the watershed, from the San Fernando Valley and eastern Los Angeles County, through Central Los Angeles, and ending at the Pacific Ocean. Large portions of the River and many of its tributaries have been placed in concrete channels. The portions of the Los Angeles River and its tributaries that are not in concrete channels remain in a relatively natural state, such as within Sepulveda Basin and the portion from Burbank/Western Channel to near Arroyo Seco. Along Valleyheart Drive in the San Fernando Valley, the river meanders and is bordered by large shrubs that provide shaded walkways. In contrast, a wide barren easement borders the Tujunga Wash, and in downtown Los Angeles there is only limited access to an intensely urban and industrial riverfront. In the southern reaches, the river is bordered by mixed uses and thus has a varied visual character.

There are valuable scenic resources from many portions of the Los Angeles Basin. The hills and mountains surrounding the Basin to the north and east also provide a valuable scenic resource throughout the Basin. Within Los Angeles County are two state-designated scenic and/or historic roadways. Highway 2, part of the Angeles Crest Scenic Byway, is an official state-designated scenic highway, and Highway 110, the Arroyo Seco Historic Parkway, is an official state-designated historic parkway.

7.3.2 Thresholds of Significance

In accordance of Appendix G of the CEQA Guidelines, the project would have a significant effect on the environment if it would do any of the following:

- Have a substantial adverse effect on a scenic vista;
- Substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within a state scenic highway;
- Substantially degrade the existing visual character or quality of the site and its surroundings; or

- Create a new source of substantial light or glare that would adversely affect day or nighttime views in the area.

7.3.3 Impacts and Mitigations

The general aesthetic characteristic of the parts of the watershed addressed in the trash TMDL is densely urbanized. Visual and scenic impairment on the Los Angeles River, at the Estuary, and on the beaches are already existing impacts, and should be considered baseline conditions. Implementing trash reduction measures may subject localities to the visual effects of abating litter generated within their jurisdictions, which is arguably preferable to allowing downstream cities to suffer the visual effects of the high volumes of trash that collect there from the upstream cities. Implementation of the trash TMDL would eventually improve the overall aesthetic appeal of the LA River by the removal of visible trash, thus causing a positive impact. The aesthetic effects of implementation alternatives are discussed below.

7.3.3.1 Vortex Separation Systems

Vortex Separation Systems (VSSs) are subsurface devices and therefore installing them at a particular location is unlikely to result in an impairment of scenic and opens views to the public. Since these units will be installed within already existing storm drain network, it is also not foreseeable that the installation of VSSs may substantially damage scenic resources and/or degrade the existing visual character or quality of any particular location and its surroundings. It is not foreseeable that the installation activities associated with siting CDS units would result in any substantial adverse effect on the scenic vistas of the location. However, in the unlikely event that such activities should create aesthetically offensive impacts, these can be mitigated with screening and other construction BMPs. Screening can be used to reduce temporary impacts from aesthetically offensive installation activities. An illustration of location with VSS device installed is shown in Figure 7.3-1.

Figure 7.3-1. Illustration of location with VSS device installed.

7.3.3.2 Catch Basin Inserts

Catch basin inserts will have less than significant impact on any scenic vista or view open to the public. Curbside catch basin inserts are roadside devices. Installation of catch basin inserts would not foreseeably obstruct scenic vistas or opens views to the public. Installation of catch basin inserts is a quick process and would not likely create an aesthetically offensive site to the public during installation. Once completed, catch basin inserts will not result in an impairment of scenic and opens views to the public. Catch basin inserts themselves are unlikely to create an aesthetically offensive site after installation because they are installed at street level. That notwithstanding, the creation of an aesthetically offensive site could be mitigated by improving the aesthetic characteristics of that device. Trash accumulated outside of the catch basin inserts could create an aesthetically offensive site. Increased street sweeping and enforcement of litter laws may mitigate this adverse effect and even cause a positive impact by removing visible trash. Figure 7.3-2 shows a catch basin insert device with accumulated debris..

Figure 7.3-2. A catch basin brush insert with accumulated debris

7.3.3.3 Trash Nets

Installation of in-line trash nets would not foreseeably obstruct scenic vistas or opens views to the public as their installation will be limited to locations within the storm drain system and not in open channels. Once completed, trash nets are unlikely to result in an impairment of scenic and open views to the public. To the extent that a particular device at a particular site could obstruct scenic views, such impacts could be avoided by employing non-structural controls at such locations instead, for instance, increased litter enforcement.

Trash nets may create an aesthetically offensive site to the public during installation. The effects are less than significant with mitigation incorporated. The creation of an aesthetically offensive site during installation can be mitigated with screening and other construction BMPs.

End-of-Pipe trash nets are surface devices and would create an aesthetically offensive site after installation. The creation of an aesthetically offensive site could be mitigated by employing alternative structural devices, such as in-line trash nets, or by employing non-structural controls, for instance, increased litter enforcement.

Trash nets may become a target of vandalism. Vandalized structures may become an aesthetically offensive site. Improved lighting and enforcement of current vandalism regulations may decrease the instance of vandalized structures. Trash nets will have less than significant impact on any scenic vista or view open to the public, by virtue of their location. Figure 7.3-3shows a location with trash nets installed.

Figure 7.3-3. Picture of end-of-pipe trash net containing trash.

<u>7.3.3.4 Gross Solids Removal Devices</u>

GSRDs are subsurface devices and, as such, would not foreseeably obstruct scenic vistas or open views to the public after installation. To the extent that a particular GSRD unit at a particular site could obstruct scenic views, such impacts could be avoided by employing non-structural controls at such locations instead, for instance, increased litter enforcement.

During installation, however, GSRDs may create an aesthetically offensive site to the public. The creation of an aesthetically offensive site during installation can be mitigated with screening and other construction BMPs. Standard architectural and landscape architectural practices can be implemented to reduce impacts from aesthetically offensive structural impacts. Any effects should be less than significant impact with mitigation incorporated.

GSRDs may become a target of vandalism. 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. Figure 7.3-4 shows a location with GSRD installation.

Figure 7.3-4. Location with GSRD Installation.

7.3.3.5 Increased Street Sweeping

Increased street sweeping is unlikely to result in an impairment of scenic and opens views to the public. Increased street sweeping would not create an aesthetically offensive site. Rather, this alternative would pose a positive aesthetic impact by reducing visible trash, instead.

7.3.3.6 Enforcement of Litter Laws

Enforcement of litter laws would not result in an impairment of scenic and opens views to the public, nor would it create an aesthetically offensive site. Enforcement of litter laws would pose a positive aesthetic impact by reducing visible trash, instead.

7.3.3.7 Public Education

Public education would not result in an impairment of scenic and opens views to the public, nor would it create an aesthetically offensive site. Public education would pose a positive aesthetic impact by reducing visible trash, instead.

7.4. Agricultural Resources

This section addresses the potential impacts that could result to agricultural land from each implementation alternatives of the trash TMDL and significance of those impacts, if anticipated. Mitigation to reduce the impacts of the proposed alternatives is provided where applicable.

7.4.1 Environmental Setting

The Department of Conservation, Division of Land Resource Protection, provides oversight of agricultural lands in California. The Farmland Mapping and Monitoring Program (FMMP) of the Department of Conservation uses soil surveys from the United States Department of Agriculture (USDA) in conjunction with land use data to determine farmland classification. Farmland classifications do not include publicly owned lands for which an adopted policy preventing agricultural use is enforced. The following classifications of agricultural lands are defined in the FMMP.

Prime Farmland

Prime Farmland is land that has the best combination of physical and chemical characteristics for producing food, feed, forage, fiber, and oilseed crops and is also available for these uses. It has the soil quality, growing season, and moisture supply needed to produce economically sustained high yields of crops when treated and managed according to acceptable farming methods, including water management. In general, prime farmlands have an adequate and dependable water supply from precipitation or irrigation, a favorable temperature and growing season, acceptable acidity or alkalinity, acceptable salt and sodium content, and few or no rocks. They are permeable to water and air. Prime farmlands are not excessively erodible or saturated with water for a long period of time, and they either do not flood frequently or are protected from flooding.

Farmland of Statewide Importance

Farmland of Statewide Importance is land other than Prime Farmland that has a good combination of physical and chemical characteristics for the production of crops. Similar to Prime Farmland, Farmland of Statewide Importance must meet specific criteria for soil pH, temperature, sodium content, permeability, and other defined characteristics.

Unique Farmland

Unique Farmland is land which does not meet the criteria for Prime Farmland or Farmland of Statewide Importance, that has been used for the production of specific high economic value crops at some time during the two update cycles prior to the mapping date. It has the special combination of soil quality, location, growing season, and moisture supply needed to produce sustained high quality and/or high yields of a specific crop when treated and managed according to current farming methods. Examples of such crops may include oranges, olives, avocados, rice, grapes, and cut flowers. It does not include publicly owned lands for which there is an adopted policy preventing agricultural use.

Farmland of Local Importance

Farmland of Local Importance is either currently producing crops, has the capability of production, or is used for the production of confined livestock. Farmland of Local Importance is land other than Prime Farmland, Farmland of Statewide Importance or Unique Farmland.

This land may be important to the local economy due to its productivity or value. It does not include publicly owned lands for which there is an adopted policy preventing agricultural use.

Grazing Land
Grazing Land is defined as land on which the existing vegetation, whether grown naturally or through management, is suitable for grazing or browsing of livestock. Grazing Land does not include land previously designated as Prime Farmland, Farmland of Statewide Importance, Unique Farmland, or Farmland of Local Importance, and heavily brushed, timbered, excessively steep, or rocky lands which restrict the access and movement of livestock.

7.4.2 Regulatory Setting

Federal
The definitions for Prime Farmland, Farmland of Statewide Importance, Unique Farmland, Farmland of Local Importance, and Grazing Land were developed by the Natural Resources Conservation Service (NRCS) as part of their nationwide Land Inventory and Monitoring (LIM) system. Various states have modified the definitions for specific uses, including California.

State
The LIM definitions have been modified for use in California. The most significant modification is that Prime Farmland and Farmland of Statewide Importance must be irrigated.

Local
Farmland of Local Importance has been identified by local advisory committees and definitions vary from county to county, as intended under the LIM system.

7.4.3 Thresholds of Significance

The California Environmental Quality Act (CEQA) Thresholds Guide does not address effects on agricultural resources. Therefore, the significance determinations were developed using the evaluation questions concerning agriculture in Appendix G of the *CEQA* Guidelines. A proposed alternative may have a significant adverse impact on agricultural resources if it would result in any of the following:

- Convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance (Farmland), as shown on maps prepared pursuant to the Farmland Mapping and Monitoring Program of the California Resources Agency to non-agricultural use;

- Conflict with existing zoning for agricultural use, or a Williamson Act contract;

- Involve other changes to the existing environment, which, due to their location or nature, could result in conversion of farmland to other non-agricultural use.

7.4.4 Impacts and Mitigations

According to the Los Angeles County Important Farmland map, the Prime and

Unique Farmland in Los Angeles River Watershed is located in the San Fernando Valley. As shown in Figure 7.3-1, pockets of Prime and Unique Farmland exist throughout the western half and inland portion of the San Fernando Valley. Grazing Land exists at the north end of western half. Significant trash generation is not expected on agricultural lands and therefore the use of structural trash-reduction BMPs is not likely in these areas.

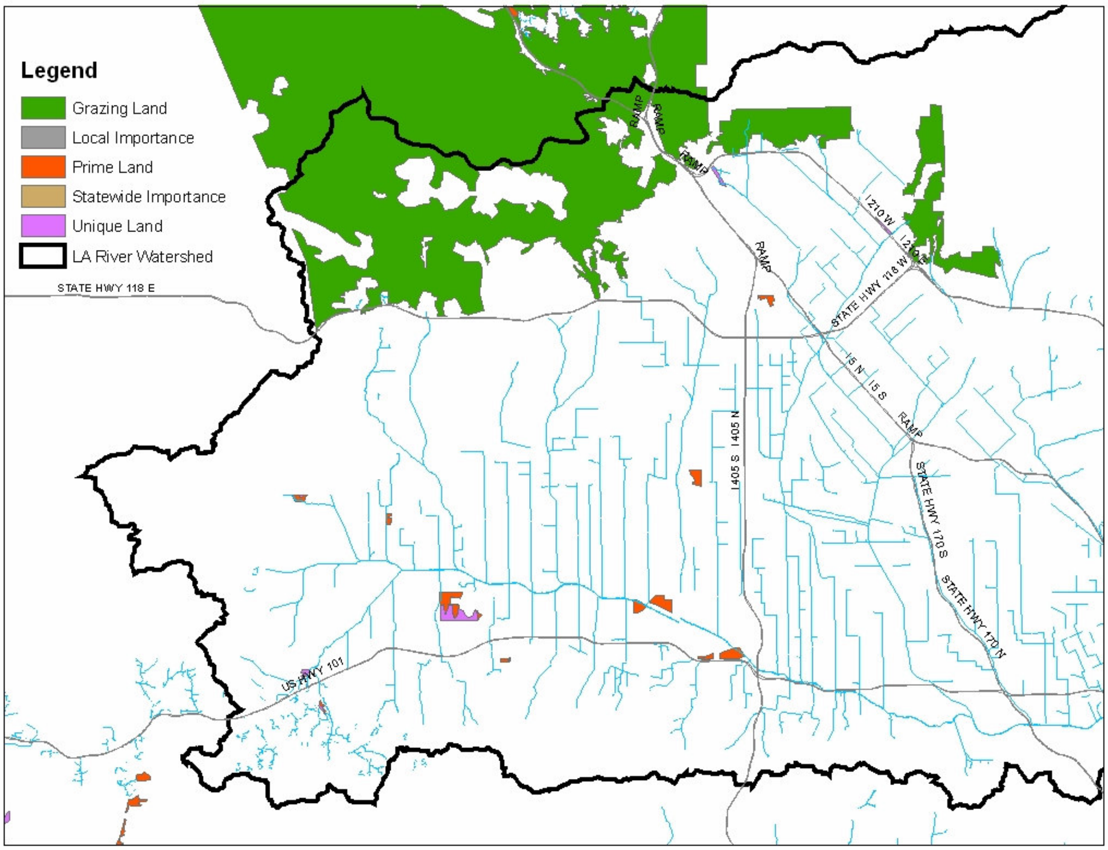


Figure 7.4-1. Agricultural Land uses in Los Angeles River Watershed. (Area not shown does not contain agricultural land)

7.4.4.1 Vortex Separation Systems

The vortex separation systems would be implemented in currently urbanized areas. Because these areas are already fully urbanized it is unlikely that their implementation would cause the removal, disturbance or change in agricultural resources. It is not expected vortex separation systems will be placed in any area currently engaged in crop production. The installation of vortex separation systems involves no changes in the existing environment that could result in conversion of farmland to non-agricultural use. Rather, it involves installation activities in an existing storm drain system. The implementation would not result in new population or employment growth at the extent that could create a need for new housing development on agricultural land. The implementation also would not require any off-site road improvements or other infrastructure that could result in conversion of farmland to non-agricultural use. In case that any agricultural land may be impacted, the impacts could be avoided or mitigated by employing alternative structural or non-structural controls, for instance, increased litter enforcement.

7.4.4.2 Catch Basin Inserts

The catch basin inserts would be implemented in catch basins of currently urbanized areas. Because these areas are already fully urbanized it is unlikely that their implementation would cause the removal, disturbance or change in agricultural resources. It is not expected catch basin inserts will be placed in any area currently engaged in crop production. The implementation of catch basin inserts involves no changes in the existing environment that could result in conversion of farmland to non-agricultural use. The implementation would not result in new population or employment growth at the extent that could create a need for new housing development on agricultural land. The implementation also would not require any off-site road improvements or other infrastructure that could result in conversion of farmland to non-agricultural use.

7.4.4.3 Trash Nets

The trash nets would be implemented in storm drain systems of currently urbanized areas. Because these areas are already fully urbanized it is unlikely that their implementation would cause the removal, disturbance or change in agricultural resources. It is not expected trash nets will be placed in any area currently engaged in crop production. The implementation of trash nets involves no changes in the existing environment that could result in conversion of farmland to non-agricultural use. The implementation would not result in new population or employment growth at the extent that could create a need for new housing development on agricultural land. The implementation also would not require any off-site road improvements or other infrastructure that could result in conversion of farmland to non-agricultural use.

7.4.4.4 Gross Solids Removal Devices

The gross solids removal devices would be implemented in storm drain systems of currently urbanized areas. Because these areas are already fully urbanized it is unlikely that their implementation would cause the removal, disturbance or change in agricultural resources. It is not expected gross solids removal devices will be placed in any area currently engaged in crop production. The implementation of gross solids removal devices involves no changes in the existing environment that could result in conversion of farmland to non-agricultural use. The implementation would not result in new population or employment growth at the extent that could create a need for new housing development on agricultural land. The implementation also would not require any off-site road improvements or other infrastructure that could result in conversion of farmland to non-agricultural use.

7.4.4.5 Increased Street Sweeping

Increased street sweeping would be implemented in currently urbanized areas. Because these areas are already fully urbanized it is unlikely that their implementation would cause the removal, disturbance or change in agricultural resources. The implementation would not result in new population or employment growth at the extent that could create a need for new housing development on agricultural land. The implementation also would not require any off-site road improvements or other infrastructure that could result in conversion of farmland to non-agricultural use.

7.4.4.6 Enforcement of litter laws

Enforcements of litter laws would be implemented in currently urbanized areas. There are no foreseeable impacts on agricultural resources.

7.4.4.7 Public Education

Public education does not involve physical changes to the environment. There are no foreseeable impacts on agricultural resources.

7.5 AIR QUALITY

This section provides an overview of air quality, odor conditions, and health risks known to occur within the study area associated with the Trash TMDL implementation activities, including short term construction and installation activities and long term street sweeping activities. Federal, state, and regional regulations apply to the Los Angeles River Watershed area air quality and set controls and goals for air quality criteria for the regional area. These criteria and the regional compliance with established air quality standards are summarized below. Findings of the significance of impacts are presented. Mitigation to reduce the impacts associated with each activity is discussed where applicable.

7.5.1 Environmental Setting

There are two perspectives for air pollution: daily emissions and pollutant concentrations. The term "emissions" means the quantity of pollutant released into the air and has unit of pounds per day (lbs/day). The term "concentrations" means the amount of pollutant material per volumetric unit of air and has unit of parts per million (ppm) or micrograms per cubic meter ($\mu g/m^3$).

Criteria Pollutants

The State of California and the federal government have established ambient air quality standards for six pollutants to protect public health. The six air pollutants of concern, called criteria pollutants, are carbon monoxide (CO), ozone (O_3), nitrogen dioxide (NO_2), sulfur dioxide (SO_2), respirable particulate matter (PM_{10}), fine particulate matter ($PM_{2.5}$), and lead (Pb). The criteria pollutants and associated adverse health effects are summarized below:

• **Carbon Monoxide.** Exposure to high concentrations of CO, a colorless and odorless gas, reduces the oxygen-carrying capacity of the blood, and therefore can cause dizziness and fatigue, impair central nervous system functions, and induce angina in persons with serious heart disease. CO is emitted almost exclusively from the incomplete combustion of fossil fuels. In urban areas, motor vehicles, power plants, refineries, industrial boilers, ships, aircraft, and trains emit CO. Motor vehicle exhaust releases most of the CO in urban areas. Vehicle exhaust contributes approximately 56 percent of all CO emissions nationwide and up to 95 percent in cities. CO is a non-reactive air pollutant that dissipates relatively quickly. As a result, ambient CO concentrations generally follow the spatial and temporal distributions of vehicular traffic. CO concentrations are influenced by local meteorological conditions, primarily wind speed, topography, and atmospheric stability. CO from motor vehicle exhaust can become locally concentrated when surface-based temperature inversions combine with calm atmospheric conditions. An inversion is an atmospheric condition in which a layer of warm air traps cooler air near the surface of the earth, preventing the normal rising of surface air. This situation is most typical at dusk in urban areas, such as the City of Los Angeles, between November and February.

• **Ozone.** While O_3 serves a beneficial purpose in the upper atmosphere (stratosphere) by reducing potentially harmful ultraviolet radiation, when it reaches elevated concentrations in the lower atmosphere it can be harmful to the human and to sensitive species of plants. Short-term O_3 exposure can reduce lung function, make persons susceptible to respiratory infection. Long-term exposure can impair lung defense mechanisms, and lead to emphysema and chronic bronchitis. O_3 concentrations build to peak levels during periods of light winds or stagnant air, bright sunshine, and high temperatures. Ideal conditions occur during summer and early autumn. Sensitivity to O_3 varies among individuals. About 20 percent of the population is sensitive to O_3, with exercising children being particularly vulnerable. O_3 is formed in the atmosphere by a complex series of chemical reactions under sunlight that involve “ozone precursors.” Ozone precursors are categorized into two families of pollutants: oxides of nitrogen (NO_x) and reactive organic compounds (VOCs). NO_x and VOCs are emitted from a variety of stationary and mobile sources. While NO_x is considered a criteria pollutant, VOCs are not in this category, but are included in this discussion as O_3 precursors. O_3 is the chief component of urban smog and the damaging effects of photochemical smog generally relate to the concentration of O_3.

O_3 is present in relatively high concentrations within the South Coast Air Basin (SCAB). The SCAB is a geographical region with similar meteorological and geographical characteristics. These similar conditions lead to similar pollution characteristics. Meteorology and terrain play major roles in O3 formation. The greatest source of smog producing gases is the automobile.

• **Nitrogen Dioxide.** The major health effect from exposure to high levels of NO_2 is the risk of acute and chronic respiratory disease. Like O_3, NO_2 typically is not directly emitted, but it is formed through a rapid reaction between nitric oxide (NO) and atmospheric oxygen. NO and NO_2 are collectively called NO_x and are major contributors to O_3 formation. NO_2 also contributes to the formation of PM_{10} (see discussion of PM_{10} below) and $PM_{2.5}$ through the formation of nitrate compounds. At atmospheric concentrations, NO_2 is only potentially irritating. In high concentrations, the result is a brownish-red cast to the atmosphere and reduced visibility.

• **Sulfur Dioxide.** The major health effect from exposure to SO_2 is acute and chronic respiratory disease. Exposure may cause narrowing of the airways, which may cause wheezing, chest tightness, and shortness of breath. SO_2 can also react with water in the atmosphere to form acids (or so-called “acid rain”), which can cause damage to vegetation and man-made materials. The main source of SO_2 is coal and fuel oil combustion in power plants and industries, as well as diesel fuel combustion in motor vehicles. Generally, the highest levels of SO_2 are found near large industrial complexes. In recent years, SO_2 concentrations have been reduced by the increasingly stringent controls placed on stationary source emissions of SO_2 and by limiting the sulfur content in fuel. SO_2 concentrations in southern California have been reduced to levels well below the state and national ambient air quality standards, but further reductions in emissions are needed to attain compliance with ambient air quality standards for sulfates, PM_{10}, and $PM_{2.5}$, to which SO_2 is a contributor.

• **Particulate Matter.** Particulate matter pollution consists of very small liquid and solid particles in the air, which can include smoke, soot, dust, salts, acids, and metals. Particulate matter also forms when gases emitted from industries and motor vehicles undergo chemical reactions in the atmosphere. Particulate matter is regulated as PM_{10} (Inhalable particulate matter less than 10 micrometers in diameter). More recently it has been subdivided into coarse and fine fractions, with particulate matter less than 2.5 micrometers in diameter ($PM_{2.5}$) constituting the fine fraction. Major sources of PM_{10} include crushing or grinding operations; dust stirred up by vehicles traveling on roads; wood-burning stoves and fireplaces; dust from construction, landfills, and agriculture; wildfires and brush/waste burning; industrial sources; windblown dust from open lands; and atmospheric chemical and photochemical reactions. $PM_{2.5}$ results from fuel combustion (e.g., from motor vehicles, power generation, and industrial facilities), residential fireplaces, and wood stoves. In addition, $PM_{2.5}$ can be formed in the atmosphere from gases such as SO_2, NO_x, VOCs, and ammonia, and elemental carbon. $PM_{2.5}$ is a subset of PM_{10}. The health effects from long-term exposure to high concentrations of particulate matter are increased risk of chronic respiratory disease like asthma and altered lung function in children. Particles with 2.5 to 10 microns in diameter tend to collect in the upper portion of the respiratory system. Particles that are 2.5 microns or less are so tiny that they can penetrate deeper into the lungs and damage lung tissues. These substances can be absorbed into the bloodstream and cause damage elsewhere in the body. Short-term exposure to high levels of particulate matter has been shown to increase the number of people seeking medical treatment for respiratory distress, and to increase mortality among those with severe respiratory problems. Particulate matter also results in reduced visibility. Ambient particulate matter has many sources. It is emitted directly by combustion sources like motor vehicles, industrial facilities, and residential wood burning, and in the form of dust from ground-disturbing activities such as construction and farming. It also forms in the atmosphere from the chemical reaction of precursor gases.

Toxic Air Contaminants

Toxic air contaminants (TACs) include air pollutants that can produce adverse human health effects, including carcinogenic effects, after long-term (chronic) or short-term (acute) exposure. One source of TAC is combustion of fossil fuels or digester gas. Human exposure occurs primarily through inhalation, although non-inhalation exposure can also occur when TACs in particulate form deposit onto soil and drinking water sources and enter the food chain or are directly ingested by humans. Many pollutants are identified as TACs because of their potential to increase the risk of developing cancer. For TACs that are known or suspected carcinogens, it has been found that there are no levels or thresholds below which exposure is risk free. No ambient air quality standards exist for TACs, except that standards for Pb, H2S, and vinyl chloride are provided in California Ambient Air Quality Standards [CAAQS]). Instead, numerous national, state, and local rules that affect both stationary and mobile emission sources regulate TAC emissions. Individual TACs vary greatly in the risk they present; at a given level of exposure one TAC may pose a hazard that is many times greater than another. Where data are sufficient to do so, a “unit risk factor” can be developed for cancer risk. The unit risk factor expresses assumed risk to a hypothetical population, the estimated number of individuals in a million who may develop cancer as the result of continuous, lifetime (70-year) exposure to 1 microgram per cubic meter ($\mu g/m^3$) of the TAC. Unit risk factors provide a standard that can be used to establish regulatory thresholds for permitting purposes. However, this is not a measure of actual health risk because actual populations do not experience the extent and duration of exposure that the hypothetical population is assumed to experience. For non-cancer health effects, a similar factor called a Hazard Index is used.

Areas with monitored pollutant concentrations that are lower than ambient air quality standards are designated as “attainment areas” on a pollutant-by-pollutant basis. When monitored concentrations exceed ambient standards, areas are designated as “nonattainment areas.” An area that recently exceeded ambient standards, but is now in attainment, is designated as a “maintenance area.” Nonattainment areas are further classified based on the severity and persistence of the air quality problem as “moderate” “severe” or “serious.” Classifications determine the applicability and minimum stringency of pollution control requirements.

7.5.2 Regulatory Setting.

Federal

The Environmental Protection Agency (EPA) is the federal agency charged with administering the federal Clean Air Act Amendments (CAAA) of 1990, which established a number of requirements. The USEPA oversees state and local implementation of federal Clean Air Act requirements. The CAAA require the EPA to approve State Implementation Plans (SIPs) to meet and/or maintain the national ambient standards.

The federal ambient air quality standards are shown in Table 7.5-1.

Table 7.5-1. Federal and California Ambient Air Quality Standards.

Pollutant	Averaging Time	California Standards	Federal Standards	
			Primary	Secondary
Ozone (O_3)	1 Hour	0.09 ppm (180 ug/m^3)	-	Same as Primary Standard
	8 Hour	0.070 ppm (137 ug/m^3)	0.08 ppm (157 ug/m^3)	
Respirable Particulate Matter (PM10)	24 Hour	50 ug/m^3	150 ug/m^3	Same as Primary Standard
	Annual Arithmetic Mean	20 ug/m^3	-	
Fine Particulate Matter (PM2.5)	24 Hour	No Separate State Standard	35 ug/m^3	Same as Primary Standard
	Annual Arithmetic Mean	12 ug/m^3	15 ug/m^3	
Carbon Monoxide (CO)	8 Hour	9.0 ppm (10mg/^{3})	9 ppm (10 mg/m^3)	None
	1 Hour	20 ppm (23mg/m^3)	35 ppm (40 mg/m^3)	
	8 Hour (Lake Tahoe)	6 ppm (7mg/m^3)	-	-
Nitrogen Dioxide (NO_2)	Annual Arithmetic Mean	-	0.053 ppm (100 ug/m^3)	Same as Primary Standard
	1 Hour	0.25 ppm (470 ug/m^3)	-	
Sulfur Dioxide (SO_2)	Annual Arithmetic Mean	-	0.030 ppm (80 ug/m^3)	-
	24 Hour	0.04 ppm (105 ug/m^3)	0.14 ppm (365 ug/m^3)	-
	3 Hour	-	-	0.5 ppm (1300 ug/m^3)
	1 Hour	0.25 ppm (655 ug/m^3)	-	-
Lead	30 Day Average	1.5 ug/m^3	-	-
	Calendar Quarter	-	1.5 ug/m^3	Same as Primary Standard

State

The California Air Resources Board (CARB) is the State agency responsible for coordinating both State and federal air pollution control programs in California. In 1988, the State legislature adopted the California Clean Air Act (CCAA), which established a statewide air pollution control program. The CCAA's requirements include annual emission reductions, increased development and use of low emission vehicles, and submittal of air quality attainment plans by air districts. The CARB has established State ambient air quality standards, shown in Table 7.5-1. Additionally, the CARB has established State standards for pollutants that have no federal ambient air quality standard, including sulfate, visibility, hydrogen sulfide, and vinyl chloride.

Local

The South Coast Air Quality Management District (SCAQMD) is the air pollution control agency for the South Coast Air Basin (SCAB), which includes all of Orange County, the urban portions of Los Angeles, Riverside and San Bernardino counties. SCAQMD is responsible for controlling emissions primarily from stationary sources of air pollution. SCAQMD develops and adopts an Air Quality Management Plan, which serves as the blueprint to bring this area into compliance with federal and state clean air standards. Rules are adopted to reduce emissions from various sources. Table 7.5-2 shows the air quality significance thresholds established by SCAQMD.

Table. 7.5-2 SCAQMD Air Quality Significance Thresholds.

Pollutant	**Mass Daily Thresholds**	
	Construction	**Operation**
NOx	100 lbs/day	55 lbs/day
VOC	75 lbs/day	55 lbs/day
PM10	150 lbs/day	150 lbs/day
PM2.5	55 lbs/day	55 lbs/day
SOx	150 lbs/day	150 lbs/day
CO	550 lbs/day	550 lbs/day
Lead	3 lbs/day	3 lbs/day

Source: SCAQMD http://www.aqmd.gov/ceqa/handbook/signthres.doc).

7.5.3 Meteorology, Climatology, and Air Quality of the SCAB Region

The Los Angeles River watershed is located in the Los Angeles County portion of SCAB (Figure 7.5-1). The SCAB is bounded by the Pacific Ocean to the west; the San Gabriel, San Bernardino and San Jacinto Mountains to the north and east; and the San Diego County line to the south. Ambient pollution concentrations recorded in Los Angeles County are among the highest in the four counties comprising the SCAB.

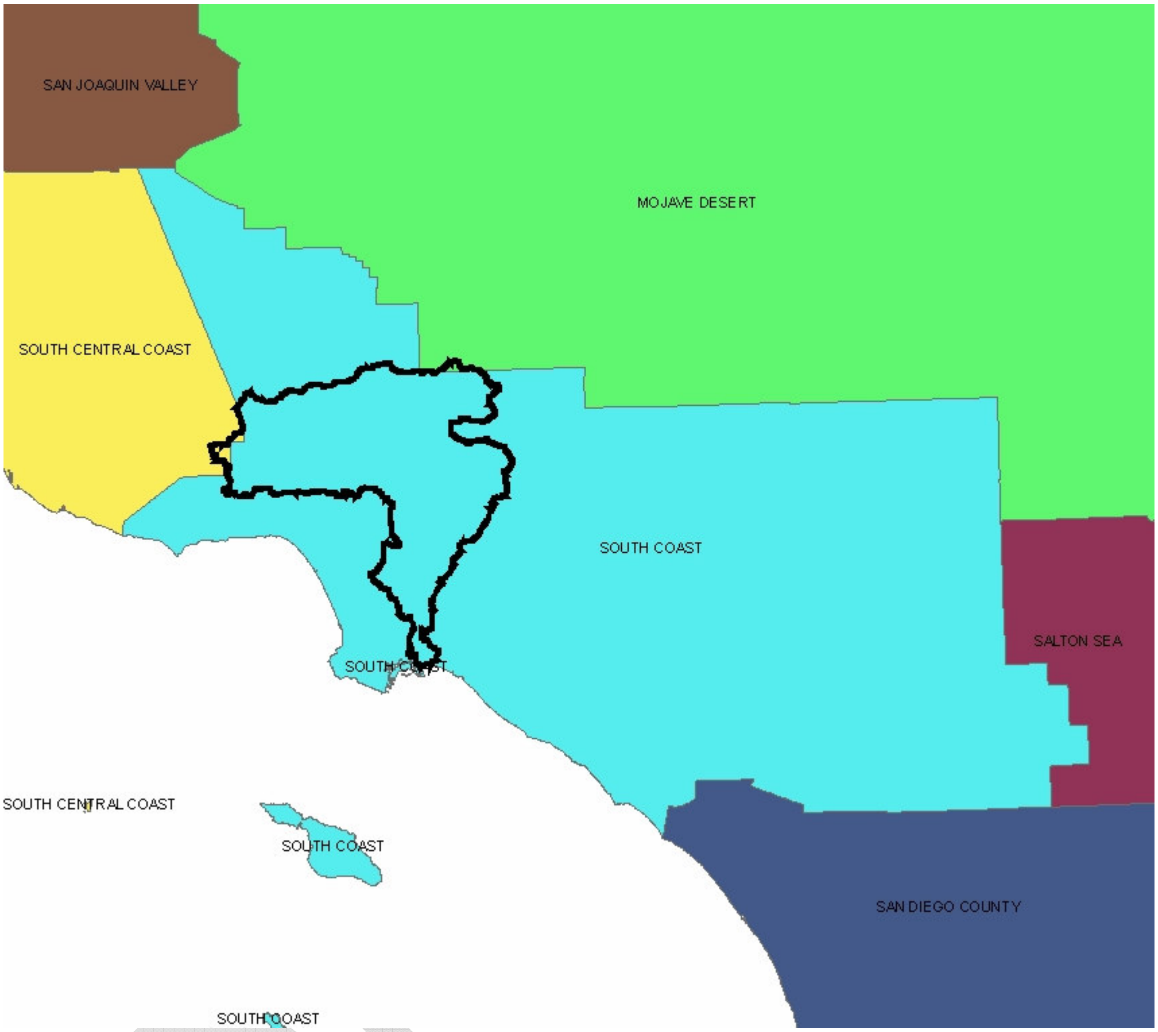


Figure 7.5-1. Los Angeles River Watershed and the South Coast Air Basin

SCAB has high air pollution potential due to its climate and topography. The region lies in the semi-permanent high-pressure zone of the eastern Pacific, resulting in a mild climate tempered by cool sea breezes with light average wind speeds. The SCAB experiences warm summers, mild winters, infrequent rainfalls, light winds, and moderate humidity. This usually mild climatological pattern is interrupted infrequently by periods of extremely hot weather, winter storms, or Santa Ana winds.

The SCAB is a coastal plain with connecting broad valleys and low hills, bounded by the Pacific Ocean to the west and high mountains around the rest of its perimeter. The mountains and hills within the area contribute to the variation of rainfall, temperature, and winds throughout the region. The SCAB experiences frequent temperature inversions. Temperature normally decreases with height. However, under inversion conditions, temperature increases as altitude increases, thereby preventing air close to the ground from mixing with the air above it. As a result, air pollutants are trapped near the ground. During the summer, air quality problems are created due to the interaction between the ocean surface and the lower layer of the atmosphere. This interaction creates a moist marine layer. An upper layer of warm air mass forms over the cool marine layer, preventing air pollutants from dispersing upward. Additionally, hydrocarbons and NO_2 react under strong sunlight, creating smog. Light daytime winds, predominantly from the west, aggravate the condition inland by driving air pollutants east toward the mountains. The mountains act as a barrier trapping the pollutants.

During the fall and winter, air quality problems are created due to CO and NO_2 emissions. CO concentrations are generally worse in the morning and late evening (around 10:00 p.m.). In the morning, CO levels are relatively high due to cold temperatures and the large number of cars commuting. High CO levels during the late evenings are a result of stagnant atmospheric conditions trapping CO in the area.
Because CO is produced almost entirely from motor vehicles, the highest CO concentrations in the SCAB are associated with heavy traffic. NO_2 levels are also generally higher during autumn and winter days. High levels of NO_2 in the fall and winter usually occur on days with summer-like conditions.

The mountains and hills within the SCAB contribute to the variation of rainfall, temperature, and winds throughout the region. Local climatic patterns affect air pollution potential. Within the inland portions of the City of Los Angeles, the average wind speed, as recorded at the Downtown Los Angeles Wind Monitoring Station, is approximately 2.4 miles per hour (mph), with calm winds occurring approximately 7.9 percent of the time. The wind blows predominantly from the southwest. In the San Fernando Valley and along the coast, average wind speed is slightly less than 2.0 mph, with calm winds occurring approximately 13.8 percent of the time. Winds blow predominantly from the west in these areas (.

The annual average temperature in the City of Los Angeles (from 1944 through 2005) was approximately 63 degrees Fahrenheit (°F). Los Angeles experiences an average winter temperature of approximately 57 °F and an average summer temperature of approximately 68 °F. Total precipitation in Los Angeles averaged just over 12 inches annually between 1945 through 2004, with a low annual average of 3.2 inches in 1946, and a high annual average of 29.5 inches in 1983. Precipitation occurs mostly during the winter and relatively infrequently during the summer. Precipitation averages approximately 7 inches during the winter and less than 1 inch during the summer.

In the SCAB, existing background odors are generated by typical urban sources such as vehicle exhaust, landscaping activities, construction and paving activities, restaurants, fireplaces, garbage receptacles, sewer systems, certain industrial and institutional facilities, and photochemical smog (O_3). Because odor concerns tend to be localized around an odor source, the existing setting for odors is most appropriately described for each component.

In 2004, SCAB was designated as non-attainment for ozone, $PM_{2.5}$ and PM_{10}, designated as attainment for nitrogen dioxide, carbon monoxide, sulfur dioxide, sulfates, and lead, and designated as unclassified for nitrogen sulfide and visible reducing particles (see Appendix E).

7.5.4 Thresholds of Significance

A significant air quality impact would occur if the alternative would:
Result in a violation of any State or national ambient air quality standard or contribute substantially to an existing or projected air quality violation. The significance thresholds recommended by the SCAQMD in its CEQA Air Quality Handbook, as revised in November 1993 and approved by the SCAQMD's Board of Directors, are the basis for determining significance of an impact for this project. Construction and operational emissions are considered by the SCAQMD to be significant if they exceed the thresholds identified in Table 7.5-2.

Result in an increase in carbon monoxide concentrations where: (1) an increase in CO concentrations is sufficient to cause an exceedance of the most stringent State or national CO standard (20 ppm for 1-hour concentrations and 9 ppm for 8-hour concentrations); or (2) in an area that already exceeds national or State CO standards, the project increase exceeds 1 ppm for a 1-hour average or 0.45 ppm for an 8-hour average.

In addition, the CEQA Guidelines checklist provides the following thresholds for determining significance with respect to air quality. Air quality impacts would be considered significant if the project:

- Conflicts with or obstructs the implementation of the applicable air quality plan.
- Violates any air quality standards or contributes substantially to an existing or projected air quality violation.
- Exposes sensitive receptors to substantial pollutant concentrations.
- Creates objectionable odors affecting a substantial number of people.
- Results in a cumulatively considerable net increase of any criteria pollutant for which the project region is in non-attainment under any applicable federal or state ambient air quality standard (including releasing emissions that exceed quantitative thresholds for O_3 precursors).

7.5.5 Impacts and Mitigation

<u>Impact Assessment Methodology</u>
This evaluation addresses impacts from Trash TMDL implementation activities, including both short term and long term activities, for all alternatives. The evaluation is based on a calculation of the total emissions from travel of construction and maintenance vehicles that might be affected by implementation of the trash TMDL. This comparative evaluation was done instead of examining the emissions from each individual source alone and comparing them to a threshold level.

<u>Vehicle Emissions</u>
Vehicle emissions are calculated using forecasts of total vehicle miles traveled for each alternative based on data provided in MOBILE6, which is a vehicle emission software developed by USEPA. MOBILE6 is for predicting gram per mile emissions of Hydrocarbons

(HC), Carbon Monoxide (CO), Nitrogen Oxides (NO_x), Carbon Dioxide (CO_2), Particulate Matter (PM), and toxics from cars, trucks, and motorcycles under various conditions. The data which this calculation is based on are from technical documents of MOBILE6. Considering the type of work involved in implementation of the trash TMDL, the calculation assumes that nontampered heavy-duty diesel vehicles (HDDV Class 6) are used for installation/construction/maintenance activities. The mileage is assumed to be 50,000 miles, which is the median mileage for HDDVs. The year of Vehicle is assumed to be 2001+ for HC, CO, NO_x, and SO_2 and 1994+ for PM.

Based on assumptions above, the exhaust emission rates are found to be 2.1, 9.92, and 6.49 grams per mile for HC, CO, and NO_x, respectively. The PM standard for HDDVs is 0.1 g/bhp-hr. By applying a conversion factor of 1.942 bhp-hr/mi (from Update Heavy-Duty Engine Emission Conversion Factors for Mobile6 – Analysis of BSFCs and Calculation of Heavy-Duty Engine Emission Conversion Factors), the exhaust emission rate for PM is found to be 0.1942 grams per mile. There is no exhaust emission rate information available for SO_x in MOBILE6. Instead by using diesel fuel sulfur level of 8 ppm (from MOBILE6 for years after 2006), diesel fuel economy of 8.71 miles per gallon (from Update Heavy-Duty Engine Emission Conversion Factors for Mobile6 – Analysis of BSFCs and Calculation of Heavy-Duty Engine Emission Conversion Factors), and diesel fuel density of 7.099 pounds per gallon (from Update Heavy-Duty Engine Emission Conversion Factors for Mobile6 – Analysis of Fuel Economy, Non-Engine Fuel Economy Improvements and Fuel Densities), we found that the exhaust emission rate for SO_2 could be 0.00592 grams per mile, assuming all sulfur in fuel would be transformed to SO_2.

<u>7.5.5.1 Vortex Separation Systems</u>

<u>Criteria Pollutants.</u> Short term increases in traffic during the construction and installation of VSS devices and long-term increases in traffic caused by ongoing maintenance of these devices (e.g., delivery of materials and deployment of vacuum trucks) are potential sources of increased air pollutant emissions. The TMDL Staff Report estimates that approximately 3700 large capacity vortex separation systems could be installed to collect all the trash generated in the urban portion of watershed. Maintenance requirements for trash removal devices demonstrate that devices should be emptied when they reach 85% capacity. VSS devices can be designed so that they need be cleaned only once per storm season.

The Los Angeles River Watershed covers a land area of over 834 square miles, of which 599 square miles are highly developed with commercial, industrial, or residential uses. The remaining area is covered by forest or open space. Assuming that 3700 vortex separation systems are placed evenly in the 599 square miles developed area, each VSS would cover 0.162 square miles. The distance between 2 VSS units will be about 0.40 mile. The total distance for a truck to travel through all 3700 VSS units will be about 1489 miles. Considering the climate condition in Southern California, VSSs can be cleaned once per storm season, i.e., once per year. There are about 247 business days a year. This translates to approximately 15 vehicle trips per business day in the watershed. Assuming the 15 trips are arranged at shortest distance, the total travel distance for 15 trips will be about 6.0 miles (1489 miles divided by 247 days, or 15 trips times 0.40 mile). The vehicle emissions for traveling 6.0 miles are listed in Table 7.4-3. Emission levels for all the pollutants are far below the SCAQMD Air Quality Significance thresholds. If all trips are conducted in one day, emission levels for all the pollutants are still well below the significance thresholds (Table 7.5-3).

Table 7.5-3: Vehicle Emissions

Device	Trips per day	HC (lbs/day)	CO (lbs/day)	NO (lbs/day)	PM (lbs/day)	SO2 (lbs/day)
VSS	**15***	**0.029**	**0.132**	**0.086**	**0.0026**	**0.000079**
VSS	**3700****	**6.9**	**32.5**	**21.3**	**0.64**	**0.019**
CBI	**21,429***	**0.2**	**1.1**	**0.7**	**0.0**	**0.00068**
CBI	**150,000****	**43.7**	**206.5**	**135.1**	**4.0**	**0.12**

*trips conducted over 247 business days, **trips conducted in a single day

The emissions generated by construction equipments could be lower than the SCAQMD daily construction emissions thresholds. Detailed analysis can only be done at project level. In case that daily construction emission exceeds significance threshold, which is unlikely, construction projects for different VSS units can be conducted on different days to reduce emissions rates.

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, and 3) use of emulsified diesel fuel.

Toxic Air Contaminants**.** Because the emission levels of criteria pollutants during installation and maintenance of VSSs are far below the SCAQMD Air Quality Significance thresholds, the emissions of toxic air contaminants are expected to be far below the its SCAQMD thresholds as well.

Odor Impacts. During construction of the VSS units, it is possible that foul air could be temporarily released to the atmosphere while enclosed sources are uncovered or piping is reconfigured. These releases could create objectionable odors at the nearest receptors. These impacts are temporary and unpleasant odors, if any, will be at minimum with completion of the installation.

VSS devices 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, trash removal devices 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. Notably, the current conditions result in significant impacts from odor, especially following storm events, where tons of upstream trash collects downstream in the Los Angeles River and blankets the Estuary and beaches.

The potential re-suspension of sediments and associated pollutants during construction could also impact air quality. An operations plan for the specific construction and/or maintenance activities could be completed to address the variety of available measures to limit the air quality impacts. These could include vapor barriers and moisture control to reduce transfer of small sediments to air.

To the extent improper disposal of, for instance, household hazardous wastes result in them being trapped in structural compliance measures, and potentially allowing a release of such chemicals, local residents could be exposed to those effects. On balance, however, it is not unfair that the residents of the localities where improper disposal of such materials occurs should suffer those risks rather than allowing the wastes to be conveyed through the Los Angeles River and Estuary, to expose downstream citizens to the cumulative risks of them instead. Those effects are already occurring in the watershed and should be considered baseline impacts. Nevertheless, to the extent the locality that originated the risk would become newly potentially exposed instead of downstream receptors, those impacts could be potentially significant in those locales. Such impacts could be avoided or mitigated by educating the local community of the effects of improper disposal of such wastes, enforcing litter ordinances, and timely cleaning out VSSs.

7.5.5.2 Catch Basin Inserts

Long-term increases in traffic caused by ongoing maintenance of catch basin inserts (e.g., delivery of materials, street sweeping) are potential sources of increased air pollutant emissions.

The TMDL Staff Report estimates that approximately 150,000 catch basins could be retrofitted with inserts in the urban portion of watershed. As discussed previously, the Los Angeles River Watershed has 474 square miles highly developed with commercial, industrial, or residential uses. Assuming that 150,000 catch basin inserts are placed evenly in the 474 square miles developed area, each catch basin insert will cover 0.00316 square miles. The distance between 2 catch basin inserts will be about 0.056 mile. The total distance for a truck to travel through all 150,000 VSS units will be about 8342 miles. Assuming catch basins need to be cleaned twice a year. This translates to approximately 822 vehicle trips per day in the watershed. Assuming the 822 trips are arranged at shortest distance, which is reasonable by arranging a round trip, the total travel distance for 822 trips will be about 52 miles (9497 miles divided by 183 days, or 822 trips times 0.063 mile). The vehicle emissions for traveling 52 miles are listed in Table 7.5-3. Emission levels for all the pollutants are well below the SCAQMD Air Quality Significance thresholds. If all trips are arranged in one day, emission levels for HC, CO, PM, and SO_2 are still well below the significance thresholds. The level for NOx will be about one time higher than the significance threshold level of 55 lbs/day.

As a requirement of the MS4 permit, catch basins are cleaned out on varying schedules at a minimum frequency of once a year. This implementation measure does not require an increase in cleaning frequency above what is already required for existing permits, therefore no significant increase in air emissions is anticipated. Nonetheless, mitigation measures are available to mitigate any potential impacts to air quality due to increased traffic. Mitigation measures could include 1) use of construction, maintenance, and 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, and 5) the design of trash removal devices to minimize the frequency of maintenance trips (e.g., design for smaller drainage areas and adjusting screen size to prevent clogging).

Toxic Air Contaminants**.** Because the emission levels of criteria pollutants during installation and maintenance of catch basin inserts can be below the SCAQMD Air Quality Significance thresholds, the emission of toxic air contaminants is expected to be below the SCAQMD thresholds as well.

Odor Impacts.
To the extent improper disposal of, for instance, household hazardous wastes result in them being kept on the street or in inserts, and potentially allowing a release of such chemicals, local residents could be exposed to those effects. On balance, however, it is not unfair that the residents of the localities where improper disposal of such materials occurs should suffer those risks rather than allowing the wastes to be conveyed through the Los Angeles River and Estuary, to expose downstream citizens to the cumulative risks of them instead. Those effects are already occurring in the watershed and should be considered baseline impacts. Nevertheless, to the extent the locality that originated the risk would become newly potentially exposed instead of downstream receptors, those impacts could be potentially significant in those locales. Such impacts could be avoided or mitigated by educating the local community of the effects of improper disposal of such wastes, enforcing litter ordinances, and timely cleaning out inserts.

7.5.5.3 Trash Nets
Trash nets are end-of-pipe devices. The number of end-of-pipe trash nets installed will be limited by the number of suitable locations within the watershed. Short term increases in traffic during the construction and installation of trash nets and long-term increases in traffic caused by ongoing maintenance of these devices (e.g., replacement of nets) are potential sources of increased air pollutant emissions. After installation, trash nets can be replaced once per year. It is not clear how many trash nets are going to be installed at this point. If the stakeholders make decisions on the numbers of trash nets that are going to be installed, the impacts on air quality caused by installation and maintenance of trash nets could be analyzed at project level. Nevertheless, many fewer trash nets are currently being installed than catch basin inserts, and, anticipating this trend to continue, the impacts of installation and maintenance of trash nets on air quality are expected to be much less than those of catch basin inserts.

Mitigation measures for increased air emissions due to increased vehicle trips or for construction equipment due to the installation of trash nets include: 1) use of construction, and maintenance vehicles with lower-emission engines, 2) use of soot reduction traps or diesel particulate filters, and 3) use of emulsified diesel fuel.

Trash trapped in trash nets may be a source of objectionable odors. Mitigation measures to eliminate odors could include covers, aeration, filters, barriers, and/or odor suppressing chemical additives. During maintenance, odorous sources could be uncovered for as short of a time period as possible. Notably, the current conditions result in significant impacts from odor. The impacts from odor could be mitigated by employing alternative structural devices, such as in-line trash nets, or by employing non-structural controls, for instance, increased litter enforcement.

7.5.5.4 Gross Solids Removal Devices

Short term increases in traffic during the construction and installation of GSRDs and long-term increases in traffic caused by ongoing maintenance of these devices (e.g., replacement of nets) are potential sources of increased air pollutant emissions. Each GSRD was designed to capture annual load of gross solids, which would result in one cleaning per year. GSRDs are currently under pilot studies conducted by Caltrans. It is not clear how many GSRDs are going to be installed at this point. If the stakeholders make decisions on the numbers of GSRDs that are going to be installed, the impacts on air quality caused by installation and maintenance of GSRDs could be analyzed at project level. Nevertheless, many fewer GSRDs are currently being installed than catch basin inserts, and, anticipating these trends to continue, the impacts of installation and maintenance of GSRDs on air quality are expected to be much less than those of catch basin inserts.

Mitigation measures for increased air emissions due to increased vehicle trips or for construction equipment due to the installation of GSRDs include: 1) use of construction, and maintenance vehicles with lower-emission engines, 2) use of soot reduction traps or diesel particulate filters, and 3) use of emulsified diesel fuel.

Trash trapped in GSRDs may be a source of objectionable odors. Mitigation measures to eliminate odors could include covers, aeration, filters, barriers, and/or odor suppressing chemical additives. During maintenance, odorous sources could be uncovered for as short of a time period as possible. The impacts from odor could be mitigated by employing non-structural controls, for instance, increased litter enforcement.

7.5.5.5 Increased Street Sweeping

Increased street sweeping would increase traffic and therefore increase air pollutant emissions. Increased street sweeping would not foreseeably be implemented alone for the trash TMDL. It is not clear how often street sweeping would be increased to fulfill the trash TMDL at this point. If the stakeholders make decisions on the frequency of street sweeping, the impacts on air quality caused by increased street sweeping could be analyzed at project level. Nevertheless, the impacts of increased street sweeping have been included in alternatives, such as catch basin inserts, that may also include increased street sweeping.

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.

7.5.5.6 Enforcement of litter laws

It is possible that it may require more workers and vehicles to enforce litter laws. Air pollutant emissions might be increased due to increased driving to enforce litter laws.

However, the increase in traffic due to enforcement of litter laws is expected to be very limited and would not have a noticeable impact on air quality.

7.5.5.7 Public Education

Similar to enforcement of litter laws, public education is not expected to have noticeable impact on air quality.

All foreseeable methods of compliance listed above would not be of the size or scale to result in alteration of air movement, moisture or temperature, or any change in climate, either locally or regionally.

7.5.6 Summary

Installation and maintenance of structural trash-reduction BMPs could result in potentially significant environmental effects with regard to air quality. However, mitigation measures which can be applied to reduce and/or eliminate these impacts are available as described above. These mitigation measures are within the responsibility and jurisdiction of the responsible agencies in the Trash TMDL and can or should be adopted by them (California Code of Regulations, title 14, section 15091(a)(2)). The Regional Board does not direct which compliance measures responsible agencies choose to adopt nor which mitigation measures they employ. The Regional Board does, however, recommend that appropriate mitigation measures be applied in order that potential environmental impacts be reduced or avoided. It is foreseeable that these mitigation measures may not always be capable of reducing these impacts to levels that are less than significant in every conceivable instance. In the event that a specific mitigation measure or alternative may not reduce impacts to levels that are less than significant, the project proponent may need to consider an alternative strategy or combination of strategies to comply with the TMDL.

7.6 BIOLOGICAL RESOURCES

This section describes the existing plant communities, wildlife habitats, and special status species that occur in the Los Angeles River watershed and the potential impacts to these resources caused by the alternative compliance measures for the Trash TMDL.

7.6.1 Environmental Setting

The Los Angeles River watershed contains several vegetation types and provides habitat for numerous species of animal life. Below are descriptions of the habitats located along the river. There is also a summary of habitat types that have been identified throughout the watershed, a summary of special status species within the urbanized portion of the watershed, and the location of significant ecological areas in the watershed.

7.6.1.1 Description of Habitats, Vegetation Types, and Wildlife

The upper reaches of the Los Angeles River include Sepulveda Basin, a soft-bottomed area that is designed as a flood control basin. The arroyo chub is found in the Sepulveda Basin area, and cannot survive on the flat surfaces on the concrete-lined portions of the Los Angeles River. The thick growth of riparian plants in this area provides habitat for a variety of wildlife. Native oaks grow along stretches of Valleyheart Drive in Studio City and Sherman Oaks. Three native species of fish (the south coast minnow-sucker community) are found in Big Tujunga Creek from Big Tujunga Dam downstream to upper Hansen Dam. These are the Santa Ana sucker (Catastomus santaanae), which is listed as a federally endangered species, the Santa Ana speckled dace (Rhinichthys osculus) and the arroyo chub (Gila orcutti), both of which are State Species of Special Concern.

Glendale Narrows, from Riverside Drive to Arroyo Seco (Figueroa Street), with the longest soft-bottomed segment (seven miles) is designated as open space in the various community general plans. Dense riparian vegetation provides habitat for wildlife including birds, ducks, frogs and turtles. Several small pocket parks are found along this section of the River, many of which were designed by North East Trees (NET), sometimes in partnership with the Mountains Recreation and Conservation Authority (MRCA), such as a small park South and North of Los Feliz Boulevard sometimes referred to as the “Los Angeles RiverWalk” (Dhandha, 2000) and Sunnynook park on the Atwater side, and Rattlesnake Park and Zanja Madre Park on the Silver Lake side. Another example of a pocket park, designed by MRCA, is Knox Park (Ibid.), at the end of Knox Avenue. The riparian vegetation closely mimics the historical “willow sloughs” that once dotted the basin (Cooper, 2000).

The concrete-lined portions of the river support invertebrates, where pockets of algae grow in shallow sheet flow. These areas are favored by shorebirds, particularly during their fall migration (Watershed Characterization Study, 1998).

The nine-mile reach from Atlantic Avenue to the ocean supports some of the most abundant bird life found on the Los Angeles River. The parks, spreading grounds, utility easements and vacant land adjacent to the river provide roosting and feeding habitat. Many species of birds also feed in the concrete channel, where algae grow in the warm, shallow water, and in the estuary South of Willow Street, including fish-eaters like waders (herons, egrets, occidental bitterns and rails), terns, osprey (a fish-eating hawk), pelicans and cormorants.

California Brown Pelican and California Least Tern are Federally Endangered Species (Cooper, 1999).

The water in the estuary pools is deep and slow enough to support an abundant fish community as well. In addition to gobies and tilapia (mostly *Tilapia mozambica*) (MBC, 1999), which are very abundant in the Los Angeles River, especially South of Willow Street, many species of fish are found in the estuary of the Los Angeles River. As an example, the following species have been found between the Ocean boulevard bridge and Queensway Bay bridge: California tonguefish, California halibut, specklefin midshipman, California lizardfish, diamond turbot, barcheek pipefish, and Pacific staghorn sculpin (bottom feeders), as well as white croaker, queenfish, deepbody anchovy, white seaperch, slough anchovy, barred sand bass, shiner perch, California grunion, and striped mullet (midwater feeders, often associated with bottom environment). This area also has harbored some pelagic fish, some of which will venture up an undetermined portion of the estuary: northern anchovy, Pacific sardine, Pacific pompano, Pacific barracuda, topsmelt, jacksmelt, white seabass, barred pipefish, giant kelpfish, and bay pipefish (MBC, 1994).

There are 25 different habitats for the Los Angeles River watershed identified by the Natural History Museum of Los Angeles County (LA River Watershed Characterization Study, 1999). Many of these habitats are located outside of the urbanized portion of the watershed:

- Marine: Not studied.
- Estuary/coastal salt marsh: A potential exists for reestablishment in the Los Angeles and Long Beach Harbors area.
- Coastal dunes: Significant dunes remain only in El Segundo, located north of the watershed.
- Brackish channel water: Exists from the river mouth to two kilometers upstream.
- Wet concrete channel bottom with algal growth: Located in most of the lower river, downstream of the Pasadena freeway and near the Ventura freeway. Contain a richness of invertebrates and are favored by shorebirds.
- Clean concrete channel: Exists within most of the river and are relatively devoid of animal life, vascular plant and algae growth.
- Soft-bottom channel with annually flooded riparian growth: Exists in the Glendale Narrows area with woody plants and willows.
- River bank: Remains along certain flood control basins, including Hanson Dam.
- Freshwater marsh/cienaga: Exist in small patches along the river channel in its soft bottomed reaches, especially in the Glendale Narrows and Sepulveda Basin. Dominated by cattails (Typha) and Bulrush (Scirpus). Habitats in the lowland have largely succumbed to development and flood control projects.
- Open freshwater reservoirs: Include Silver Lake, Encino, Los Angeles Pacoima, and Tujunga. Serve as resting or feeding areas for bird species.
- Floodplain forest: Remnants or reestablished areas occur in the Sepulveda and Hansen flood control basins. This habitat is dominated by willows and cottonwoods with a dense understory of berries, nettle, and other shrubs and vines.
- Riparian woodland of foothill and mountain canyons: Most extensive in areas draining the San Gabriel Mountains in natural portions of the watershed. Alder (Alnus rhombifolia) and Sycamore (Platanus racemosa) along with various willows dominate.

- California walnut woodland: In the Glendale Narrows area and along the Southern flank of the San Fernando Valley.
- Valley oak savanna: Scattered valley oaks remain in the San Fernando Valley. Disturbed remnants are adjacent to the Chatsworth reservoir and within the Sepulveda Basin. The native prairie has been completely eliminated by urbanization and the establishment of exotic grasses and forbs.
- Live oak woodland: Occurs widely in upland areas and foothill canyons in natural portion of the watershed.
- Coastal sage scrub: Largely lost in the watershed.
- Chaparral: Abundant in the San Gabriel Mountains, Verdugo and San Rafael Hills, and Santa Monica Mountains in the natural portions of the watershed.
- Alluvial scrub: Almost completely eliminated by flood control projects and urbanization. Some remaining in Arroyo Seco, Big Tujunga Wash, and in washes draining the San Gabriel Mountains in the natural portions of the watershed.
- Grassland: This habitat has been eliminated from the watershed.
- Big-cone Douglas fir/canyon oak: Exist in the Upper Arroyo Seco and Canyons in undisturbed upper portions of the watershed.
- Mixed coniferous forest: Exist along the Angeles Crest Highway.
- Cliffs: Occur in scatted areas within montane portions of the watershed and provide habitat for various specialized plants and animals.
- Agricultural fields/pasture land: Largely replaced by urbanization.
- Urban/suburban: Include most of the lowland portion of the watershed. Characterized by almost completely exotic flora with extensive ornamental or shade plantings of pines, eucalyptus, and other trees, as well as innumerable exotic shrubs. Some native animal species adapt well to channelization of the river, while most do not.
- Aerial: Occurs widely throughout the watershed and supports populations of aerial feeding insectivorous such as bats, swifts, and swallows as well as migrating birds and for dispersal of certain arthropods and plants.

Few native vegetation types remain in the watershed except in the upper watershed in the Angeles National Forest (LASGRWC, 2001).

7.6.1.2 Special Status Species

A list of special status species in the watershed was obtained from the California Natural Diversity Database maintained by the California Department of Fish and Game (CDFG, 2006). Special-status species within the watershed include plants or wildlife listed as candidate, threatened, or endangered under the federal Endangered Species Act (ESA) or the California Endangered Species Act (CESA). They also include wildlife listed as Species of Special Concern by the CDFG and plant species designated by the California Native Plant Society (CNPS) as presumed extinct in California (List 1A), as rare, threatened, or endangered in California and elsewhere (List 1B), and as rare, threatened, or endangered in California but more common elsewhere (List 2).

The special-status plant and animal species in the watershed are presented in Table 7.6-1. This is an extensive list resulting from a broad search of the database. These species are located throughout the watershed and may not be present in the urbanized portion of the watershed, which is the portion potentially impacted by implementation of the TMDL.

Table 7.6-1. Special Status Species in Los Angeles River watershed.

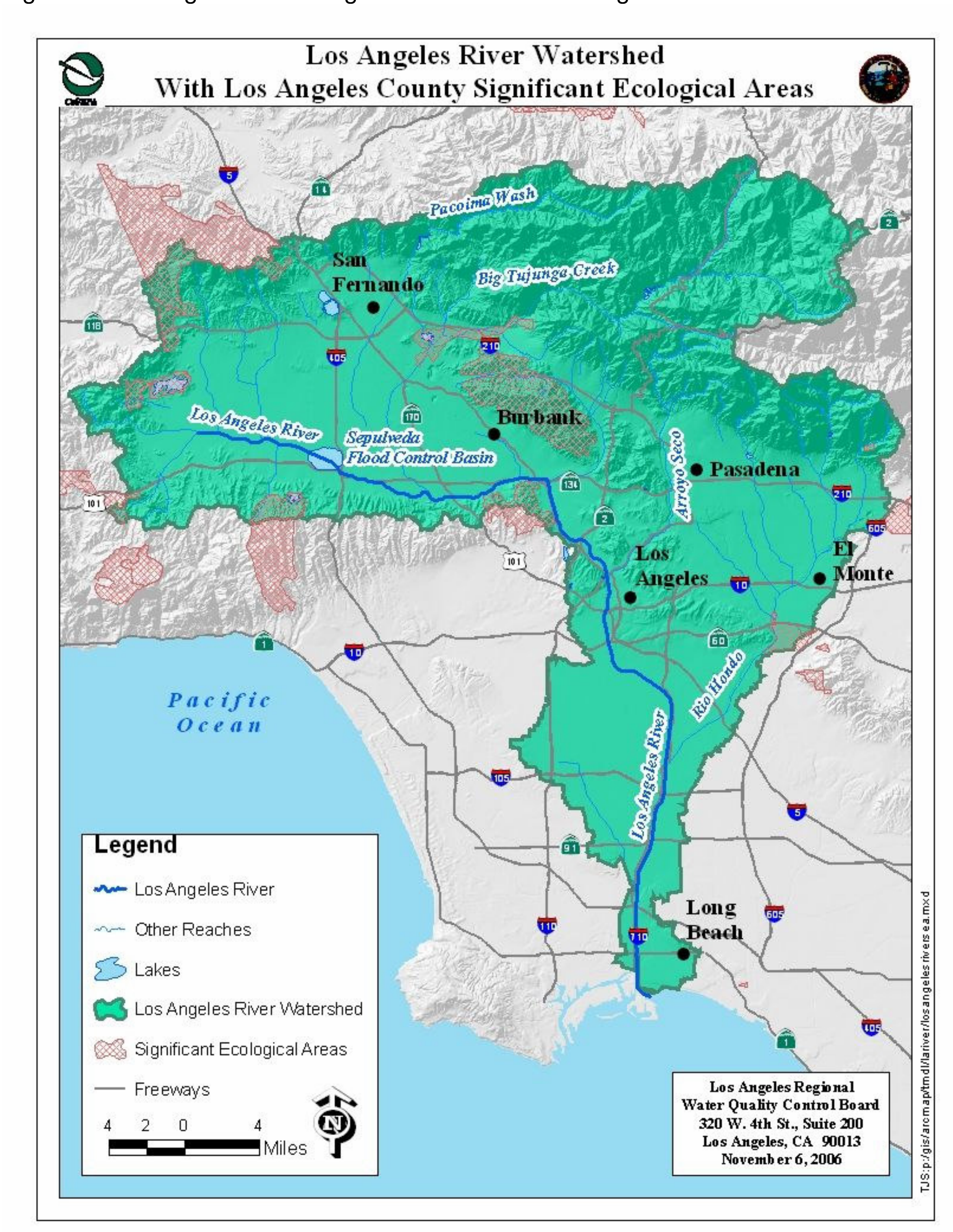
Species		Status			
Scientific Name	**Common Name**	**Federal**	**State**	**CDFG**	**CNPS**
Dudleya multicaulis	many-stemmed dudleya				1B.2
Calochortus clavatus var. gracilis	slender mariposa lily				1B.2
Erodium macrophyllum	round-leaved filaree				2.1
Nolina cismontana	chaparral nolina				1B.2
Agelaius tricolor	tricolored blackbird			SC	
Astragalus brauntonii	Braunton's milk-vetch	Endangered			1B.1
Bufo californicus	arroyo toad	Endangered		SC	
California Walnut Woodland	California Walnut Woodland				
Chorizanthe parryi var. fernandina	San Fernando Valley spineflower	Candidate	Endangered		1B.1
Deinandra minthornii	Santa Susana tarplant		Rare		1B.2
Dudleya blochmaniae ssp. blochmaniae	Blochman's dudleya				1B.1
Antrozous pallidus	pallid bat			SC	
Coccyzus americanus occidentalis	western yellow-billed cuckoo	Candidate	Endangered		
Emys (=Clemmys) marmorata pallida	southwestern pond turtle			SC	
Phacelia stellaris	Brand's phacelia	Candidate			1B.1
Polioptila californica californica	coastal California gnatcatcher	Threatened		SC	
Ribes divaricatum var. parishii	Parish's gooseberry				1B.1
Scutellaria bolanderi ssp. austromontana	southern skullcap				1B.2
Vireo bellii pusillus	least Bell's vireo	Endangered	Endangered		
Calystegia sepium ssp. binghamiae	Santa Barbara morning-glory				1A
Carolella busckana	Busck's gallmoth				
Atriplex parishii	Parish's brittlescale				1B.1
Centromadia parryi ssp. australis	southern tarplant				1B.1
Cicindela hirticollis gravida	sandy beach tiger beetle				
Cicindela latesignata latesignata	tiger beetle				
Cordylanthus maritimus ssp. maritimus	salt marsh bird's-beak	Endangered	Endangered		1B.2
Danaus plexippus	monarch butterfly				
Nemacaulis denudata var. denudata	coast woolly-heads				1B.2
Orcuttia californica	California Orcutt grass	Endangered	Endangered		1B.1
Pelecanus occidentalis californicus	California brown pelican	Endangered	Endangered		
Pentachaeta lyonii	Lyon's pentachaeta	Endangered	Endangered		1B.1
Perognathus longimembris pacificus	Pacific pocket mouse	Endangered		SC	
Sterna antillarum browni	California least tern	Endangered	Endangered		
Suaeda esteroa	estuary seablite				1B.2
Aster greatae	Greata's aster				1B.3
Athene cunicularia	burrowing owl			SC	
Atriplex serenana var. davidsonii	Davidson's saltscale				1B.2
Calochortus plummerae	Plummer's mariposa lily				1B.2
Empidonax traillii extimus	southwestern willow flycatcher	Endangered	Endangered		
Eumops perotis californicus	western mastiff bat			SC	
Helianthus nuttallii ssp. parishii	Los Angeles sunflower				1A
Horkelia cuneata ssp. puberula	mesa horkelia				1B.1
Linanthus orcuttii	Orcutt's linanthus				1B.3

Species		Status			
Scientific Name	**Common Name**	**Federal**	**State**	**CDFG**	**CNPS**
Navarretia prostrata	prostrate navarretia				1B.1
Nyctinomops macrotis	big free -tailed bat			SC	
Phrynosoma coronatum	Coast (San Diego) horned lizard			SC	
Taxidea taxus	American badger			SC	
Walnut Forest	Walnut Forest				
Charina trivirgata	rosy boa				
Cypseloides niger	black swift			SC	
Galium grande	San Gabriel bedstraw				1B.2
Lepidium virginicum var. robinsonii	Robinson's pepper-grass				1B.2
Open Engelmann Oak Woodland	Open Engelmann Oak Woodland				
Thamnophis hammondii	two-striped garter snake			SC	
Thelypteris puberula var. sonorensis	Sonoran maiden fern				2.2
Neotoma lepida intermedia	San Diego desert woodrat			SC	
Southern Willow Scrub	Southern Willow Scrub				
Valley Oak Woodland	Valley Oak Woodland				
Chorizanthe parryi var. parryi	Parry's spineflower				3.2
Falco peregrinus anatum	American peregrine falcon	Delisted	Endangered		
Lasiurus xanthinus	Western yellow bat				
Onychomys torridus ramona	southern grasshopper mouse			SC	
Taricha torosa torosa	Coast Range newt			SC	
Aspidoscelis tigris stejnegeri	coastal western whiptail				
Berberis nevinii	Nevin's barberry	Endangered	Endangered		1B.1
Catostomus santaanae	Santa Ana sucker	Threatened		SC	
Dodecahema leptoceras	slender-horned spineflower	Endangered	Endangered		1B.1
Malacothamnus davidsonii	Davidson's bush mallow				1B.2
Rana muscosa	mountain yellow-legged frog	Endangered		SC	
Riversidian Alluvial Fan Sage Scrub	Riversidian Alluvial Fan Sage Scrub				
Southern Cottonwood Willow Riparian	Southern Cottonwood Willow Riparian				
Southern Sycamore Alder Riparian	Southern Sycamore Alder Riparian				
Anniella pulchra pulchra	silvery legless lizard			SC	
Aspidoscelis hyperythra	orange-throated whiptail			SC	
Gila orcuttii	arroyo chub			SC	
Lepus californicus bennettii	San Diego black-tailed jackrabbit			SC	
Rhinichthys osculus ssp. 3	Santa Ana speckled dace			SC	
Arroyo Chub/Santa Ana Sucker Stream	Arroyo Chub/Santa Ana Sucker Stream				
Southern Mixed Riparian Forest	Southern Mixed Riparian Forest				
Lasthenia glabrata ssp. coulteri	Coulter's goldfields				1B.1
Spea (=Scaphiopus) hammondii	western spadefoot			SC	

7.6.1.3 Significant Ecological Areas

Los Angeles County has designated sixty significant ecological areas (SEAs), which provide unique habitats for plant and animal species (Figure 7.6-1).

Figure 7.6-1: Significant Ecological Areas in the Los Angeles River Watershed



7.6.2 Thresholds of Significance

According to Appendix G of the State CEQA Guidelines, a project would normally have a significant effect on a biological resource if it would:

- Have a substantial adverse effect, either directly or through habitat modifications, on a species identified as a candidate, sensitive, or special status species in local or regional plans, policies or regulations, or by the California Department of Fish Game (CDFG) or the U.S. Fish and Wildlife Service (USFWS);

- Have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, regulations or by the CDFG or USFWS;

- Have a substantial adverse effect on federally protected wetlands as defined by Section 404 of the CWA (including, but not limited to marsh, riparian scrub, etc.) through direct removal, filling, hydrological interruption, or other means;

- Interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites;

- Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance; or

- Conflict with the provision of an adopted Habitat Conservation Plan, Natural Community Conservation Plan or other approved local, regional, or state habitat conservation plan.

7.6.3 Environmental Impacts and Mitigation Measures for Alternatives

This section presents potential impacts to biological resources related to the implementation of the Los Angeles River Trash TMDL. Potential impacts are evaluated for each alternative method of compliance, including structural devices, institutional controls, and public education. Additionally, mitigation measures are identified, where applicable, and potential impacts after mitigation are provided.

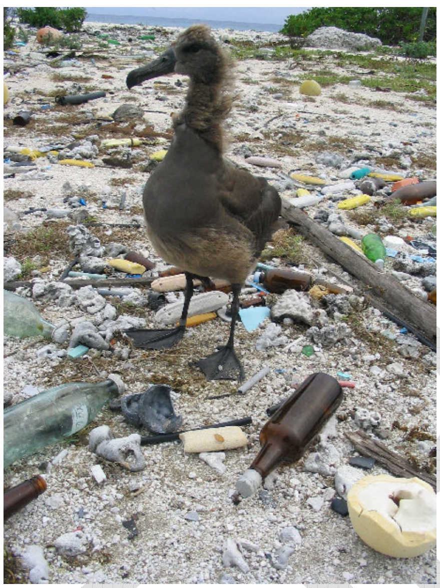
This is a program-level analysis of the potential impacts from each alternative. The specific location of each alternative would be determined during the implementation of the Trash TMDL. In general, the activities that will take place with the implementation of the full capture and/or partial capture trash control devices will be similar in nature to current urban activities that are already occurring in the watershed. The implementation of additional trash control measures 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.

Implementation of the TMDL will eliminate the significant water quality problems caused by trash in waterways. Small and large floatables can inhibit the growth of aquatic vegetation, decreasing spawning areas and habitats for fish and other living organisms. Wildlife living in rivers and in riparian areas can be harmed by ingesting or becoming entangled in floating trash. Settleables can be a problem for bottom feeders and can contribute to sediment contamination. Removing trash from the river will have an overall positive impact on biological resources.

Figure 7.6-2: Bird foraging among trash on the beach



7.6.3.1 Vortex Separation Systems

Vortex separation systems would be implemented in currently urbanized areas. Because these areas are already fully urbanized it is unlikely that the installation of vortex separation systems would cause the removal, disturbance or change in diversity of any plant species or cause a change or reduction in the number of any unique, rare or endangered species of plants. However, depending on the final location of facilities, potential impacts to biological resources including special-status species and habitat, wetlands, and trees protected under local ordinances or policies could occur where facilities are located.

It is not reasonably foreseeable that implementation of vortex separation systems would result in the introduction of exotic or invasive plant species into an area. Nor will it result in a barrier to the normal replenishment of existing species. However, in the case that landscaping is incorporated into the specific project design, there is a possibility of disruption of resident native species.

Based on the California Department of Conservation Division of Land Resources Protection Farmland Mapping and Monitoring Program Important Farmland in California, 2002 there is no Prime Farmland, Farmland of Statewide Importance, Unique Farmland or Farmland of Local Importance in the Los Angeles River watershed. However, it is known that there is limited agriculture crop production in the watershed. It is not expected that vortex separation systems will be placed in any area currently engaged in crop production, but will be implemented in already highly urbanized areas and would have no foreseeable impact on the acreage of any agricultural crop.

It is possible that direct or indirect impacts to special-status animal species may occur at the project level. Because these 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 what would generally be described as urban areas. If these species are present during activities such as ground disturbance, construction, and 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

It is not reasonably foreseeable that implementation of vortex separation systems 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 considered unlikely that vortex separation systems would be constructed in areas such as these.

However, constructed vortex separation systems 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 vortex separation systems 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.

It is not reasonably foreseeable that the implementation of vortex separation systems will result in the deterioration of existing fish and or wildlife habitat. Potential vortex separation systems will be located in previously developed areas and would not result in the removal of sensitive biological habitats.

Vortex separation systems would not be located within the river channel, but rather in the storm drain itself. As such, a foreseeable deterioration of existing fish habitat is not anticipated. It is foreseeable, however, that the implementation of the Los Angeles River Trash TMDL will considerably improve fish habitat by removing trash from the Los Angeles River and Estuary, as well as the surrounding beaches.

The following mitigation measures should be implemented to reduce or avoid potential project-level impacts to biological resources:

Assuming any unique species are present, plant number and species diversity could be maintained by either preserving them prior, during, and after the construction of vortex separation systems or by re-establishing and maintaining the plant communities post construction.

When the specific projects are developed and sites identified, a search of the California Natural Diversity Database could be employed to confirm that any potentially sensitive plant species or biological habitats in the site area are properly identified and protected as necessary. Focused protocol plant surveys for special-status-plant species could be conducted at each site location, if appropriate. If sensitive plant species occur on the project site mitigation would 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, or siting physical compliance measures sufficiently upstream or downstream of sensitive areas to avoid any impacts..

In the case that landscaping is incorporated into the specific project design, the possibility of disruption of resident native species could be avoided or minimized by using only plants native to the area. Use of exotic invasive species or other plants listed in the Exotic Pest Plant of Greatest Ecological Concern in California should be prohibited (CalEPPC, 1999).

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 such measures as enforcing litter ordinances 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 would be conducted. The surveys should extend 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 buffer area mitigation would be required under the ESA. To this extent mitigation measures would be developed with the USFWS and CDFG to reduce potential impacts. Mitigation can include angling nighttime lighting 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.

If vortex separation systems 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 enforcing litter ordinances in sensitive areas. No significant impact is anticipated after mitigation.

7.6.3.2 Catch Basin Inserts

Catch basin inserts fit directly into curbside catch basins in urbanized areas where native habitat or special-status species usually are absent. As such, impacts to biological resources would be avoided, including impacts to species diversity, impacts to special-status species, impacts to habitat, or impacts to wildlife migration. Furthermore, installation of catch basin inserts requires no construction or ground disturbance which could impact biological resources.

The City Manager from the city of Downey suggested at the June 28, 2006 CEQA scoping meeting that storm drain screens would create significant adverse impacts in that they would serve as a barrier to raccoons that have been known to use the storm drains as travel routes. The representative also stated that such instances have not been frequently noted. There is no evidence that raccoons “migrate” through the storm drains, nor is there evidence that their transit through some storm drains is commonplace or even beneficial.

Implementation of the Los Angeles River Trash TMDL and the use of catch basin inserts will considerably improve biological resources by removing trash from the Los Angeles River and Estuary, as well as the surrounding beaches. No mitigation is required since no impact is anticipated.

.

7.6.3.3 Trash Nets

Trash nets are installed within the storm drain systems either inline or at the end of pipe in urbanized areas where native habitat or special-status species usually are absent. As such, impacts to biological resources would be avoided, including impacts to species diversity, impacts to special-status species, impacts to habitat, or impacts to wildlife migration. Trash nets used for the purposes of compliance with the Trash TMDL would not be located within the river channel, but rather in the storm drain itself and would not result in a foreseeable deterioration of existing fish habitat. Furthermore, installation of trash nets requires minimal construction and no ground disturbance which could impact biological resources. No mitigation is required since no impact is anticipated.

7.6.3.4 Gross Solids Removal Devices (GSRDs)

Like vortex separation systems, gross solids removal devices are inline structural trash removal devices that are implemented in urbanized areas. As such, the project-level impacts on biological resources due to implementation of gross solids removal devices would be similar to the project-level impacts associated with vortex separation systems.

The proposed mitigation measures for gross solids removal devices would be similar to the proposed mitigation measures for vortex separation systems. No impact is anticipated after mitigation.

7.6.3.5 Enforcement of Litter Laws

Enforcement of litter laws would involve no change to the physical environment either directly or indirectly and would have no impact on biological resources. Complying with existing statewide and local litter laws and ordinances would eliminate the substantial adverse environmental impacts from the litter, and the need for additional controls that could potentially generate their own nominal biological impacts. No mitigation is required since no impact is anticipated.

7.6.3.6 Increased Street Sweeping and Storm Drain Cleaning

Increased street sweeping and storm drain cleaning would involve no direct change to the physical environment. Indirect impacts could include an increase in ambient noise levels, but this would not result in a significant impact to general wildlife species adapted to developed environments. No mitigation is required since no impact is anticipated.

7.6.3.7 Public Education

Public education would involve no change to the physical environment either directly or indirectly and would have no impact on biological resources. Successful public education strategies would eliminate the substantial adverse environmental impacts from the litter, and the need for additional structural controls that generate their own nominal biological impacts. No mitigation is required since no impact is anticipated.

7.7 Coastal Resources

This section describes the existing coastal resources that occur in the Los Angeles River watershed and the potential impacts to these resources caused by the alternative compliance measures for the Trash TMDL.

7.7.1 Description of Coastal Resources

The Los Angeles River and its watershed drain into the San Pedro Channel Basin (Los Angeles Harbor). The harbor and surrounding coastal areas are used year round for recreational activities such as boating, surfing, swimming, fishing, and beach going. Approximately 150 million to 400 million visits are made to California beaches each year, which generates billions of dollars in tourism expenditures and non-market values enjoyed mostly by local area residents (Pendleton, 2001). Tourism contributed $7.1 billion to the Los Angeles County economy in 1998, with beach visitation being the second most popular tourist activity (Schiff et al. 2000a). The Southern California Bight and its coastal environment has been estimated to generate up to $9 billion per year in revenues from recreational uses (Schiff et al., 2000b). The coastal area is also home to a variety of aquatic, avian, and other coastal species, with some being threatened or endangered and living in sensitive habitats. A small part of the urbanized portion of the watershed is located in the Coastal Zone.

The California Coastal Act (CCA), enacted in 1976, is the Coastal Zone Management Program for California. The CCA (Public Resources Code §30000 et seq.) exists to "protect, maintain, and where feasible, enhance and restore the overall quality of the coastal zone environment and its natural and artificial resources" (Public Resources Code §30001.5). The coastal zone extends from the California/Oregon border to the California/Mexico border, seaward to the end of the jurisdictional waters of the United States, including all offshore islands, and inland generally 1,000 yards (Public Resources Code §30103).

The coastal resources protected by the CCA include:

- Coastal Zone access (including beach access)
- Coastal recreation (boating and water-oriented activities)
- Marine environment (biological productivity and protection of human health)
- Land resources in the Coastal Zone (sensitive habitats)

Figure 7.7-1 outlines the coastal zone within the Los Angeles River Watershed. Trash in waterways causes significant impacts to coastal resources. Floating debris that is not trapped and removed will eventually end up on the beaches or in the open ocean, repelling visitors away from our beaches and degrading coastal waters. For example, Long Beach collects several thousand tons of trash each year at the mouth of the Los Angeles River.

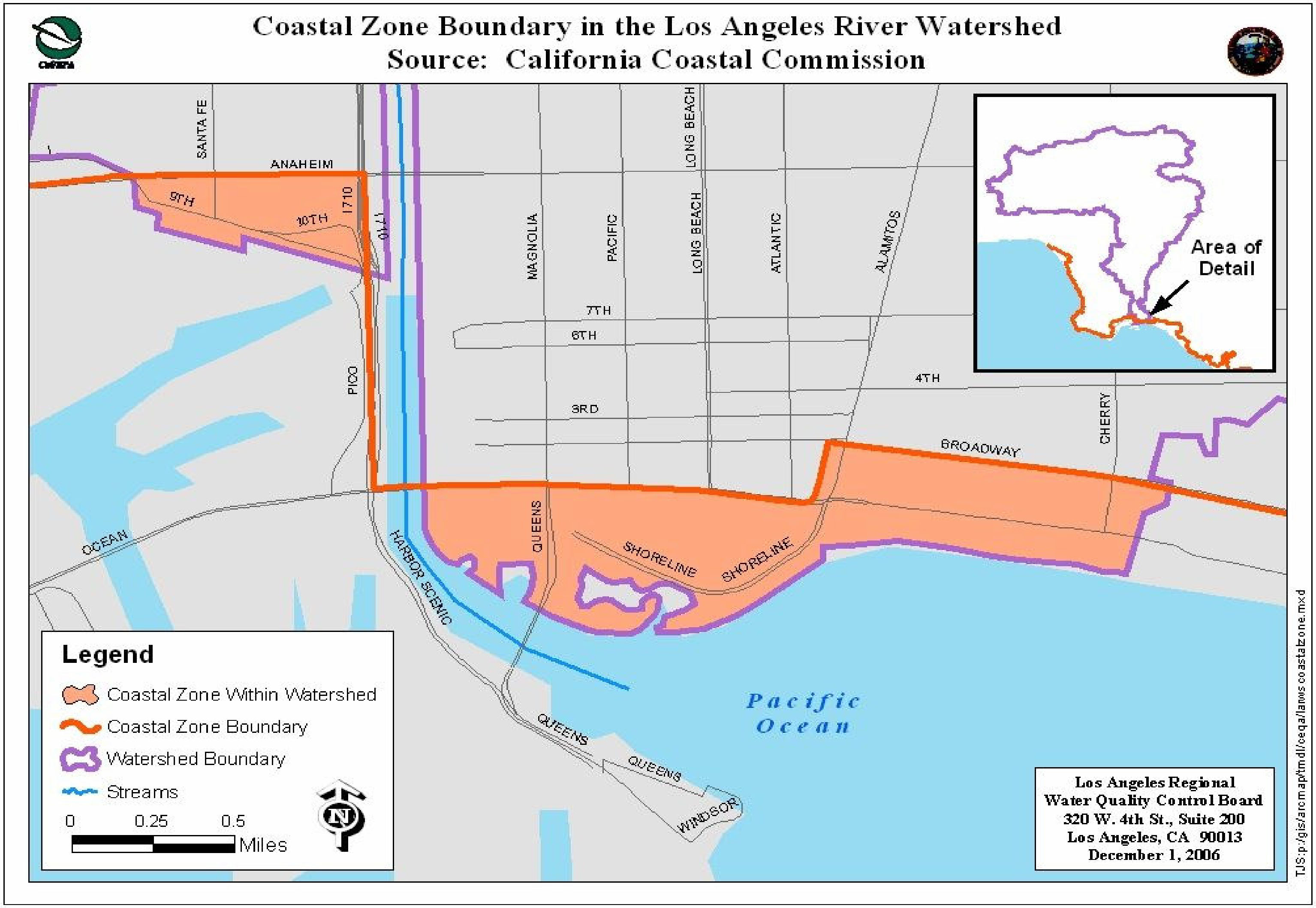


Figure 7.7-1: Coastal Zone Boundary in the Los Angeles River Watershed

Figure 7.7-2: Trash in Long Beach after a storm, Los Angeles Times photo, 2001

Los Angeles Times Photo. By Rick Meyer (January 22, 2001)

7.7.2 Thresholds of Significance

A significant impact to coastal zone management would occur if the direct and indirect changes in the environment that may be caused by the alternative would potentially result in one or more of the following future conditions:

- Damage to the overall quality of the coastal zone environment and its natural and artificial resources.
- Disorderly, unbalanced utilization and conservation of coastal zone resources.
- Elimination of public access to and along the coast by vehicle, bicycle, or foot; or restriction of public recreational opportunities in the coastal zone.

7.7.3 Environmental Impacts and Mitigation Measures for Alternatives

This section presents potential impacts to coastal resources related to the implementation of the Los Angeles River Trash TMDL. Potential impacts are evaluated for each alternative method of compliance, including structural devices, institutional controls, and public education. Additionally, mitigation measures are identified, where applicable, and potential impacts after mitigation are provided.

This is a program-level analysis of the potential impacts from each alternative. The specific location of each alternative would be determined during the implementation of the Trash TMDL.
In general, the activities that will take place with the implementation of the full capture and/or partial capture trash control devices will be similar in nature to current urban activities already occurring in the watershed and the coastal zone. The implementation of additional trash control measures will not foreseeably obstruct Coastal Zone access or recreation or affect the marine environment or Coastal Zone habitats.

Implementation of the TMDL will eliminate the significant water quality problems caused by trash in waters of the Coastal Zone. Removing trash from the river will have a positive impact on coastal resources.

7.7.3.1 Vortex Separation Systems

Vortex separation systems could be located in the Coastal Zone. However, these systems would be constructed within the existing storm drain system and would not affect existing coastal access, recreation, resources, or sensitive habitats. In addition, after trash has been removed, the water would be discharged to the ocean or storm drain system. Because the trash-free water would meet discharge permit requirements, this component would result in improved quality of coastal resources. Construction of vortex separation systems could result in additional traffic and minor delays in accessing coastal resources; however these delays would not be permanent or substantial temporary impacts because the resources would still be accessible.

All construction activities would be required to retain sediments on site, either under a general construction storm water permit or through the construction program of the applicable MS4 permit. Consequently, potential secondary impacts of sediment loading to the marine environment due to construction would be less than significant.

To the extent that construction of vortex separation systems could cause minor delays in accessing coastal resources, these impacts could be mitigated through implementation of a construction management plan. 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. No impact is anticipated after mitigation.

7.7.3.2 Catch Basin Inserts

Catch basin inserts fit directly into curbside catch basins and would not affect existing coastal access, recreation, resources, or habitats. Furthermore, installation of catch basin inserts requires no construction or ground disturbance, which could impact access to coastal resources or cause potential sediment loading to the marine environment.

Implementation of the Los Angeles River Trash TMDL and the use of catch basin inserts will considerably improve coastal resources by removing trash from the Estuary, Harbor, and surrounding beaches and coastal areas. No mitigation is required since no impact is anticipated.

7.7.3.3 Trash Nets

Trash nets are installed within the storm drain systems either inline or at the end of pipe and would not affect existing coastal access, recreation, resources, or habitats. Trash nets used for the purposes of compliance with the Trash TMDL would not be located within the river channel, but rather in the storm drain itself and would not result in foreseeable impacts to coastal resources at the mouth of the river. Furthermore, installation of trash nets requires minimal construction and no ground disturbance which could impact access to coastal resources or cause potential sediment loading to the marine environment. No mitigation is required since no impact is anticipated.

7.7.3.4 Gross Solids Removal Devices (GSRDs)

Like vortex separation systems, gross solids removal devices are inline structural trash removal devices that are implemented in urbanized areas. As such, the project-level impacts on coastal resources due to implementation of gross solids removal devices would be similar to the project-level impacts associated with vortex separation systems.

The proposed mitigation measures for gross solids removal devices would be similar to the proposed mitigation measures for vortex separation systems. No impact is anticipated after mitigation.

7.7.3.5 Enforcement of Litter Laws

Enforcement of litter laws would involve no change to the physical environment either directly or indirectly and would have no impact on coastal resources. Complying with existing statewide and local litter laws and ordinances would eliminate the substantial adverse environmental impacts from the litter, and the need for additional controls that could potentially generate their own nominal coastal resource impacts. No mitigation is required since no impact is anticipated.

7.7.3.6 Increased Street Sweeping and Storm Drain Cleaning

Increased street sweeping and storm drain cleaning would involve no direct change to the physical environment. Increased street sweeping and storm drain cleaning could result in additional traffic and minor delays in accessing coastal resources; however these delays would not be substantial impacts because the resources would still be accessible.

Furthermore, the majority of increased street sweeping and storm drain cleaning would occur outside of the Coastal Zone because the majority of the watershed is located outside of the coastal zone.

To the extent that increased street sweeping and storm drain cleaning would cause increased traffic and delays in accessing coastal resources, cleanings could be scheduled to coincide with residential and commercial trash pickup schedules to decrease added vehicle trips. No impact is anticipated after mitigation.

7.7.3.7 Public Education

Public education would involve no change to the physical environment either directly or indirectly and would have no impact on coastal resources. Successful public education strategies would eliminate the substantial adverse environmental impacts from the litter, and the need for additional structural controls that generate their own nominal coastal resource impacts. No mitigation is required since no impact is anticipated.

7.8 CULTURAL RESOURCES

This section describes the existing historic and archaeological resources that occur in the urbanized portion of the Los Angeles River watershed and the potential impacts to these resources caused by the alternative compliance measures for the Trash TMDL.

7.8.1 Historic Resources

A historical resource is a resource listed in or eligible for listing in the California Register of Historical Resources. The California Register includes resources on the National Register of Historic Places, as well as California State Landmarks and Points of Historical Interest. Properties that meet the criteria for listing also include districts which reflect California's history and culture, or properties which represent an important period or work of an individual, or yield important historical information (Ibid.). Properties of local significance that have been designated under a local preservation ordinance (local landmarks or landmark districts) or that have been identified as local historical resources are also included in the California Register (California Office of Historical Preservation, 2006).

A historical records and literature search was conducted via the South Central Coastal Information Center at California State University, Fullerton. A broad search was conducted for properties within the Los Angeles River watershed, including a review of the California Points of Historical Interest, the California Historical Landmarks, the California Register of Historic Places, the National Register of Historic Places, and locally designated landmarks. Figure 7.8-1 includes properties within the LA River watershed which were listed as a California Historical Resource, or properties eligible for listing.

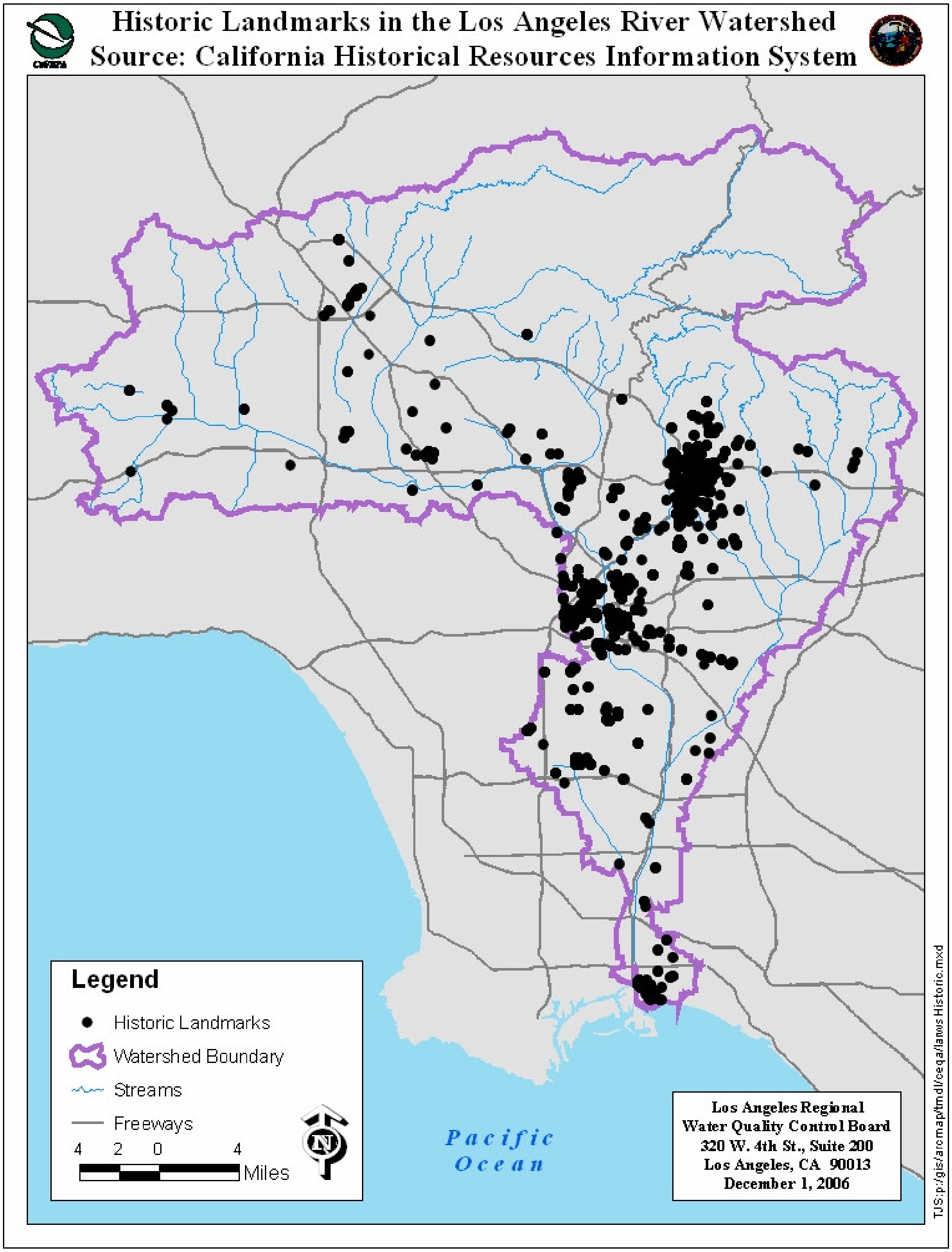
7.8.2 Archeological Resources

An archeological site may be considered an historical resource if it is significant in the architectural, engineering, scientific, economic, agricultural, educational, social, political, military or cultural annals of California (PRC Section 5020.1(j)) or if it meets the criteria for listing on the California Register (14 CCR Section 4850).

If an archeological site is not an historical resource, but meets the definition of a "unique archeological resource" as defined in PRC Section 21083.2, then it should be treated in accordance with the provisions of that section.

An archaeological records and literature search was conducted via the South Central Coastal Information Center at California State University, Fullerton. However, unlike properties listed on the Historical Register, access to exact locations of archaeological resources is unavailable to the public, since these sites are considered nonrenewable resources. Therefore, there were no archaeological sites included within Figure 7.8-1.

Figure 7.8-1: Historic resources within the Los Angeles River Watershed



7.8.2 Thresholds of Significance

Section 15064.5(b) of the State CEQA Guidelines, entitled "Determining the Significance of Impacts on Historical and Unique Archaeological Resources," would apply to historical resources that are found eligible for the California Register or meet the other significance criteria in Section 15064.5(a) of the guidelines. Section 15064.5(b) of the guidelines is as follows:

A project with an effect that may cause a substantial adverse change in the significance of an historical resource is a project that may have a significant effect on the environment.

- Substantial adverse change in the significance of an historical resource means physical demolition, destruction, relocation, or alteration of the resource or its immediate surroundings such that the significance of an historical resource would be materially impaired.
- The significance of an historical resource is materially impaired when a project:
- a. Demolishes or materially alters in an adverse manner those physical characteristics of an historical resource that convey its historical significance and that justify its inclusion in, or eligibility for, inclusion in the California Register of Historical Resources; or
- b. Demolishes or materially alters in an adverse manner those physical characteristics that account for its inclusion in a local register of historical resources pursuant to section 5020.1(k) of the Public Resources Code or its identification in an historical resources survey meeting the requirements of section 5024.1(g) of the Public Resources Code, unless the public agency reviewing the effects of the project establishes by a preponderance of evidence that the resource is not historically or culturally significant; or
- c. Demolishes or materially alters in an adverse manner those physical characteristics of a historical resource that convey its historical significance and that justify its eligibility for inclusion in the California Register of Historical Resources as determined by a lead agency for purposes of CEQA

7.8.3 Environmental Impacts and Mitigation Measures for Alternatives

This section presents potential impacts to cultural resources related to the implementation of the Los Angeles River Trash TMDL. Potential impacts are evaluated for each alternative method of compliance, including structural devices, institutional controls, and public education. Additionally, mitigation measures are identified, where applicable, and potential impacts after mitigation are provided.

This is a program-level analysis of the potential impacts from each alternative. The specific location of each alternative would be determined during the implementation of the Trash TMDL.

7.8.3.1 Vortex Separation Systems

Vortex separation systems would be installed in currently urbanized areas where ground disturbance has previously occurred. Because these areas are already fully urbanized it is unlikely that their implementation 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. Paleontological resources can be found in areas of the watershed containing fossil-bearing formations. Archaeological resources have been found within the urbanized portion of the watershed. Historic and architectural resources have also been found within the urbanized portion of the watershed. The site-specific presence or absence of these resources is unknown because the specific locations for vortex separation systems 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 vortex separation systems, 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). No impact is anticipated after mitigation.

7.8.3.2 Catch Basin Inserts

Catch basin inserts fit directly into curbside catch basins in urbanized areas and require no construction or ground disturbance. There is therefore no potential to impact cultural resources from this alternative means of compliance. No mitigation is required since no impact is anticipated.

7.8.3.3 Trash Nets

Trash nets are installed within the storm drain system either inline or at the end of pipe. Installation requires no ground disturbance which might impact cultural resources. No mitigation is required since no impact is anticipated.

7.8.3.4 Gross Solids Removal Devices (GSRDs)

Like vortex separation systems, gross solids removal devices are inline structural trash removal devices that are implemented in urbanized areas. As such, the project-level impacts on cultural resources due to implementation of gross solids removal devices would be similar to the project-level impacts associated with vortex separation systems.

The proposed mitigation measures for gross solids removal devices would be similar to the proposed mitigation measures for vortex separation systems. No impact is anticipated after mitigation.

7.8.3.5 Enforcement of Litter Laws

Enforcement of litter laws would involve no change to the physical environment either directly or indirectly and would have no impact on cultural resources. No mitigation is required since no impact is anticipated.

7.8.3.6 Increased Street Sweeping and Storm Drain Cleaning

Increased street sweeping and storm drain cleaning would occur in urbanized areas along public rights of way and would have no potential to impact cultural resources. No mitigation is required since no impact is anticipated.

7.8.3.7 Public Education

Public education would involve no change to the physical environment either directly or indirectly and would have no impact on cultural resources. No mitigation is required since no impact is anticipated.

7.9 GEOLOGY AND SOILS

This section describes the existing geological and soil resources that occur in the Los Angeles River watershed and the potential impacts to these resources caused by the alternative compliance measures for the Trash TMDL.

7.9.1 Major Geologic Features

The Los Angeles River watershed overlays varied geological terrain. The river originates in the Santa Susana, San Gabriel, and Verdugo mountains and the San Fernando Valley, which are part of the Transverse Ranges Geomorphic Province. The Transverse Ranges are an east-west trending series of steep mountain ranges and valleys. Intense north-south compression is squeezing the Transverse Ranges. As a result, this is one of the most rapidly rising regions on earth (California Geological Survey, 2002a). The San Gabriels are rugged mountains with deeply dissected canyons. They consist predominately of Mesozoic granitic rocks with minor exposures of Precambrian igneous and metamorphic rocks and small stocks of Tertiary plutonic rocks. Cenozoic sedimentary beds are exposed at the margins of the San Gabriel Mountains. Eroded sediments from these mountains have formed and are continuing to form prominent alluvial fans in the valleys along the flanks of the range. During the Miocene Epoch, the sea advanced to the base of the San Gabriel Mountains, depositing fine-grained marine sediments. As the sea retreated, coarser-grained sediments, eroded form the Transverse Ranges, were deposited as alluvial fans in low-lying areas such as the San Fernando Valley, San Gabriel Valley, and the Los Angeles Coastal plain. These low-lying areas or basins are filled with layers of sediment. Many of these layers of sediment form aquifers that are important sources of groundwater in the Region (LARWQCB, 1994).

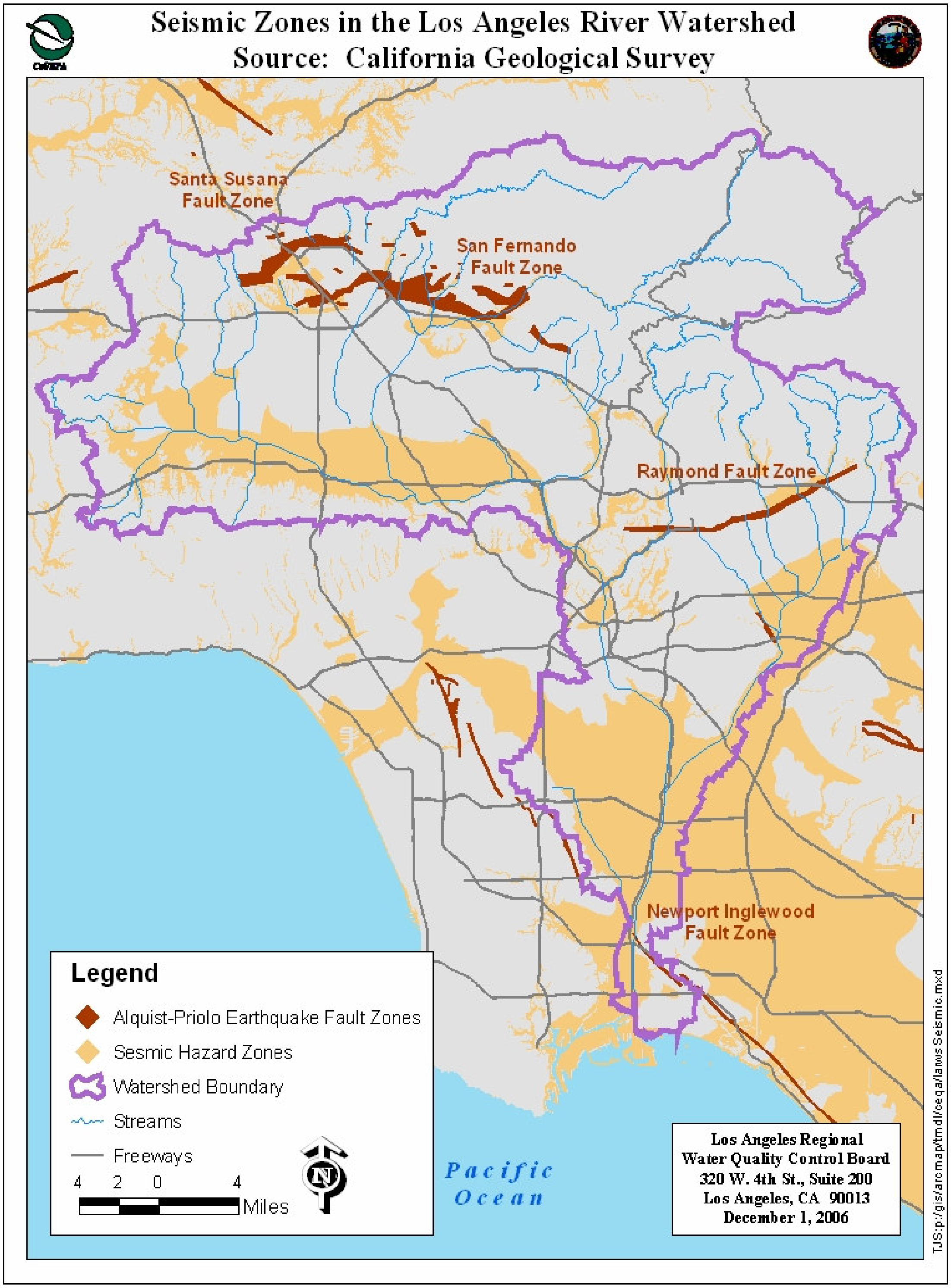
The portion of the watershed including downtown Los Angeles and the Los Angeles Basin lies within the Peninsular Range Geomorphic Province. This province includes a series of ranges separated by northwest trending valleys, subparallel to faults branching from the San Andreas Fault. The geology consists of granitic rock intruding older metamorphic rocks (California Geological Survey, 2002a).

7.9.2 Seismic Faults and Geologic Hazards

There are several major faults in the Los Angeles River watershed, which can pose environmental risks due to fault rupture or other seismic hazards. The California Geological Survey (CGS) Alquist-Priolo program addresses the hazard of surface fault rupture by establishing regulatory zones (known as Earthquake Fault Zones) around the surface traces of active faults and to issue appropriate maps. Before a project can be permitted, cities and counties must require a geologic investigation to demonstrate that proposed buildings will not be constructed across active faults. An evaluation and written report of a specific site must be prepared by a licensed geologist. If an active fault is found, a structure for human occupancy cannot be placed over the trace of the fault and must be set back from the fault (generally 50 feet) (California Geological Survey, 2006a). Figure 7.9-1 shows the Alquist-Priolo fault zones in the watershed, including the Raymond fault zone, San Fernando Fault zone, Santa Susana Fault zone, and the Newport-Inglewood fault zone. The Santa Susana and San Fernando fault zones are located outside the urbanized portion of the watershed and are not likely to be encountered during implementation of the Trash TMDL.

Portions of the urbanized watershed are located within liquefaction zones and are subject to liquefaction and seismically induced landslides, lateral spreading, and subsidence. Lateral spreading is the loss of surface-level soil strength associated with liquefaction during strong ground shaking. Subsidence, or the lowering of ground surface elevation, can also occur during seismic shaking. The CGS Seismic Hazard Maps for the Los Angeles area show several areas in the watershed that are prone to liquefaction and/or landslides (California Geological Survey, 2006b). The locations of these areas are also shown in Figure 7.9-1. These areas occur mainly in the San Fernando Valley and in the lower portion of the watershed on the coastal plain.

Figure 7.9-1 Alquist-Priolo fault zones and Seismic Hazard Zones in the Los Angeles River Watershed



7.9.3 Thresholds of Significance

According to Appendix G of the State CEQA Guidelines, a project would normally have a significant effect on the environment if it would:

- Expose people or structures to potential substantial adverse effects, including the risk of loss, injury, or death involving:

  - Rupture of a known earthquake fault, as delineated on the most recent Alquist-Priolo Earthquake Fault Zoning Map issued by the State Geologist for the area or based on other substantial evidence of a known fault; Refer to Division of Mines and Geology Special Publication 42.

  - Strong seismic ground shaking;

  - Seismic-related ground failure, including liquefaction;

  - Landslides;

- Result in substantial soil erosion or the loss of topsoil;

- Be located on a geologic unit or soil that is unstable, or that would become unstable as a result of the project, and potentially result in on- or off-site landslide, lateral spreading, subsidence, liquefaction or collapse;

- Be located on expansive soil, as defined in Table 18-1-B of the Uniform Building Code (1994), creating substantial risks to life or property; or

- Have soils incapable of adequately supporting the use of septic tanks or alternative wastewater disposal systems where sewers are not available for the disposal of waste water.

7.9.4 Environmental Impacts and Mitigation Measures for Alternatives

This section presents potential impacts to geology and soils resources related to the implementation of the Los Angeles River Trash TMDL. Potential impacts are evaluated for each alternative method of compliance, including structural devices, institutional controls, and public education. Additionally, mitigation measures are identified, where applicable, and potential impacts after mitigation are provided.

This is a program-level analysis of the potential impacts from each alternative. The specific location of each alternative would be determined during the implementation of the Trash TMDL.

<u>7.9.4.1 Vortex Separation Systems</u>

No impact due to exposure of people to, or property to, geologic hazards such as rupture of a known earthquake fault, strong seismic ground shaking, liquefaction, or landslides is expected from the implementation of vortex separation systems. Although areas of the watershed are subject to geologic hazards, compliance with standard design and construction specifications and the recommendations of geotechnical studies prepared at the project level would reduce the risk of damage from seismic-related hazards. Furthermore, it is not reasonably foreseeable that responsible agencies would choose to comply with this TMDL through structural means in areas where doing so would result in exposure of people or property to geologic hazards. Rather, it is foreseeable that localities would avoid such compliance measures in lieu of other compliance measures, such as enforcing litter ordinances in sensitive areas.

Wind or water erosion of soils may occur as a short-term impact during installation of vortex separation systems. Siltation or deposition within the vortex separation systems may occur, resulting in reduction in siltation or deposition in the estuary or within the channels and the concrete lined channels. Reduction in siltation and deposition in the estuary may be considered a positive impact as fine sediments may contain toxic pollutants. Little or no impact on erosion of the river bed is expected since the flow rate in the river is not impacted by foreseeable methods of compliance and most of the river channel is lined.

Installation and operation of vortex separation systems would not cause or accelerate instability due to on- or off-site landslides, lateral spreading, subsidence, expansive soils, liquefaction, or collapse. Vortex separation systems would not be of the size or scale to result in unstable earth conditions, changes in geologic substructures, topography or ground surface relief features, or destruction, covering or modification of any unique geologic or physical features. Typical units occupy about 4-1/2 square feet of plan view area for each cubic foot per second that they treat. For example, the city of Los Angeles has installed a CDS unit in the downtown Los Angeles area that weighs approximately 70.6 tons with a foot print diameter of 18 ft. Implementation of the TMDL may result in minor surface soil excavation during installation of vortex separation systems and result in temporarily unstable soil but would not, due to small size, however, lead to landslides, lateral spreading, subsidence, expansive soils, liquefaction, or collapse. Most of the relevant areas are already urbanized, and have already suffered soil compaction and hardscaping. Installation of vortex separation systems would occur within the existing storm drain system.

Compliance with the TMDL will not require the use of septic tanks or alternative waste water disposal systems. The presence or absence of soils incapable of adequately supporting their use is not relevant.

To the extent that vortex separation systems are installed in areas subject to geologic hazards, such as, ground shaking, liquefaction, liquefaction-induced hazards, or landslides, geotechnical studies prepared as part of the pre-design process would identify site-specific soil and subsurface conditions and specify design features would keep potential seismic-related impacts within acceptable levels. Compliance with existing regulations, building codes, and standards specifications would also keep potential impacts within acceptable levels. The most appropriate mitigation measure for potential fault rupture hazards is avoidance (i.e., building setbacks), as most surface faulting is confined to a relatively narrow zone a few feet to few tens of feet wide (California Geological Survey, 2002b).

To the extent that the installation of vortex separation systems causes an increase in erosion, typical established best management practices would be used during implementation to minimize offsite sediment runoff or deposition. Construction sites are required to retain sediments on site, either under 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.

To the extent that installation and operation of vortex separation systems could result in ground instability, potential impacts could be avoided or mitigated through mapping to site facilities away areas with unsuitable soils or steep slopes, design and installation in compliance with existing regulations, standard specifications and building codes, ground improvements such as soil compaction, and groundwater level monitoring to ensure stable conditions.

To the extent that any soil is disturbed during installation of vortex separation systems, standard construction techniques, including but not limited to, shoring, piling and soil stabilization can mitigate any potential impacts. Prior to earthwork, a geotechnical study would be conducted to evaluate geology and soil conditions.

7.9.4.2 Catch Basin Inserts

Catch basin inserts fit directly into curbside catch basins in urbanized areas and require no construction or ground disturbance. There is therefore no potential to impact geology or soils resources from this alternative means of compliance. No mitigation is required since no impact is anticipated.

7.9.4.3 Trash Nets

Trash nets are installed within the storm drain system either inline or at the end of pipe. Installation requires no ground disturbance which might impact geology or soils resources. No mitigation is required since no impact is anticipated.

7.9.4.4 Gross Solids Removal Devices (GSRDs)

Like vortex separation systems, gross solids removal devices are inline structural trash removal devices that are implemented in urbanized areas. As such, the project-level impacts on geology and soils resources due to implementation of gross solids removal devices would be similar to the project-level impacts associated with vortex separation systems.

The proposed mitigation measures for gross solids removal devices would be similar to the proposed mitigation measures for vortex separation systems. No impact is anticipated after mitigation.

7.9.4.5 Enforcement of Litter Laws

Enforcement of litter laws would involve no change to the physical environment either directly or indirectly and would have no impact on geology and soils resources. No mitigation is required since no impact is anticipated.

7.9.4.6 Increased Street Sweeping and Storm Drain Cleaning

Increased street sweeping and storm drain cleaning would occur in urbanized areas along public rights of way and would have no potential to impact geology and soils resources. No mitigation is required since no impact is anticipated.

7.9.4.7 Public Education

Public education would involve no change to the physical environment either directly or indirectly and would have no impact on geology and soils resources. No mitigation is required since no impact is anticipated.

7.9.5. Summary

Installation and maintenance of some structural trash-reduction BMPs are not expected to result in potentially significant environmental effects with regard to geology and soils, because municipalities would not reasonably site BMPs where they would risk such impacts . Further, in the unlikely occurrence of such an impact, mitigation measures, which can be applied to reduce and/or eliminate these impacts, are available as described above. These mitigation measures are within the responsibility and jurisdiction of the responsible agencies in the Trash TMDL and can or should be adopted by them (California Code of Regulations, title 14, section 15091(a)(2)). The Regional Board does not direct which compliance measures responsible agencies choose to adopt nor which mitigation measures they employ. The Regional Board does, however, recommend that appropriate mitigation measures be applied in order that potential environmental impacts be reduced or avoided. It is foreseeable that these mitigation measures may not always be capable of reducing these impacts to levels that are less than significant in every conceivable instance. In the event that a specific mitigation measure or alternative may not reduce impacts to levels that are less than significant, the project proponent may need to consider an alternative strategy or combination of strategies to comply with the TMDL.

7.10 HAZARDS, HAZARDOUS MATERIALS, AND HUMAN HEALTH

This section describes the existing conditions for hazardous materials and hazards, including human health hazards, that occur in the Los Angeles River watershed and the potential impacts related to these conditions caused by the alternative compliance measures for the Trash TMDL.

7.10.1 Description of Hazards and Hazardous Materials in the watershed

Hazards and hazardous materials are located throughout the urbanized portion of the watershed either as naturally occurring or man-made hazards. Abandoned oil fields are located in the San Fernando Valley and downtown areas. Naturally occurring methane and other natural gasses could be present in these areas, which could pose a risk of fire or explosion. Contaminated soil and groundwater from commercial and industrial sites such as gas stations, dry cleaners, and manufacturing facilities are located throughout the watershed as well. Aboveground and underground storage tanks contain vast quantities of hazardous substances. Thousands of these tanks in the Region have leaked or are leaking, discharging petroleum fuels, solvents, and other hazardous substances into the subsurface. These leaks as well as other discharges to the subsurface that result from inadequate handling, storage, and disposal practices can seep into the subsurface and pollute soils and groundwater. For example, in the San Fernando Valley, volatile organic compounds from industry are the primary pollutants in much of the groundwater throughout the San Fernando Basin underlying the valley. The California Department of Toxic Substances control has designated large areas of this basin as high priority Hazardous Substance Cleanup sites. Furthermore, U.S. EPA has designated these areas as Superfund sites (LARWQCB, 1994).

Both naturally occurring hazards and anthropogenic contaminated soils and groundwater could be encountered during the installation of structural treatment alternatives for implementation of the Trash TMDL.

The project also may generate hazardous emissions, as the trash devices will, by design, trap substances which could become hazardous to the public or to maintenance workers if not handled in a timely manner and disposed of appropriately. To the extent improper disposal of, for instance, household hazardous wastes result in them being trapped in structural compliance measures, and potentially allowing a release of such chemicals, local residents could be exposed to those effects. On balance, however, it is not unfair that the residents of the localities where improper disposal of such materials occurs should suffer those risks rather than allowing the wastes to be conveyed through the Los Angeles River and Estuary, to expose downstream citizens to the cumulative risks of them instead. Those effects are already occurring in the watershed and should be considered baseline impacts. Nevertheless, to the extent the locality that originated the risk would become newly potentially exposed instead of downstream receptors, those impacts could be potentially significant in those locales. Such impacts could be avoided or mitigated by educating the local community of the effects of improper disposal of such wastes, enforcing litter ordinances, and timely cleaning out inserts and structural controls.

There is also the potential for human health hazards associated with the installation, operation, and maintenance of structural trash removal devices. Use of heavy equipment during installation and maintenance of structural trash removal devices may add to the potential for construction accidents. Unprotected sites may also result in accidental health hazards for people. In addition, certain structural devices may become a source of standing water. Any source of standing water can potentially become a source of vector production.

7.10.2 Thresholds of Significance

According to Appendix G of the State CEQA Guidelines, a project would normally have a significant effect on the environment if it would:

- Create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials.
- Create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the likely release of hazardous materials into the environment.
- Reasonably be anticipated to emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school.
- The project is located on a site which is included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5 and, as a result, would it create a significant hazard to the public or the environment.
- For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project result in a safety hazard for people residing or working in the project area.
- For a project within the vicinity of a private airstrip, would the project result in a safety hazard for people residing or working in the project area.
- Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan.
- Expose people or structures to the risk of loss, injury or death involving wild land fires, including where wild lands are adjacent to urbanized areas or where residences are intermixed with wild lands.

7.10.3 Environmental Impacts and Mitigation Measures

7.10.3.1 Vortex Separation Systems

It is reasonably foreseeable that hazards or hazardous materials could be encountered during the installation of vortex separation systems. Contamination could exist depending on the current and historical land uses of the area. Depending on their location, vortex separation systems 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.

Trash that is trapped by vortex separation systems could become hazardous to the public or to maintenance workers who collect and transport the trash if it is not handled in a timely manner and disposed of appropriately.

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

As vortex separation systems will be located in urbanized areas, it is not reasonably foreseeable that their installation would expose people to wildland fires. Furthermore, these are structural trash removal devices that would not serve as residences or places of employment. They would not result in a safety hazard for people residing or working within two miles of public airport or public use airport.

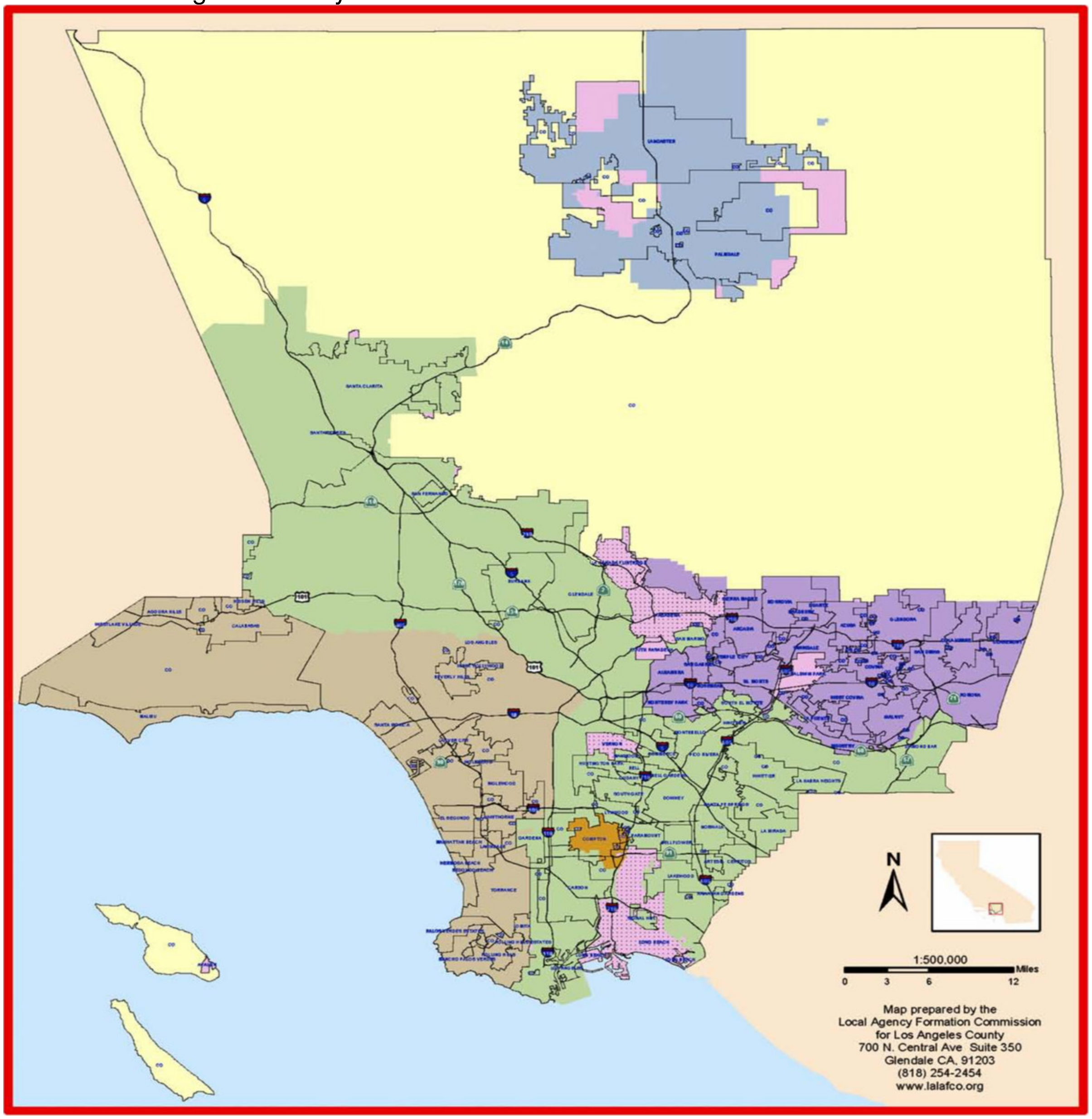
To the extent that installation of vortex separation systems could involve work with or near hazards or hazardous materials, potential risks of exposure can be mitigated with proper handling and storage procedures. The health and safety plan prepared for any project should address potential effects from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

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

To the extent that installation of vortex separation systems interfered with emergency response or evacuation plans, traffic control plans could be used to manage traffic through installation zones.

To the extent that vortex separation systems become a source of standing water and vector production, design at the project-level can help mitigate vector production from standing water. For example, in the Los Angeles River trash TMDL Regional Board hearing, the City of Los Angeles commented about vector creation and upstream flooding due to head loss. CDS Technologies described mitigation measures that CDS Technologies took in the installation of the CDS units in Los Angeles. Vector creation was mitigated at the project planning phase. The unit was planned to be installed at least 75 feet from inlet and outlet pipes to mitigate vector habitats. The unit was factory sealed to further prevent vector harborage. To mitigate upstream flooding, CDS Technologies redesigned their weir boxes and customized their diversion structures. They increased the surface area of their diversion structures to lower the depth of flow and reduced overall raised water surface. The unit also had a bypass overflow in case flow exceeds treatment capacity. Netting can be installed over devices to further mitigate vector production. Vector control agencies may also be employed as another source of mitigation. Systems that are prone to standing water can be selectively installed away from high-density areas and away from residential housing and/or by requiring oversight and treatment of those systems by vector control agencies. Figure 7.10-1 shows the location of the vector control districts in the urbanized portion of the watershed.

Figure 7.10-1: Mosquito and/or Vector Control Districts – Incorporated and Unincorporated Areas of Los Angeles County



7.10.3.2 Catch Basin Inserts

Catch basin inserts fit directly into curbside catch basins in urbanized areas and require no construction or ground disturbance. There is therefore no potential to encounter contaminated soils or groundwater or other hazards from this alternative means of compliance. Since no construction is required, the use of hazardous materials or potential for construction accidents is unlikely during installation. However, catch basin cleaning and maintenance could pose risks to maintenance workers.

To the extent that catch basin cleaning and maintenance 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.

7.10.3.3 Trash Nets

Trash nets are installed within the storm drain system either inline or at the end of pipe. There is therefore no potential to encounter contaminated soils or groundwater or other hazards from this alternative means of compliance. Since no construction is required, the use of hazardous materials or potential for construction accidents is unlikely during installation. No mitigation is required since no impact is anticipated.

7.10.3.4 Gross Solids Removal Devices (GSRDs)

Like vortex separation systems, gross solids removal devices are inline structural trash removal devices that are implemented in urbanized areas. As such, the project-level impacts related to hazards and hazardous materials due to implementation of gross solids removal devices would be similar to the project-level impacts associated with vortex separation systems.

The proposed mitigation measures for gross solids removal devices would be similar to the proposed mitigation measures for vortex separation systems.

7.10.3.5 Enforcement of Litter Laws

Enforcement of litter laws would involve no change to the physical environment either directly or indirectly and would have no impact related to hazards, hazardous materials, or human health. No mitigation is required since no impact is anticipated.

7.10.3.6 Increased Street Sweeping and Storm Drain Cleaning

Increased street sweeping and storm drain cleaning would occur in urbanized areas along public rights of way and would have no potential impact related to hazards, hazardous materials, or human health. No mitigation is required since no impact is anticipated.

7.10.3.7 Public Education

Public education would involve no change to the physical environment either directly or indirectly and would have no impact related to hazards, hazardous materials, or human health. No mitigation is required since no impact is anticipated.

7.10.4 Summary

Installation and maintenance of some structural trash-reduction BMPs could result in potentially significant environmental effects with regard to hazards, hazardous materials, and human health. However, mitigation measures which can be applied to reduce and/or eliminate these impacts are available as described above. These mitigation measures are within the responsibility and jurisdiction of the responsible agencies in the Trash TMDL and can or should be adopted by them (California Code of Regulations, title 14, section 15091(a)(2)). The Regional Board does not direct which compliance measures responsible agencies choose to adopt nor which mitigation measures they employ. The Regional Board does, however, recommend that appropriate mitigation measures be applied in order that potential environmental impacts be reduced or avoided. It is foreseeable that these mitigation measures may not always be capable of reducing these impacts to levels that are less than significant in every conceivable instance. In the event that a specific mitigation measure or alternative may not reduce impacts to levels that are less than significant, the project proponent may need to consider an alternative strategy or combination of strategies to comply with the TMDL.

7.11 HYDROLOGY AND WATER QUALITY

Introduction

This section provides an overview of the hydrology and water quality in the Los Angeles River Watershed and an analysis of impacts to hydrology and water quality associated with implementation the Los Angeles River Trash TMDL. Hydrology and water quality includes surface water hydrology (flood hazards), surface water, and groundwater quality. The reasonably foreseeable impacts are analyzed for the structural compliance measures such as vortex separation systems, gross solids removal devices, trash nets, catch basin inserts, as well as non-structural alternatives such as increased street sweeping, enforcement of existing litter laws, storm drain cleaning and public education. Where applicable, mitigation measures to reduce the impacts associated with each alternative are provided.

7.11.1 Environmental Setting

7.11.1.1 Surface Water Hydrology

The Los Angeles (LA) River watershed is one of the largest in the Region. In its entirety, the Los Angeles River is 51 miles long, draining a watershed of 834 square miles (533,760 acres). The natural hydrology of the Los Angeles River Watershed has been altered by channelization and the construction of dams and flood control reservoirs. The LA River includes a total of 470 miles of open channels, 2,400 miles of covered storm drains, 123 debris basins, and 20 dams. Approximately 235 square miles of the watershed is made up of the Los Angeles National Forest and other open space including the area near the headwaters which originate in the Santa Monica, Santa Susana, and San Gabriel Mountains. The remainder of the watershed 599 square miles is highly developed and defined as the urbanized portion of the watershed.

The Los Angeles River begins at the confluence of the Arroyo Calabasas and Bell Creek. Six major tributaries join the river as it flows east then south to the Pacific Ocean at Queensway Bay, a portion of the San Pedro Bay in Long Beach. These major tributaries include Tujunga Wash, Burbank Western Channel, Verdugo Wash, Arroyo Seco, Rio Hondo, and Compton Creek. The Rio Hondo is connected hydraulically to the San Gabriel River Watershed because flows from the San Gabriel River are routed to Whittier Narrows Reservoir during larger flood events and continue through the Rio Hondo. Most of the water in the Rio Hondo is used for groundwater recharge during the dry weather seasons.

From the confluence of Arroyo Calabasas and Bell Creek, the Los Angeles River flows east for approximately 16 miles along the base of the Santa Monica Mountains through the southern portion of the San Fernando Valley. Most of the Los Angeles River and its tributaries were lined with concrete between 1935 and 1959 for flood control purposes (Gumprecht, 1999). This reach is lined in concrete except for 2.4 miles of the LA River with a soft bottom within the Sepulveda Flood Control Basin. The Sepulveda Basin is a 2,150-acre open space, located upstream of the Sepulveda Dam, designed to collect flood waters during major storms. Because the area is periodically inundated, it remains in a semi-natural condition and supports a variety of low-intensity uses as well as supplying habitat.

At the eastern end of the San Fernando Valley, the Los Angeles River bends around the Hollywood Hills and flows south through Griffith and Elysian Parks, in an area known as the

Glendale Narrows. This area is fed by natural springs during periods of high groundwater. The LA River is again lined in concrete for most of its course except for a six-mile unlined rocky bottom segment with concrete-lined or rip-rap sides between the confluence of the Burbank Western Channel near Riverside Drive and north of the Arroyo Seco confluence. The river bottom in this area is unlined because the water table is high and groundwater routinely discharges into the channel, in varying volumes depending on the height of the water table. The Los Angeles-Glendale Water Reclamation Plant, operated by the City of Los Angeles, discharges to the Los Angeles River in the Glendale Narrows.

South of the Glendale Narrows, the river is contained in a concrete-lined channel down to Willow Street in Long Beach. The LA River Estuary begins in Long Beach at Willow Street and continues south for approximately 2.6 miles before flowing into Queensway Bay in the City of Long Beach. In this reach, the channel has a soft bottom with concrete-lined sides. Sandbars accumulate in the portion of the river where tidal influence is limited.

Also part of the watershed is a number of lakes including Peck Road Park, Belvedere Park, Hollenbeck Park, Lincoln Park, and Echo Park Lakes as well as Lake Calabasas.

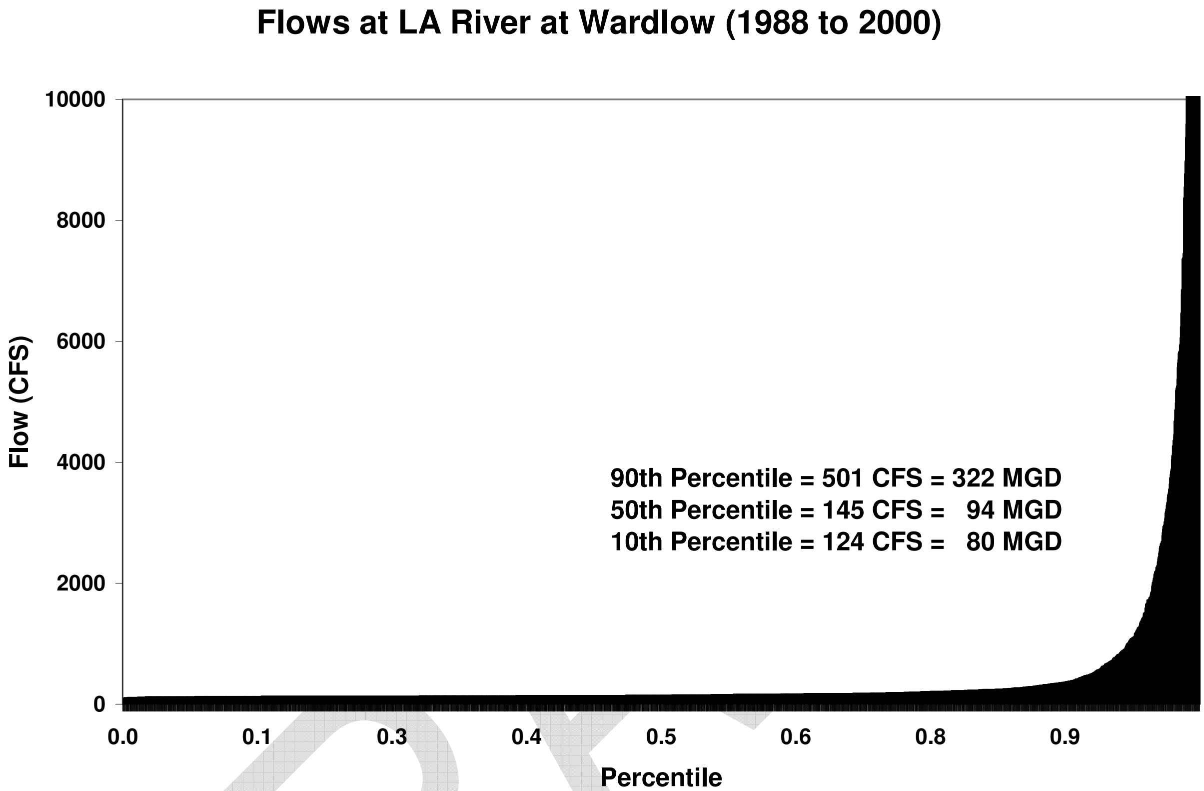
LA River Flows

In the Los Angeles River Watershed surface water flow encounters natural and urban development. Surface runoff is characterized as either dry weather or wet weather flows. Dry weather flows typically include a combination of landscape irrigation runoff, street washing, car washing, groundwater seepage, fire hydrant flushing, construction runoff, and permitted discharges. Permitted discharges include discharges from the publicly owned treatment works (POTWs), and other point sources, such as industrial wastewater, blowdown water from cooling towers, and groundwater dewatering. Wet weather runoff is runoff that results from rainfall events and includes permitted discharges of storm water from construction sites and industrial storm water discharges. Pollutants in dry and wet weather runoff include, but are not limited to, pesticides, fertilizers, oils, human waste, animal waste, trash, yard trimmings, and particles from atmospheric deposition.

During dry weather, most of the flow in the Los Angeles River is comprised of wastewater effluent from several POTWs. The three largest POTWs (Donald C. Tillman Water Reclamation Plant, Los Angeles-Glendale Water Reclamation Plant, and Burbank Water Reclamation Plant) constitute the major sources in the watershed. Tillman is a tertiary treatment plant which discharges approximately 53 million gallons per day (mgd) to the Los Angeles River. The Los Angeles-Glendale POTW discharges approximately 14.2 mgd directly into the Los Angeles River in the Glendale Narrows. Burbank discharges approximately 5.4 mgd directly into the Burbank Western Channel (LARWQCB, 1998).

In the dry season, POTW mean monthly discharges totaled 70% to 100% of the monthly average flow in the river (Ackerman, 2003). The median daily flow in the Los Angeles River is 94 mgd (145 cfs), based on flows measured at the LACDPW Wardlow station over a 12-year period (Figure 7.11-1). During wet weather, the river's flow may increase by two to three orders of magnitude due to storm water runoff. Average daily flows greater than 322 mgd (501 cfs) were observed 10% of the time (LACDPW, 2003). In months with rain events, POTW monthly average discharges together were less than 20% of the monthly average flow in the river.

Figure 7.11-1. Los Angeles River flows at Wardlow (October 1988 – December 2000)



Flood Hazards

The Los Angeles County, in cooperation with the City of Los Angeles, state, and federal agencies, has an extensive drainage system for providing protection against flood hazards caused by excessive wet weather flows. The system includes dams, open channels, flood control basins, storm drains, catch basins, culverts, low-flow diversions to direct runoff to sanitary sewer systems, pumping plants, debris basins, detention basins, and spreading grounds. The primary agencies that share flood control responsibilities within the County of Los Angeles are the U. S. Army Corps of Engineers (Army Corps), the Los Angeles County Department of Public Works (County), the City of Los Angeles, and Caltrans (City of Los Angeles, 2001).

Each agency exercises jurisdiction over the flood control facilities they own and operate. Since, each agency is responsible for complying with varying regulations, policies, and design standards, flood control facilities throughout the County can differ. Typically, City and County storm drains are designed to carry flow from a 10-year storm within the pipe. Streets and gutters are also considered part of the storm drain system. The combination of storm drain pipe and street (curb to curb) typically provides capacity for a 25-year storm. Army Corps facilities are typically designed for a 100-year storm (City of Los Angeles, 2001).

The storm drain system drains to various inland streams and channels; ultimately, runoff is discharged to the Pacific Ocean. However, even with flood control devices, portions of Los Angeles lie within 100- and 500-year flood zones as defined by the Federal Emergency Management Agency (City of Los Angeles, 2006).

7.11.1.2 Surface Water Quality

Potential sources of pollution in the Los Angeles River Watershed include: wastewater treatment or reclamation plant discharges, industrial discharges, septic systems, landfills, non-point sources (horse stables, golf courses), illegal trash dumping, and cross-contamination between surface water and groundwater. Added to this complex mixture of pollutant sources (in particular, pollutants associated with urban and storm water runoff) is the high number of point source permits (Table 7.11-1).

Table 7.11-1. Summary of NPDES permits in Los Angeles River watershed. (SOURCE: LARWQCB).

Type of Permit	No. of Permits
Publicly Owned Treatment Works	6
Municipal Storm water	3
Industrial Storm water	1307
Construction Storm water	204
Other Major NDPES Discharges	3
Minor NPDES Discharges	15
General NPDES Discharges (90)	
Construction Dewatering	35
Potable Water	25
Non-Process Wastewater	9
Hydrostatic Test Water	8
Petroleum Fuel Cleanup Sites	7
VOCs Cleanup Sites	6
Total	**1628**

A majority of the 114 NPDES permits in the in the Los Angeles River Watershed are for discharges that flow directly to the River. There are 9 major NPDES permits, 15 minor NPDES permits, and 90 general NPDES permits in the Los Angeles River watershed. Minor permits cover miscellaneous wastes such as ground water dewatering, swimming pool wastes, and ground water seepage. The Regional Board has issued general NPDES permits for the following categories of discharges: construction dewatering, non-process wastewater; petroleum fuel cleanup sites; volatile organic compounds (VOCs) cleanup sites; potable water; and hydrostatic test water.

Of the 1307 dischargers enrolled under the general industrial storm water permit in the watershed, the largest numbers occur in the cities of Los Angeles, Vernon, South Gate, Long Beach, Compton, and Commerce. Metal plating, recycling and manufacturing, transit, trucking and warehousing, and wholesale trade are a large component of these facilities. The LA River Watershed has the greatest number of industrial storm water permits in the region.

There are a total of 204 construction sites enrolled under the construction storm water permit. The larger sites are in the upper watershed (which includes the San Fernando Valley) and the construction in this watershed is fairly evenly divided between commercial and residential. Potential pollutants from construction sites include trash and sediment, which may contain metals as well as metals from construction materials and the heavy equipment used on construction sites.

The majority of the LA River Watershed is considered impaired due to a variety of point and non-point sources. The 2002 303(d) list implicates pH, ammonia, a number of metals, coliform, trash, scum, algae, oil, chlorpyrifos as well as other pesticides, and volatile organics for a total of 107 individual impairments (reach/constituent combinations). Some of these constituents are of concern throughout the length of the river while others are of concern only in certain reaches (Table 7.11-2 2006 303(d) List for LA River). Impairment may be due to water column exceedances, excessive sediment levels of pollutants, or bioaccumulation of pollutants. The beneficial uses threatened or impaired by degraded water quality are aquatic life, recreation, groundwater recharge, and municipal water supply.

Table 7.11-2. 2006 303(d) List of Water Quality Limited Segments in the Los Angeles River Watershed (LARWQCB, 2006)

Waterbody Segment	Pollutants
Aliso Canyon Wash	Copper, Fecal Coliform, Selenium
Arroyo Seco Reach 1	Coliform Bacteria, Trash
Arroyo Seco Reach 2	Coliform Bacteria, Trash
Bell Creek	Coliform Bacteria
Burbank Western Channel	Copper, Cyanide, Trash
Compton Creek	Coliform Bacteria, Copper, Lead, pH, Trash
Dry Canyon Creek	Fecal Coliform, Total Selenium
Echo Park Lake	Algae, Ammonia, Copper, Eutrophic, Lead, Odor, PCBs, pH, Trash
Lake Calabasas	Ammonia, DDT, Eutrophic, Odor, Organic Enrichment/Low Dissolved Oxygen, pH
Lincoln Park Lake	Ammonia, Eutrophic, Lead, Odor, Organic Enrichment/Low Dissolved Oxygen, Trash
Los Angeles River Estuary	Chlordane, DDT, Lead, PCBs, Sediment Toxicity, Trash, Zinc
Los Angeles River Reach 1	Ammonia, Coliform Bacteria, Copper, Cyanide, Diazinon, Lead, Nutrients, pH, Trash, Zinc
Los Angeles River Reach 2	Ammonia, Coliform Bacteria, Lead, Nutrients, Oil, Trash
Los Angeles River Reach 3	Ammonia, Nutrients, Trash
Los Angeles River Reach 4	Ammonia, Coliform Bacteria, Lead, Nutrients, Trash

Waterbody Segment	Pollutants
Los Angeles River Reach 5	Ammonia, Nutrients, Oil, Trash
Los Angeles River Reach 6	1,1-DCE, Coliform Bacteria, PCE, TCE
McCoy Canyon Creek	Fecal Coliform, Nitrate, Nitrogen as Nitrate, Total Selenium
Monrovia Canyon Creek	Lead
Peck Road Park Lake	Chlordane, DDT, Lead, Odor, Organic Enrichment/Low Dissolved, Trash
Rio Hondo Reach 1	Coliform Bacteria, Copper, Lead, pH, Trash, Zinc
Rio Hondo Reach 2	Coliform Bacteria
Tujunga Wash	Ammonia, Coliform Bacteria, Copper, Trash
Verdugo Wash Reach 1	Coliform Bacteria, Trash
Verdugo Wash Reach 2	Coliform Bacteria, Trash

7.11.1.3 Groundwater Hydrology

Two main groundwater basins partially lie beneath the Los Angeles River Watershed, the San Fernando Basin and Coastal Plain of Los Angeles Basin, in addition to, two smaller basins the San Gabriel Valley Basin and the Raymond Basin. Within the LA River Watershed, groundwater is a source of water used by the County of Los Angeles, City of Los Angeles, and other cities, private industry, and private agricultural and domestic users. Additionally, numerous spreading basins are located throughout the HSA to replenish groundwater supplies. The following sections describe the groundwater hydrology by basin. Refer to Figure 7.11-2 Groundwater Basins in the Los Angeles Watershed.

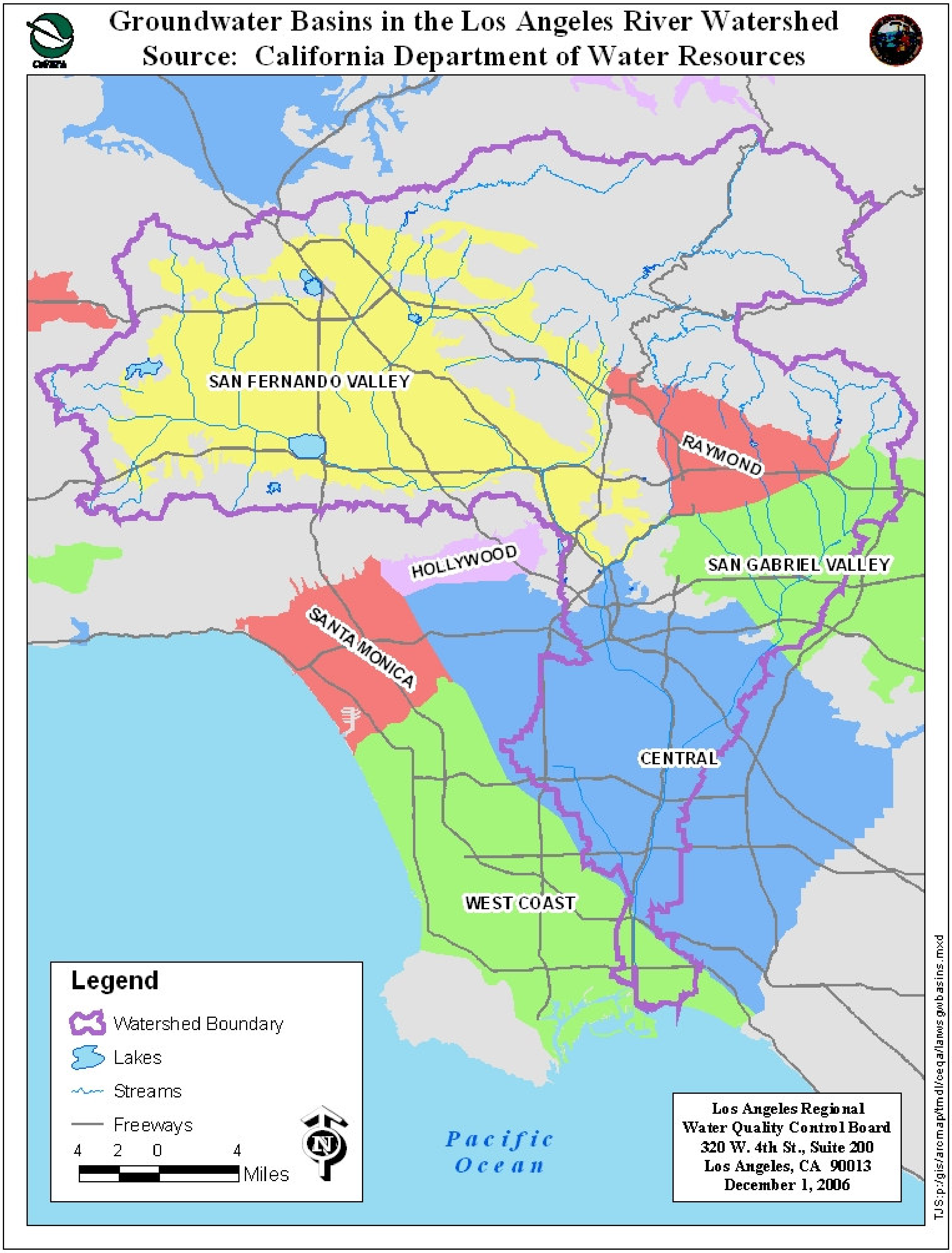
San Fernando Valley Groundwater.

The San Fernando Valley, also known as the Upper Los Angeles River Area (ULARA), contains four separate adjudicated groundwater basins—the San Fernando, Sylmar, Verdugo, and Eagle Rock Basins. The San Fernando Basin has an estimated total groundwater storage capacity of approximately 3 million acre-feet and a surface area of 112,000 acres. The San Fernando Basin is bounded on the north and northwest by the Santa Susana Mountains, on the north and northeast by the San Gabriel Mountains, on the east by the San Rafael Hills, on the south by the Santa Monica Mountains and Chalk Hills, and on the west by the Simi Hills. Drainage occurs via the Los Angeles River through the Glendale Narrows.

Water-bearing sediments in the San Fernando Basin include Holocene and Pleistocene alluvium, and Pleistocene Saugus Formation. Groundwater is mostly unconfined, with localized confined to semi-confined zones. Sediments are most permeable in the eastern part of the San Fernando Basin. Groundwater generally flows to the southeast, where it exits the San Fernando Basin as underflow or as rising water into the Los Angeles River in the Central Basin of the Los Angeles Coastal Plain. Groundwater flow velocities vary from 5 feet per year in the western portion of the San Fernando Basin to 1,300 feet per year in the Narrows.

Groundwater levels in the San Fernando Basin have been recorded since the early 1900s. The water table fluctuates depending on rainfall, pumping, and recharge. Numerous monitoring wells that are used to track fluctuations in the groundwater table are located throughout the San Fernando. Extraction wellfields and six spreading facilities are located in the eastern part of San Fernando Basin to recharge the groundwater supply: Hansen, Pacoima, Tujunga, Branford, Lopez, and Headworks. Headworks, however, has not been used for spreading since approximately 1982. The remaining five facilities are operated by the Los Angeles County Department of Public Works. These facilities primarily use runoff derived from precipitation

Figure 7.11-2 Groundwater Basins in the Los Angeles Watershed.



within the watershed, but can also use imported surplus water during wet years. Basin recharge also occurs from direct precipitation and outdoor water use. Average spreading is approximately 25,000 acre-feet per year. Groundwater is generally deep in the eastern San Fernando Basin and fluctuates substantially. No extraction wells are in the western part of the San Fernando Basin, so groundwater levels in this area typically are closer to the ground surface and more stable.

Coastal Plain of Los Angeles Groundwater Basin.
The Coastal Plain of Los Angeles Groundwater Basin is subdivided into the Santa Monica, Central, Hollywood, and West Coast Sub-Basins. The physical characteristics of these sub-basins are discussed below.

Santa Monica Sub-Basin. The Santa Monica Sub-Basin has a surface area of approximately 32,100 acres (50.2 square miles) with an estimated storage capacity of 1,100,000 acre-feet. This sub-basin underlies the northwestern part of the Coastal Plain Basin and is bounded by the Santa Monica Mountains on the north, the Inglewood fault zone on the east, the Ballona Escarpment on the south, and the Pacific Ocean on the west. Ballona Creek is the primary hydrologic feature in the sub-basin, draining surface water to the Pacific Ocean (Department of Water Resources, 2004).

Groundwater in the Santa Monica Sub-Basin generally moves southward toward the Ballona gap, and then flows toward the Pacific Ocean. Recharge to the sub-basin is primarily due to the percolation of precipitation and surface runoff from the Santa Monica Mountains. Specific yield of the sediments in the sub-basin ranges from 1 to 26 percent, with well yields reaching as high as 4,700 gpm in the Silverado aquifer within the San Pedro formation (Department of Water Resources, 2004).

Central Sub-Basin. The Central Sub-Basin has a surface area of approximately 177,000 acres (277 square miles) with an estimated storage capacity of 13,800,000 acre-feet. The sub-basin occupies a large portion of the southeastern area of the Coastal Plain Basin and is bounded on the north by a surface divide known as the La Brea High; on the northeast and east by the Tertiary rocks of the Elysian, Repetto, Merced, and Puente Hills; on the southeast by Coyote Creek; and on the southwest by the Newport-Inglewood fault system. The sub-basin contains portions of the Los Angeles and San Gabriel Rivers (Department of Water Resources, 2004).

Groundwater recharge in the Central Sub-Basin is provided through surface and subsurface flow and by direct percolation of precipitation, stream flow, and applied water. Recharge occurs primarily in the forebay areas where permeable sediments are exposed at the ground surface. Artificial recharge also occurs in the sub-basin. Imported water purchased from the Metropolitan Water District and recycled water from the Whittier and San Jose Treatment Plants is applied in the Montebello forebay and at the Rio Hondo and San Gabriel River spreading grounds. Historically, groundwater flow in the Central Sub-Basin has been from the recharge areas in the northeast toward the Pacific Ocean in the southwest. However, pumping in the aquifers has reduced the subsurface outflow to the West Coast Sub-Basin (Department of Water Resources, 2004).

Hollywood Sub-Basin. The Hollywood Sub-Basin has a surface area of approximately 10,500 acres (16.4 square miles) with an estimated storage capacity of 200,000 acre-feet.

The sub-basin is generally bounded on the north by the Santa Monica Mountains, on the east by the Elysian Hills, on the west by the Inglewood fault zone, and on the south by the La Brea High, an impermeable rock zone near the surface (Department of Water Resources, 2004).

West Coast Sub-Basin. The West Coast Sub-Basin is an adjudicated sub-basin that has a surface area of approximately 91,300 acres (142 square miles) with an estimated storage capacity of 6,500,000 acre-feet in the Silverado aquifer, the primary water-producing aquifer in the sub-basin. The sub-basin is bounded on the north by the Ballona Escarpment, on the east by the Newport-Inglewood fault zone, and on the south and west by the Pacific Ocean and Palos Verdes Hills. The Los Angeles River and the San Gabriel River cross the sub-basin on the surface before entering San Pedro Bay (Department of Water Resources, 2004).

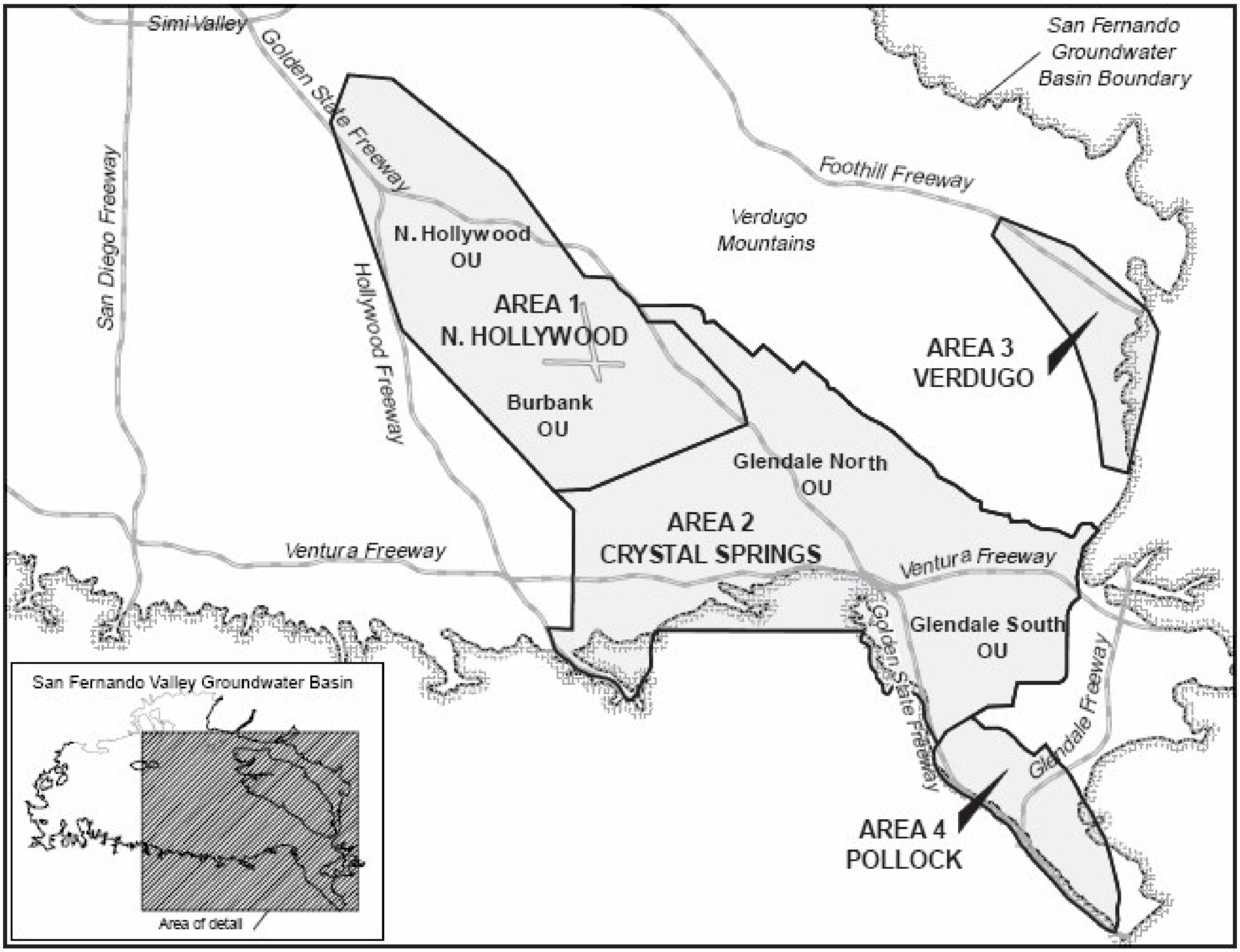
7.11.1.4 Groundwater Quality

San Fernando Valley Groundwater.
Water quality in the San Fernando Basin is affected by naturally occurring conditions and human-induced environmental contamination. A significant portion of the groundwater in the eastern portion of the San Fernando Basin is contaminated by industrial solvents such as trichloroethylene (TCE) and perchloroethylene (PCE). In addition, substantial contamination by chromium and nitrates exists. A large portion of the San Fernando Basin has been designated as a Superfund site by EPA. Data from 125 public wells show total dissolved solids (TDS) concentrations ranging between 176 to 1,160 milligrams per liter (mg/L) with an average of 499 mg/L. Contamination by TCE, PCE, and nitrate occurs in the eastern part of the San Fernando Basin, and elevated sulfate concentrations occur in the western portion of the Basin. Chloroform, nitrate, petroleum compounds, hexavalent chromium, and heavy metals also have been detected in the groundwater in the Basin. Water quality actively is monitored by the Upper Los Angeles River Area Watermaster, EPA, the Regional Board, DHS, and water suppliers (Department of Water Resources, 2004; LADWP, 2005).

Beginning in the early 1990s, these contamination plumes were delineated, and a groundwater model was developed as a tool for use in predicting the response of the San Fernando Basin to any new extractions or recharge. The Watermaster uses the model to monitor existing and future aquifer conditions and publishes the results in two annual reports: Watermaster Service in the Upper Los Angeles River Area published in May of each year, and the Groundwater Pumping and Spreading Plan, published in July of each year.

The San Fernando Valley Superfund site is located in the San Fernando Basin as depicted in Figure 7.11-3. This Superfund site is divided into four areas. Area 4, known as Pollock, is in the LADWP Pollock Wellfield; and Area 2, known as Crystal Springs, is in an extraction area used by the City of Glendale. At the Pollock Wellfield, extractions were stopped when chlorinated hydrocarbons were detected in drinking water at concentrations exceeding drinking water standards. A treatment system has since been installed to meet drinking water standards and pumping has resumed. In Area 2, extractions stopped in 1989 and resumed in 2000 after installation of a treatment system to remove contaminants (Department of Water Resources, 2004; LADWP, 2005; EPA, 2003). The treatment plant extraction wells were carefully located to capture the plumes under known and projected hydrologic conditions.

Figure 7.11-3: **San Fernando Valley Superfund Sites (Source: EPA, 2003)**



Coastal Plain of Los Angeles Groundwater Basin.
Santa Monica Sub-Basin. Analysis of water from seven public supply wells in the Santa Monica Sub-Basin indicate that TDS concentrations range from 729 to 1,156 mg/L with an average of 916 mg/L (Department of Water Resources, 2004).

Central Sub-Basin. The water quality in the Central Sub-Basin is monitored by the California DHS. Analyses of 293 public supply wells within this sub-basin indicate that TDS concentrations range from 200 to 2,500 mg/L with an average of 453 mg/L (Department of Water Resources, 2004).

Hollywood Sub-Basin. Water quality monitoring in the Hollywood Sub-Basin is scarce due to the fact that most of the public water supply is imported. One public supply well in the Hollywood Sub-Basin was tested in 1998 and showed a TDS concentration of 526 mg/L (Department of Water Resources, 2004).

West Coast Sub-Basin. Water quality varies throughout the West Coast Sub-Basin and is affected by seawater intrusion in some areas. Data from 45 public supply wells in the sub-basin show TDS concentrations ranging from 170 to 5,510 mg/L with an average of 720 mg/L.

Ground water resources in the watershed are also impacted. Impacts, both real and threatened, include those from hundreds of cases of known leaking underground storage tanks that have contaminated soil and/or ground water with petroleum hydrocarbons and volatile organic compounds. There are also a number of cases of refineries/tank farms that have contaminated soil and/or ground water. Seawater intrusion (chloride) is of concern in other areas of the watershed which has necessitated wellhead treatment, shutdown, or blending. Finally, a number of wells have been shut down due to nitrate contamination with septic systems as a likely source.

7.11.2 Thresholds of Significance

Based on Appendix G of the State CEQA Guidelines and professional judgment, the proposed project would result in a significant impact on hydrology or water quality if it would:

- Violate any water quality standards or waste discharge requirements;
- Substantially deplete groundwater supplies or interfere substantially with groundwater recharge, resulting in a net deficit in aquifer volume or a lowering of the local groundwater table level;
- Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, in a manner that would result in substantial erosion or siltation on- or off-site;
- Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, or substantially increase the rate of surface runoff in a manner that causes flooding on- or off-site, creating or contributing to an existing local or regional flooding problem;

- Create or contribute runoff water that would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff;

- otherwise substantially degrade water quality;

- Place housing within a 100-year flood hazard area as mapped on a federal Flood Hazard Boundary or Flood Insurance rate Map or other flood hazard delineation map;
- Place within a 100-year flood hazard area structures that would impede or redirect floodflows; or

- Expose people or structures to a significant risk of loss, injury, or death involving flooding, including flooding as a result of the failure of a levee or dam;

- Contribute to inundation by seiche, tsunami, or mudflow.

7.11.3 Environmental Impacts

To evaluate potential environmental impacts on hydrology and water quality the reasonably foreseeable impacts are identified for the installation and operation phases of each alternative. Where applicable, mitigation measures to reduce the impacts associated with each alternative are provided.

<u>7.11.3.1 Vortex Separation Systems</u>

Vortex Separation Systems (i.e. CDS unit) are devices designed to allow the incoming flow of urban runoff or storm water to pass through the device while capturing trash and other debris within the unit. These types of devices may result in a potentially significant impact due to flooding hazards if the screens became blocked by trash and debris and prevent the discharge of storm water to the Los Angeles River or if the vortex separation systems are not properly designed and constructed to allow for bypass of storm water during storm events that exceed the design capacity. This potential impact can be mitigated through the design of the vortex separation systems with overflow/bypass structures and by performing regular maintenance to prevent the build up of trash and debris. Therefore, the exposure of people and property to flooding hazards after mitigation is less then significant.

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

The vortex separation systems may cause a change in current and surface water movement. The stream flow in the lower watershed is highly channelized. As more trash is kept out of the channels, the roughness coefficient may be reduced which would increase the flow rate in the channel. However, the impact would be less than significant. The vortex separation systems would not alter the direction or slope of the stream channels in the lower watershed, therefore, no change in the direction of surface water flow will occur.

7.11.3.2 Gross Solids Removal Devices

Gross Solids Removal Devices (GSRDs) are devices designed to allow the incoming flow of urban runoff or storm water to pass through the device while capturing trash and other debris within the unit. These types of devices may result in a potentially significant impact due to flooding hazards if the screens became blocked by trash and debris and prevent the discharge of storm water to the Los Angeles River or if the GSRDs are not properly designed and constructed to allow for bypass of storm water during storm events that exceed the design capacity. This potential impact can be mitigated through the design of the GSRDs with overflow/bypass structures and by performing regular maintenance to prevent the build up of trash and debris. Therefore, the exposure of people and property to flooding hazards after mitigation is less then significant.

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

The GSRDs units may cause a change in current and surface water movement. The stream flow in the lower watershed is highly channelized. As more trash is kept out of the channels, the roughness coefficient may be reduced which would increase the flow rate in the channel. However, the impact would be less than significant. The GSRDs units would not alter the direction or slope of the stream channels in the lower watershed, therefore, no change in the direction of surface water flow will occur.

7.11.3.3 Trash Nets

Trash nets are devices that use the natural energy of the flow to trap trash, floatables and solids in disposable mesh nets. Trash nets can be installed at or below grade within existing storm water conveyance structures or retrofitted to an existing outfall structure with only minor modifications. These devices have less hydraulic effect than the vortex separation systems or the GSRDs, however, flooding is still a potential hazard if the nets became blocked by trash and debris and prevent the discharge of storm water. This potential impact can be mitigated through sizing and designing trash nets to allow for bypass when storm events exceed the design capacity and by performing regular maintenance to prevent the build up of trash and debris. Therefore, the exposure of people and property to flooding hazards after mitigation is less then significant.

7.11.3.4 Catch Basin Inserts

Catch basin inserts are manufactured frames that typically incorporate filters or fabric and placed in a curb opening or drop inlet to remove trash, sediment, or debris. They can also be perforated metal screens placed horizontally or vertically within a catch basin. These devices have less hydraulic effect than the vortex separation systems or the GSRDs, however, flooding is still a potential hazard if the filters or screens became blocked by trash and debris and prevent the discharge of storm water. This would be of particular concern in areas susceptible to high leaf-litter rates. This potential impact can be mitigated through the use of inserts that are designed with automatic release mechanisms or retractable screens that allow flow-through during wet-weather and by performing regular maintenance to prevent the build up of trash and debris. Therefore, the exposure of people and property to flooding hazards after mitigation should be less then significant.

7.11.3.5 Increased Street Sweeping

It is not reasonably foreseeable that increased street sweeping would negatively impact hydrology or water quality.

7.11.3.6 Enforcement of Litter Laws

It is not reasonably foreseeable that enforcement of litter laws would negatively impact hydrology or water quality.

7.11.3.7 Public Education

It is not reasonably foreseeable that public education would negatively impact hydrology or water quality.

7.11.4 Summary

Installation and maintenance of some structural trash-reduction BMPs could result in potentially significant environmental effects with regard to hydrology. However, mitigation measures which can be applied to reduce and/or eliminate these impacts are available as described above. These mitigation measures are within the responsibility and jurisdiction of the responsible agencies in the Trash TMDL and can or should be adopted by them (California Code of Regulations, title 14, section 15091(a)(2)). The Regional Board does not direct which compliance measures responsible agencies choose to adopt nor which mitigation measures they employ. The Regional Board does, however, recommend that appropriate mitigation measures be applied in order that potential environmental impacts be reduced or avoided. It is foreseeable that these mitigation measures may not always be capable of reducing these impacts to levels that are less than significant in every conceivable instance. In the event that a specific mitigation measure or alternative may not reduce impacts to levels that are less than significant, the project proponent may need to consider an alternative strategy or combination of strategies to comply with the TMDL.

7.12 LAND USE

This section provides an overview of land uses within the Los Angeles River Watershed and an analysis of impacts to land use and planning associated with implementation of the Los Angeles River Trash TMDL. The reasonable foreseeable impacts are analyzed for the structural compliance measures such as vortex separation systems, gross solids removal devices, trash nets, catch basin inserts, as well as non-structural alternatives such as increased street sweeping, enforcement of existing litter laws, storm drain cleaning and public education. Where applicable, mitigation measures to reduce the impacts associated with each alternative are provided.

7.12.1 Environmental Setting

Land Use

The urban portion of the Los Angeles River Watershed was divided into twelve types of land uses for every city and unincorporated area in the watershed. Similar land use classifications already exist on the land use maps used by Los Angeles County Department of Public Works to assess the generation of certain pollutants by land use.[5] The land use categories are: (1) high density residential[6], (2) low density residential[7], (3) commercial and services, (4) industrial, (5) public facilities[8], (6) educational institutions[9], (7) military installations, (8) transportation[10], (9) mixed urban[11], (10) open space and recreation[12], (11) agriculture[13], and (12) water[14]. Given that the minimum mapping resolution is 2.5 acres, a non-critical land use unit may not be mapped if it is less than 2.5 acres in size[15].

Land use planning in municipalities throughout California is implemented using two major tools, the general plan and the zoning ordinance. The City of Los Angeles General Plan

---

[5] The land use classification was developed by Aerial Information Systems as a modified Anderson Land Use Classification and originally included 104 categories. The land use coverages were donated for GIS library use by Southern California Association of Governments (SCAG), and show land use for 1990 and for 1993. The coverages were map-joined into a single coverage by Teale Data Center. The Regional Board layers were aggregated from the TDC coverage into the land uses shown above.

[6] High Density Residential includes High Density Single Family Residential and all Multi Family Residential, Mobile Homes, Trailer Parks and Rural Residential High Density.

[7] Under 2 units per acre.

[8] These include government centers, police and sheriff stations, fire stations, medical health care facilities, religious facilities large enough to be distinguished on an aerial photograph, libraries, museums, community centers, public auditoriums, observatories, live indoor and outdoor theaters, convention centers which were built prior to 1990, communication facilities, and utility facilities (electrical, solid waste, liquid waste, water storage and water transfer, natural gas and petroleum).

[9] Preschools and daycare centers, elementary schools, high schools, colleges and universities, and trade schools, including police academies and fire fighting training schools.

[10] Airports, railroads, freeways and major roads (that meet the minimum mapping resolution of 2.5 acres), park and ride lots, bus terminals and yards, truck terminals, harbor facilities, mixed transportation and mixed transportation and utility.

[11] Mixed commercial, industrial and/or residential, and areas under construction or vacant in 1990.

[12] Golf courses, local and regional parks and recreation, cemeteries, wildlife preserves and sanctuaries, botanical gardens, beach parks.

[13] Orchards and vineyards, nurseries, animal intensive operations, horse ranches.

[14] Open water bodies, open reservoirs larger than 5 acres, golf course ponds, lakes, estuaries, channels, detention ponds, percolation basins, flood control and debris dams.

[15] Critical land uses were mapped regardless of resolution limits. Critical land use units below 1 acre in size were mapped as 1-acre units.

(General Plan) prepared and maintained by the Department of City Planning is a comprehensive, long range document containing the purposes, policies, and programs for the development of the City of Los Angeles. The General Plan is a dynamic document consisting of eleven separate elements; ten of which are citywide elements and the land use element, which includes plans for each of the City's 35 Community Planning Areas. The General Plan is approved by the City Planning Commission and the Mayor and adopted by the City Council. (LA City Planning Department, 2006)

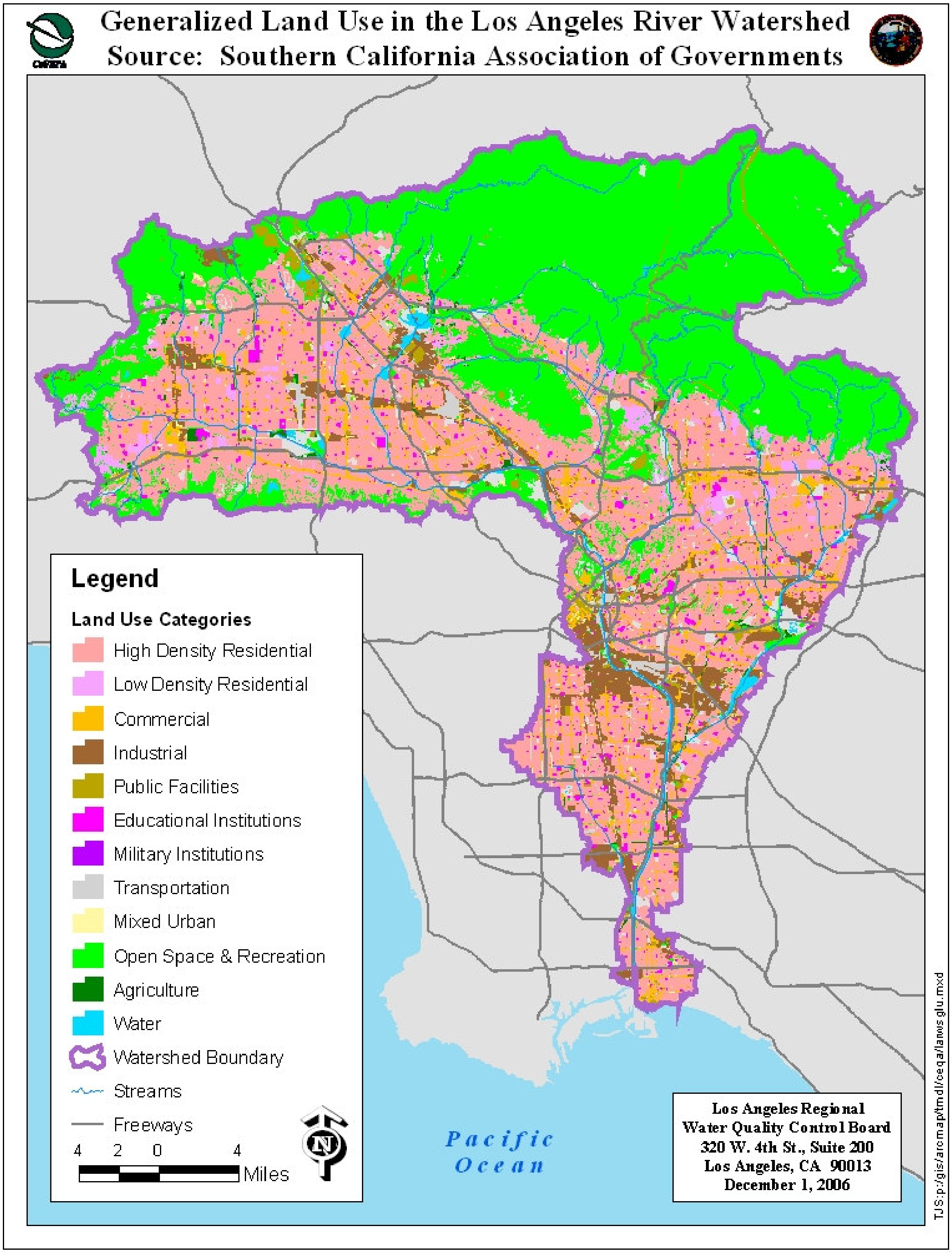
Table 7.12-1 shows the square mileage for each land use for each city and unincorporated areas in the watershed. Unincorporated areas include areas such as Altadena, East Compton, East Los Angeles, East Pasadena, East San Gabriel, Florence, La Crescenta, Mayflower Village, North El Monte, South San Gabriel, Walnut Park, Westmount and Willowbrook. For cities that are partially located in the watershed, the square mileage indicated is only for the part of the city that is in the watershed. Land uses for the Los Angeles River Watershed are shown in Figure 7.12-1.

Table 7.12-1.Square mileage estimated for each land use for cities in the watershed, and for unincorporated areas.

Jurisdiction	High Density Residential	Low Density Residential	Commercial	Industrial	Public Facilities	Educational Institutions	Military	Transportation	Mixed Urban	Open Space	Agriculture	Water	Recreation	Total
Alhambra	5.12	0.01	0.89	0.29	0.23	0.32	0.00	0.39	0.01	0.04	0.00	0.02	0.29	**7.61**
Arcadia	6.55	0.97	1.28	0.23	0.23	0.22	0.00	0.23	0.01	0.34	0.00	0.19	0.68	**10.94**
Bell	1.21	0.00	0.27	0.45	0.20	0.08	0.04	0.20	0.00	0.02	0.00	0.27	0.01	**2.74**
Bell Gardens	1.41	0.00	0.32	0.26	0.03	0.16	0.00	0.02	0.00	0.03	0.09	0.05	0.12	**2.49**
Bellflower	0.04	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	**0.06**
Bradbury	0.03	0.57	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.59	0.18	0.02	0.01	**1.41**
Burbank	8.03	0.01	1.56	1.27	0.43	0.35	0.01	1.28	0.07	3.72	0.01	0.06	0.56	**17.36**
Calabasas	2.05	0.12	0.21	0.00	0.02	0.12	0.00	0.04	0.02	2.59	0.03	0.03	0.35	**5.58**
Carson	0.26	0.00	0.01	0.51	0.00	0.02	0.00	0.06	0.00	0.00	0.00	0.01	0.01	**0.88**
Commerce	0.65	0.00	0.55	3.73	0.26	0.04	0.00	1.09	0.03	0.07	0.01	0.02	0.11	**6.57**
Compton	4.43	0.01	0.73	1.58	0.16	0.71	0.01	0.53	0.03	0.14	0.06	0.09	0.12	**8.60**
Cudahy	0.76	0.00	0.09	0.16	0.01	0.06	0.00	0.00	0.00	0.00	0.00	0.01	0.02	**1.12**
Downey	5.29	0.02	0.76	0.16	0.47	0.39	0.00	0.15	0.00	0.02	0.00	0.11	0.43	**7.80**
Duarte	0.74	0.01	0.21	0.11	0.18	0.06	0.00	0.09	0.01	0.85	0.00	0.01	0.05	**2.30**
El Monte	3.74	0.00	1.06	0.98	0.15	0.31	0.00	0.43	0.03	0.03	0.00	0.18	0.07	**6.97**
Glendale	12.54	0.13	1.87	0.72	1.08	0.44	0.00	0.67	0.12	11.99	0.01	0.10	0.95	**30.63**
Hidden Hills	0.01	1.29	0.00	0.00	0.00	0.01	0.00	0.01	0.00	0.23	0.01	0.00	0.00	**1.57**
Huntington Park	1.60	0.00	0.53	0.50	0.05	0.16	0.00	0.11	0.03	0.00	0.00	0.00	0.06	**3.03**
Irwindale	0.02	0.00	0.06	1.00	0.07	0.00	0.00	0.09	0.01	0.08	0.00	0.57	0.00	**1.89**

Jurisdiction	High Density Residential	Low Density Residential	Commercial	Industrial	Public Facilities	Educational Institutions	Military	Transportation	Mixed Urban	Open Space	Agriculture	Water	Recreation	Total
La Cañada Flintridge	2.94	2.03	0.18	0.15	0.23	0.17	0.00	0.25	0.00	2.16	0.06	0.04	0.37	**8.58**
Long Beach	9.56	0.02	1.76	1.08	0.41	0.53	0.00	1.16	0.08	0.32	0.26	0.81	0.69	**16.67**
Los Angeles	146.95	6.86	17.04	16.81	8.83	7.72	0.13	11.66	2.16	45.85	2.61	5.11	9.77	**281.49**
Los Angeles County	24.75	2.20	2.35	4.39	1.39	1.01	0.02	1.88	0.18	25.59	0.76	0.66	2.99	**68.16**
Lynwood	2.99	0.00	0.49	0.44	0.09	0.24	0.00	0.47	0.05	0.03	0.00	0.00	0.05	**4.86**
Maywood	0.85	0.00	0.15	0.08	0.01	0.04	0.00	0.02	0.01	0.01	0.00	0.00	0.01	**1.19**
Monrovia	3.26	0.30	0.57	0.56	0.11	0.16	0.00	0.16	0.03	4.94	0.00	0.08	0.16	**10.34**
Montebello	3.86	0.00	0.71	1.68	0.40	0.33	0.00	0.31	0.01	0.22	0.12	0.21	0.51	**8.37**
Monterey Park	4.63	0.00	0.64	0.22	0.52	0.28	0.00	0.20	0.03	0.81	0.14	0.01	0.18	**7.67**
Paramount	1.89	0.00	0.44	0.99	0.08	0.22	0.00	0.24	0.04	0.06	0.17	0.14	0.08	**4.35**
Pasadena	11.93	1.19	2.28	0.30	1.02	0.98	0.02	0.89	0.06	2.63	0.09	0.25	1.06	**22.71**
Pico Rivera	1.17	0.02	0.21	0.54	0.02	0.06	0.00	0.12	0.02	0.01	0.02	0.89	0.04	**3.13**
Rosemead	3.31	0.00	0.73	0.15	0.13	0.28	0.00	0.19	0.02	0.07	0.11	0.01	0.15	**5.14**
San Fernando	1.43	0.00	0.42	0.30	0.06	0.08	0.00	0.03	0.01	0.01	0.00	0.03	0.04	**2.42**
San Gabriel	2.86	0.01	0.54	0.09	0.09	0.14	0.00	0.05	0.02	0.02	0.07	0.00	0.23	**4.12**
San Marino	2.21	0.87	0.07	0.00	0.12	0.11	0.00	0.08	0.00	0.01	0.00	0.00	0.30	**3.77**
Santa Clarita	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.02	0.00	0.20	0.00	0.00	0.00	**0.21**
Sierra Madre	1.71	0.06	0.05	0.01	0.05	0.06	0.00	0.00	0.00	0.93	0.01	0.06	0.04	**3.00**
Signal Hill	0.19	0.00	0.18	0.55	0.02	0.03	0.00	0.05	0.04	0.04	0.00	0.00	0.04	**1.14**
Simi Valley	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.03	0.00	0.00	0.00	**0.03**
South El Monte	0.58	0.00	0.15	1.14	0.03	0.04	0.00	0.01	0.02	0.05	0.03	0.02	0.02	**2.10**
South Gate	3.92	0.00	0.78	1.25	0.18	0.26	0.00	0.40	0.07	0.04	0.10	0.22	0.27	**7.48**
South Pasadena	2.43	0.13	0.20	0.00	0.06	0.10	0.00	0.09	0.02	0.24	0.01	0.01	0.13	**3.43**
Temple City	3.44	0.00	0.27	0.08	0.07	0.12	0.00	0.01	0.00	0.00	0.00	0.00	0.03	**4.02**
Ventura County	0.19	1.23	0.00	0.26	0.01	0.00	0.00	0.00	0.01	8.37	0.03	0.00	0.02	**10.11**
Vernon	0.00	0.00	0.02	3.85	0.09	0.00	0.00	0.82	0.01	0.06	0.00	0.23	0.00	**5.09**
Totals	**291.54**	**18.09**	**40.62**	**46.86**	**17.58**	**16.39**	**0.22**	**24.52**	**3.28**	**113.46**	**5.01**	**10.52**	**21.02**	**609.12**

7.12-1: Generalized Land Use in the Los Angeles River Watershed



7.12.2 Thresholds of Significance

For the purposes of the analysis in this SED, the proposed project would have a significant environmental impact on land use if it would:

- Physically divide an established community;
- Conflict with any applicable land use plan, policy, or regulation to an agency with jurisdiction over the project (including, but not limited to the general plan, specific plan, local coastal program, or zoning ordinance) adopted for the purpose of avoiding or mitigating an environmental effect; or
- Conflict with any applicable habitat conservation plan or natural community conservation plan.

7.12.3 Environmental Impacts

Potential environmental impacts are evaluated based on the above thresholds of significance. The reasonably foreseeable impacts are identified for the installation and operation phases of each alternative. Where applicable, mitigation measures to reduce the impacts associated with each alternative are provided. The thresholds reflect relevant issues and issues raised during the CEQA scoping meeting and the draft Los Angeles River Trash TMDL.

7.12.3.1 Vortex Separation Systems

Vortex Separation Systems (i.e. CDS unit) are installed below grade and are appropriate for highly urbanized areas where space is limited. In general a vortex separation system occupies about 4-1/2 square feet of plan view area for each cfs of runoff that is treated with the bulk of the plan view area being well below grade. Maintenance of the CDS unit involves the removal of the solids either by using a vactor truck, a removable basket or a clam shell excavator depending on the design and size of the unit.

The installation of vortex separation systems may require modification of storm water conveyance structures; however, these units would generally be sited below grade and within existing storm drain infrastructure. The installation of vortex separation systems 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 specify 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 trash removal devices. The various cities that might install these devices will need to identify local land use plans as part of a program-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.

Construction of vortex separation systems will not result in permanent features such as above-ground infrastructure that would disrupt, divide, or isolate existing communities or land uses. 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.

7.12.3.2 Gross Solids Removal Devices

The Gross Solids Removal Devices (GSRDs) were developed by Caltrans to be retrofitted below grade into existing highway drainage systems or installed in future highway drainage systems. These devices are appropriate for highly urbanized areas where space is limited. The GSRDs can be designed to accommodate vehicular loading. Maintenance of the devices involves the removal of the solids either by using a vactor truck or other equipment.

The installation of GSRDs may require modification of storm water conveyance structures; however, these units would generally be sited below grade and within existing storm drain infrastructure. The installation of GSRDs 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 specify 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 trash removal 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.

Construction of GSRDs will not result in permanent features such as above-ground infrastructure that would disrupt, divide, or isolate existing communities or land uses. 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.

7.12.3.3 Trash Nets

Since, trash nets can be installed at or below grade within existing storm water conveyance structures or retrofitted to an existing outfall structure with only minor modifications no adverse impacts are expected on present or planned land use.

7.12.3.4 Catch Basin Inserts

Since, catch basin inserts can be installed at or below grade within existing storm water catch basins with minor modifications to the storm water conveyance structure no adverse impacts are expected on present or planned land use.

7.12.3.5 Increased Street Sweeping

It is not reasonably foreseeable that increased street sweeping would alter present or planned land use.

7.12.3.6 Enforcement of Litter Laws

It is not reasonably foreseeable that enforcement of litter laws would alter present or planned land use.

7.12.3.7 Public Education

It is not reasonably foreseeable that public education would alter present or planned land use.

7.13 NOISE AND VIBRATION

This section addresses the potential impacts that could result to surrounding land uses from noise from installation and maintenance of trash reduction Best Management Practices (BMPs) used to achieve compliance with the Los Angeles River Watershed Trash TMDL. In addition, the significance of those impacts, if anticipated, is analyzed for each of the Implementation Alternatives. Where applicable, mitigation to reduce the impacts of the implementation alternatives is provided.

7.13.1 Background

7.13.1.1 Noise

The California Health and Safety Code Section 46022 defines noise as "excessive undesirable sound, including that produced by persons, pets and livestock, industrial equipment, construction, motor vehicles, boats, aircraft, home appliances, electric motors, combustion engines, and any other noise-producing objects". The degree to which noise can affect the human environment range from levels that interfere with speech and sleep (annoyance and nuisance) to levels that cause adverse health effects (hearing loss and psychological effects). Human response to noise is subjective and can vary greatly from person to person. Factors that influence individual response include the intensity, frequency, and pattern of noise; the amount of background noise present before the intruding noise; and the nature of work or human activity that is exposed to the noise source.

Sound results from small and rapid changes in atmospheric pressure. These cyclical changes in pressure propagate through the atmosphere and are often referred to as sound waves. The greater the amount of variation in atmospheric pressure (amplitude), the greater the loudness (sound level). Sound levels are most often measured on a logarithmic scale of decibels (dB). The decibel scale compresses the audible acoustic pressure levels which can vary from 20 micropascals (µPa), the threshold of hearing and reference pressure (0 dB), to 20 million µPa, the threshold of pain (120 dB) (Air & Noise Compliance, 2006). Table 7.13-1 provides examples of noise levels from common sounds.

Table 7.13-1 Common Sound Levels

Outdoor Sound Levels	Sound Pressure (μPa)	Sound Level (dBA)	Indoor Sound Levels
	6,324,555	**110**	Rock Band at 5m
Jet Over-flight at 300m		**105**	
	2,000,000	**100**	Inside NY Subway Train
Gas Lawn Mower at 1m		**95**	
	632,456	**90**	Food Blender at 1m
Diesel Truck at 15m		**85**	
Noisy Urban Area (daytime)	**200,000**	**80**	Garbage Disposal at 1m
		75	Shouting at 1m
Gas Lawn Mower at 30m	**63,246**	**70**	Vacuum Cleaner at 3m
Suburban Commercial Area		**65**	Normal Speech at 1m
	20,000	**60**	
Quiet Urban Area (daytime)		**55**	Quiet Conversation at 1m
	6,325	**50**	Dishwasher in Adjacent Room
Quiet Urban Area (nighttime)		**45**	
	2,000	**40**	Empty Theater or Library
Quiet Suburb (nighttime)		**35**	
	632	**30**	Quiet Bedroom at Night
Quiet Rural Area (nighttime)		**25**	Empty Concert Hall
Rustling Leaves	**200**	**20**	
		15	Broadcast and Recording Studios
	63	**10**	
		5	
Reference Pressure Level	**20**	**0**	Threshold of Hearing

Source; (Air & Noise Compliance, 2006)

To determine ambient (existing) noise levels, noise measurements are taken using various noise descriptors. The following are brief definitions of typical noise measurements:

Community Noise Equivalent Level
The community noise equivalent level (CNEL) is an average sound level during a 24-hour day. The CNEL noise measurement scale accounts for noise source, distance, single-event duration, single-event occurrence, frequency, and time of day. Humans react to sound between 7:00 p.m. and 10:00 p.m. as if the sound were actually 5 decibels higher than if it occurred from 7:00 a.m. to 7:00 p.m. From 10:00 p.m. to 7:00 a.m., humans perceive sound as if it were 10 dBA higher than if it occurred from 7:00 a.m. to 7:00 p.m. due to the lower background noise level. Hence, the CNEL noise measurement scale is obtained by adding an additional 5 decibels to sound levels in the evening from 7:00 p.m. to 10:00 p.m., and 10 dBA to sound levels in the night after 10:00 p.m. and before 7:00 a.m. Because CNEL accounts for human sensitivity to sound, the CNEL 24-hour figure is always a higher number than the actual 24-hour average.

Equivalent Noise Level
Equivalent noise level (Leq) is the average noise level on an energy basis for any specific time period. The Leq for 1 hour is the energy average noise level during the hour. The average noise level is based on the energy content (acoustic energy) of the sound. Leq can be thought of as the level of a continuous noise that has the same energy content as the fluctuating noise level. The equivalent noise level is expressed in units of dBA.

Sound Exposure Level
Sound exposure level (SEL) is a measure of the cumulative sound energy of a single event. This means that louder events have greater SELs than quieter events. Additionally, events that last longer have greater SELs than shorter events.

Audible Noise Changes
Studies have shown that the smallest perceptible change in sound level for a person with normal hearing sensitivity is approximately 3 decibels. A change of at least 5 decibels would be noticeable and likely would evoke a community reaction. A 10-decibel increase is subjectively heard as a doubling in loudness and would most certainly cause a community response. Noise levels decrease as the distance from the noise source to the receiver increases. Noise generated by a stationary noise source, or “point source,” will decrease by approximately 6 decibels over hard surfaces and 9 decibels over soft surfaces for each doubling of the distance. For example, if a noise source produces a noise level of 89 dBA at a reference distance of 50 feet, then the noise level would be 83 dBA at a distance of 100 feet from the noise source, 77 dBA at a distance of 200 feet, and so on over hard surfaces. Generally, noise is most audible when traveling along direct line-of-sight. Barriers, such as walls, berms, or buildings that break the line-of-sight between the source and the receiver greatly reduce noise levels from the source because sound can reach the receiver only by bending over the top of the barrier (diffraction). Sound barriers can reduce sound levels by up to 20 dBA. However, if a barrier is not high or long enough to break the line-of-sight from the source to the receiver, its effectiveness is greatly reduced.

Sensitive Receptors

Land uses that are considered sensitive to noise impacts are referred to as “sensitive receptors.” Noise-sensitive receptors consist of, but are not limited to, schools, religious institutions, residences, libraries, parks, hospitals, and other care facilities.

7.13.1.2 Vibration

In contrast to airborne noise, ground-borne vibration is not a common environmental problem. It is unusual for vibration from sources such as buses and trucks to be perceptible, even in locations close to major roads. Some common sources of ground-borne vibration are trains, buses on rough roads, and construction activities such as blasting, pile-driving and operating heavy earth-moving equipment. The effects of ground-borne vibration include feelable movement of the building floors, rattling of windows, shaking of items on shelves or hanging on walls, and rumbling sounds. In extreme cases, the vibration can cause damage to buildings.. A vibration level that causes annoyance will be well below the damage threshold for normal buildings.

The background vibration velocity level in residential areas is usually 50 VdB or lower, well below the threshold of perception for humans which is around 65 VdB. Most perceptible indoor vibration is caused by sources within buildings such as operation of mechanical equipment, movement of people or slamming of doors. Typical outdoor sources of perceptible ground-borne vibration are construction equipment, steel-wheeled trains, and traffic on rough roads. If the roadway is smooth, the vibration from traffic is rarely perceptible. Figure 7-13-1 illustrates common vibration sources and the human and structural response to ground-borne vibration. The range of interest is from approximately 50 VdB to 100 VdB. Background vibration is usually well below the threshold of human perception and is of concern only when the vibration affects very sensitive manufacturing or research equipment. Electron microscopes and high-resolution lithography equipment are typical of equipment that is highly sensitive to vibration.

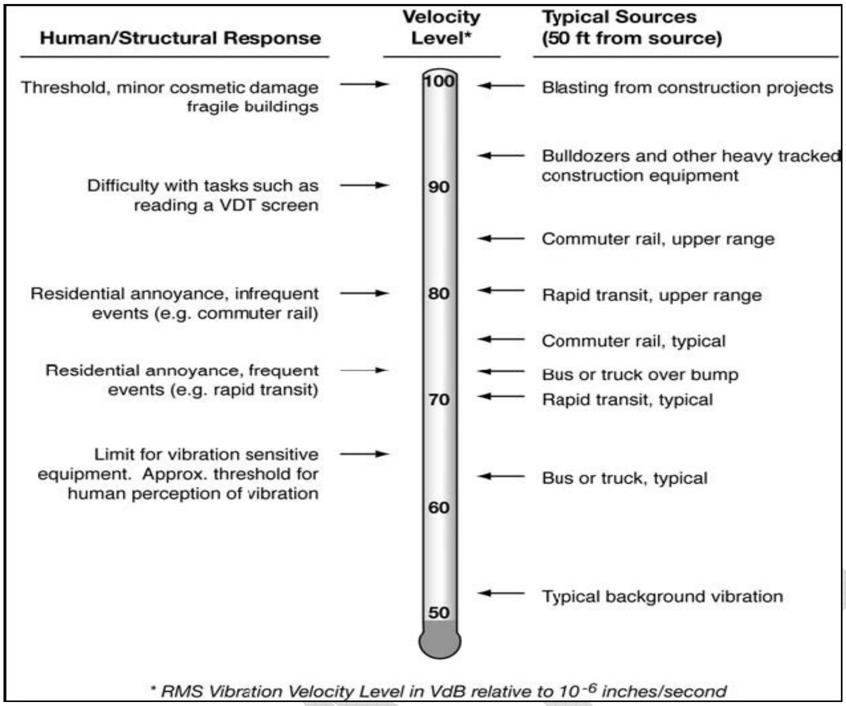


Figure 7.13-1: Typical Levels of Groundbourne Vibration (Source: Federal Transit Administration, 2006)

7.13.2 General Setting

Noise

The TMDL compliance area includes all portions of cities located in the Los Angeles River Watershed, as well as unincorporated areas of Los Angeles County within these boundaries. Existing noise environments within the watershed will vary considerably based on the diversity of land uses and densities. In most urban environments automobile, truck, and bus traffic is the major source of noise. Traffic generally produces background sound levels that remain fairly constant with time. Individual high-noise-level events that can occur from time to time include honking horns, sirens, operation of construction equipment, and passbys of noisy vehicles like trucks or buses. Air and rail traffic and commercial and industrial activities are also major sources of noise in some areas. In addition, air conditioning and ventilating systems contribute to the noise levels in residential areas, particularly during the summer months.

Regulatory Framework

Federal regulations are not applicable to the TMDL Implementation Alternatives, however, the California Office of Noise Control has developed guidelines showing a range of noise standards for various land use categories. Cities within the state have incorporated this compatibility matrix into their General Plan noise elements. These guidelines are meant to maintain acceptable noise levels in a community setting based on the type of land use. Noise compatibility by different types of land uses is a range from “Normally Acceptable” to “Clearly Unacceptable” levels. The guidelines are used by cities within the state to help determine the appropriate land uses that could be located within an existing or anticipated ambient noise level.

Some of the TMDL implementation alternatives have the potential to affect noise levels within the County of Los Angeles and the cities within the watershed of the Los Angeles River. Noise within the County of Los Angeles and these cities are regulated by noise ordinances, which are found in the municipal code of the County and each city (see Table 7.13-2). These noise ordinances limit intrusive noise and establish sound measurements and criteria, minimum ambient noise levels for different land use zoning classifications, sound emission levels for specific uses, hours of operation for certain activities (such as construction and trash collection), standards for determining noise deemed a disturbance of the peace, and legal remedies for violations.

Table 7.13-2 Noise ordinances for several Los Angeles River Watershed Cities

City	Noise Regulation
Alhambra	Title XVIII Chapter 18.02 NOISE AND VIBRATION CONTROL REGULATIONS
Arcadia	Title IV CHAPTER 6 NOISE REGULATIONS
Bell Gardens	Title 16 16.24 Noise Regulation
Burbank	Chapter 21 ARTICLE 2. NOISE CONTROL.
Calabasas	Title 8 Chapter 8.20 PUBLIC NUISANCE AND ABATEMENT
Carson	Title 8 Chapter 8.08 NUISANCES
Compton	Chapter XXXV HEALTH CODE
Downey	article 4 Chapter 6 – UNNECESSARY NOISES
Duarte	Title 9 Chapter 9.32 NUISANCES
El Monte	Title 8 Chapter 8.36 NOISE CONTROL
Glendale	Title 8 8.36 NOISE CONTROL
Hidden Hills	Title 3 Chapter 8 NOISE CONTROL
Huntington Park	Title 5 Chapter 11 NUISANCES
Irwindale	Title 9 Chapter 9.28 NOISE REGULATION
Long Beach	Title 8 Chapter 8.80 NOISE
Los Angeles	Title 12 Chapter 12.08 NOISE CONTROL
Lynwood	Chapter 3 3-12 NOISE: :
Monrovia	Title 9 9.44 NOISE
Montebello	Title 8 Chapter 8.16 NUISANCES
Monterey Park	Title 9 Chapter 9.53 NOISE
Pasadena	Title 9 Chapter 9.36 NOISE RESTRICTIONS4
Pico Rivera	Title 8 Chapter 8.40 NOISE
San Fernando	Chapter 34 Article II. NOISE
San Gabriel	Title IX Chapter 98. NUISANCES
San Marino	Chapter XIV Article 4 NOISE CONTROL
Santa Clarita	Title 11 Chapter 11.44 NOISE LIMITS
Sierra Madre	Title 8 Chapter 8.16 SITE NUISANCES
Signal Hill	Title 9 9.16 NOISE
Simi Valley	Title 5 Chapter 16 NOISE
South Gate	Title 7 Chapter 7.44 NOISE
South Pasadena	Chapter 19A
Temple City	Title 4 Chapter 2: NUISANCES
Whittier	Title 8 Chapter 8.32 NOISE CONTROL
Los Angeles County	Title 12 Chapter 12.08

Vibration
Major sources of groundborne vibration in the TMDL compliance area would typically include trucks and buses operating on surface streets, and freight and passenger train operations. The most significant sources of construction-induced groundborne vibrations are pile driving and blasting – neither of which would be involved in the installation or maintenance of the trash TMDL structural implementation alternatives. Currently, the state of California has no vibration regulations or guidelines.

7.13.3 Thresholds of Significance

According to Appendix G of the State CEQA Guidelines, a project would normally have a significant effect on the environment if it would:

- Exposure of persons to or generation of noise levels in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies.

- Exposure of persons to or generation of excessive groundborne vibration or groundborne noise levels.

- A substantial permanent increase in ambient noise levels in the project vicinity above levels existing without the project.

- A substantial temporary or periodic increase in ambient noise levels in the project vicinity above levels existing without the project.

- For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, the project exposes people residing or working in the project area to excessive noise levels.

- For a project within the vicinity of a private airstrip, the project exposes people residing or working in the project area to excessive noise levels.

7.13.4 Environmental Impacts

Overall, installation noise levels are governed primarily by the noisiest pieces of equipment. For most construction equipment, the engine, is the dominant noise source. Table 4.2-2 identifies the major pieces of construction equipment associated with the various stages of installation. Typical maximum noise emission levels (Lmax) are summarized, based on construction equipment operating at full power at a reference distance of 50 feet, and an estimated equipment usage factor based on experience with other similar installation projects. The usage factor is a fraction that accounts for the total time during an eight-hour day in which a piece of installation equipment is producing noise under full power. Although the noise levels in Table 7.17-3 represent typical values, there can be wide fluctuations in the noise emissions of similar equipment based on two important factors: (1) the operating condition of the equipment (e.g., age, presence of mufflers and engine cowlings); and (2) the technique used by the equipment operator (aggressive vs. conservative).

Table 7.13-3: Typical Installation Equipment Noise Emission Levels

Equipment	Maximum Noise Level, (dBA) 50 feet from source	Equipment Usage Factor	Total 8-hr Leq exposure (dBA) at various distances	
			50ft	100ft
Foundation Installation			83	77
Concrete Truck	*82*	*0.25*	76	70
Front Loader	*80*	*0.3*	75	69
Dump Truck	*71*	*0.25*	65	59
Generator to vibrate concrete	*82*	*0.15*	74	68
Vibratory Hammer	*86*	*0.25*	80	74
Equipment Installation			83	77
Flatbed truck	*78*	*0.15*	70	64
Forklift	*80*	*0.27*	74	69
Large Crane	*85*	*0.5*	82	76

Source; Caltrain, 2004

Table 7.13-4: Community Noise Exposure Ranges for Different Land uses

Land Use	Community Noise Exposures –CNEL (dB)			
	Normally Acceptable	Conditionally Acceptable	Normally Unacceptable	Clearly Unacceptable
Single Family, Duplex, Mobile Homes	50-60	55-70	70-75	above 70
Multi-Family Homes	50-65	60-70	70-75	above 70
Schools, Libraries, Churches, Hospitals Nursing Homes	50-70	60-70	70-80	above 80
Transient Lodging – Motels, Hotels	50-65	60-70	70-80	above 80
Auditoriums, Concert Halls, Amphitheaters	-	50-70	-	above 65
Sports Arena, Outdoor Spectator Sports	-	50-75	-	above 70
Playground, Neighborhood Parks	50-70	-	67-75	above 72
Golf Courses, Horse Stables, Water Recreation, Cemeteries	50-75	-	70-80	above 80
Office Buildings, Business and Professional Commercial	50-70	67-77	above 75	-
Industrial, Manufacturing, Utilities, Agriculture	50-75	70-80	above 75	-

7.13.4.1 Vortex Separation Systems (CDS Units)

Installation of vortex separation systems would potentially involve removal of asphalt and concrete from streets and sidewalks, excavation and shoring, installation of reinforced concrete pipe, installation of the unit, and repaving of the streets and sidewalks. It is anticipated that installation activities would occur in limited, discrete, and discontinuous areas over a short duration. No major construction activities are anticipated. It is anticipated that excavation, for the purpose of installation, and repaving would result in the greatest increase in noise levels during the period of installation. Table 7.13-3 provides noise levels generated by different machinery that may be used in installing the vortex separation systems. The manufacturer of the CDS unit recommends that the unit receive maintenance 2 to 4 times a year depending on amount and frequency of precipitation. Maintenance involves cleaning using vacuum trucks, which would increase ambient noise levels. The increase in noise levels would be dependent on the proximity of sensitive receptors to the site. Maintenance is also expected to generate 2-4 vehicle trips per year which is not expected to increase ambient noise levels noticeably.

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

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

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

- Perform noise and vibration monitoring to demonstrate compliance with the noise limits. Independent monitoring should be performed to check compliance in particularly sensitive areas. Require contractors to modify and/or reschedule their installation activities if monitoring determines that maximum limits are exceeded at residential land uses.

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

- Turn off idling equipment.

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

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

These and other measures can be classified into three distinct approaches as outlined in Table 7.13-5

Table 7.13-5: Noise Abatement Measures

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

Adapted from Thalheimer, 2000

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

7.13.4.2 Catch Basin Inserts

Installation of catch basin inserts should not involve any construction activity or the use of major equipment therefore no significant increase in ambient noise levels is anticipated.

Catch Basins need to be cleaned regularly. Frequency of cleaning depends on the amount of trash flowing into the insert. Increased street sweeping can decrease the amount of trash, caught by catch basin inserts. Catch basins are cleaned out on varying schedules at a minimum frequency of once a year as a requirement of the MS4 permit. This implementation measure does not require an increase in cleaning frequency above what is already required for existing permits, therefore no significant increase in noise levels are anticipated.

It is not anticipated that ambient noise levels will be adversely affected by the use of catch basin inserts. To the contrary it is expected that since the design of many of these inserts act to prevent trash from entering the catch basins, the frequency of cleanouts of these basins may be reduced as a result of reduced trash loading. However, in the unlikely event that there should be an increase in noise levels generated by current clean-out practices, the source, path and receptor control measures presented in Table 7.13-5 should be applied.

7.13.4.3 Trash Nets

Installation of trash nets should not involve any construction activity or the use of major equipment therefore no significant increase in ambient noise levels is anticipated.

Maintenance of the trash nets involves replacing the nets when full or after each major storm event as necessary. Frequency of maintenance would depend on the trash volumes generated in the catchment area of the net. Equipment used to detach and haul away the trash nets may result in temporary increases in ambient noise levels.

In areas where noise levels have the potential to be classified as nuisance, efforts should be made to implement source receptor and path control measures as outlined in Table 7.13-5

7.13.4.4 Gross Solids Removal Devices (GSRDs)

GSRD are the trash-reduction BMPs being used by the California Department of Transportation (Caltrans) for highway drainage systems and as such will be located adjacent to freeways and major highways under Caltrans' jurisdiction. Installation of GSRDs would involve activities similar to those for vortex separation system installation. Clean-outs of GRSD systems are expected to occur only once per year. Equipment and/or machinery employed in this exercise may not significantly increase ambient noise levels as the potential sites for these units will already be subject to high traffic noise levels. In addition, increase in noise levels due to clean-outs will be of low frequency and short duration.

In areas where noise levels have the potential to be classified as nuisance, efforts should be made to implement source receptor and path control measures as outlined in Table 17.13-5

7.13.4.5 Increased Street Sweeping

Increased street sweeping would involve an increase in current street sweeping frequencies in order to reduce the amount of trash accumulating on streets between cleanings. Any increases in street sweeping frequencies would be geared towards high trash generation areas such as those with commercial and industrial land-uses. The increase in ambient noise levels is expected to be limited in duration.

In areas where noise levels have the potential to be classified as nuisance, efforts should be made to implement source receptor and path control measures as outlined in Table 7.13-5

7.13.4.6 Enforcement of Litter Laws & Public Education

Litter enforcement and public education are not expected to create any increases in ambient noise levels, hence no mitigation would be required.

7.13.5 Project-level Impacts

Increases in noise levels during installation and/or maintenance of some of the implementation alternatives will vary depending on the existing ambient levels at each site. Once a site has been selected, project-level analysis to determine noise impacts will involve: (i) identifying sensitive receptors within a quarter-mile vicinity of the site,
(ii) characterizing existing ambient noise levels at these sensitive receptors,
(iii) determining noise levels of any and all installation and maintenance equipment, and
(iv) adjusting values for distance between noise source and sensitive receptor.
In addition, the potential for increased noise levels due to installation of trash reduction structural controls is limited and short-term. Given the size of the individual projects and the fact that installation would occur in small discrete locations, noise impacts during installation would not foreseeably be greater, and would likely be less onerous than, other types of typical construction activities in urbanized areas, such as ordinary road and infrastructure maintenance activities, building activities, etc. These short-term noise impacts can be mitigated by implementing commonly-used noise abatement procedures, standard construction techniques such as sound barriers, mufflers and employing restricted hours of operation. Applicable and appropriate mitigation measures could be evaluated when specific projects are determined, depending upon proximity of construction activities to receptors.

7.13.6 Summary

Installation and maintenance of some structural trash-reduction BMPs could result in potentially significant environmental effects with regard to noise. However, mitigation measures which can be applied to reduce and/or eliminate these impacts are available as described above. These mitigation measures are within the responsibility and jurisdiction of the responsible agencies in the Trash TMDL and can or should be adopted by them (California Code of Regulations, title 14, section 15091(a)(2)). The Regional Board does not direct which compliance measures responsible agencies choose to adopt nor which mitigation measures they employ. The Regional Board does, however, recommend that appropriate mitigation measures be applied in order that potential environmental impacts be reduced or avoided. It is foreseeable that these mitigation measures may not always be capable of reducing these impacts to levels that are less than significant in every conceivable instance. In the event that a specific mitigation measure or alternative may not reduce impacts to levels that are less than significant, the project proponent may need to consider an alternative strategy or combination of strategies to comply with the TMDL. To the extent that the alternatives, mitigation measures, or both, that are examined in this analysis are not deemed feasible by those local agencies, the necessity of implementing the federally required TMDL and removing the significant environmental effects from trash impairment in the Los Angeles River Watershed (an action required to achieve the express, national policy of the Clean Water Act) remains. "

7.14 Population and Housing

This section provides an overview of the population and housing resources within the Los Angeles River Watershed and an analysis of impacts to population and housing associated with implementation of the Los Angeles River Trash TMDL. The reasonably foreseeable impacts are analyzed for the structural compliance measures such as vortex separation systems, gross solids removal devices, trash nets, catch basin inserts, as well as non-structural alternatives such as increased street sweeping, enforcement of existing litter laws, storm drain cleaning and public education. Where applicable, mitigation measures to reduce the impacts associated with each alternative are provided.

7.14.1 Environmental Setting

Population and Housing

The Los Angeles River Watershed is a highly urbanized, densely populated area sustaining a robust level of growth over the last several decades. Table 7.14-1 provides 2000 Census population data and housing data for the County of Los Angeles, City of Los Angeles and other cities within the Los Angeles River Watershed. According to the 2000 Census, the total population in the County was approximately 9.5 million persons. The total population in the City was approximately 3.7 million persons over the same period. According to the 2000 Census, there were approximately 3.3 million housing units in the County of Los Angeles County and 1.3 million units in the City of Los Angeles. For cities that are only partially located within the watershed, the data indicated is for the entire city. Information for portions of the cities or County was not available.

Table 7.14-1: Population and Housing Data from the 2000 Census (U.S. Census Bureau)

City	Population	Housing
Los Angeles County	9,519,338	3,270,909
Los Angeles City	3,694,820	1,337,706
Alhambra	85,804	30,069
Arcadia	53,054	19,970
Bell	36,664	9,215
Bell Gardens	44,054	9,788
Bradbury	855	311
Burbank	100,316	42,847
Calabasas	20,033	7,426
Carson	89,730	25,337
Commerce	12,568	3,377
Compton	93,493	23,795
Cudahy	24,208	5,542
Downey	107,323	34,759
Duarte	21,486	6,805
El Monte	115,965	27,758
Glendale	194,973	73,713
Hidden Hills	1,875	592
Huntington Park	61,348	15,335
Irwindale	1,446	378
La Canada Flintridge	20,318	6,989
Lakewood	79,345	27,310
Long Beach	461,522	171,632
Lynwood	69,845	14,987
Maywood	28,083	6,701
Monrovia	36,929	13,957
Montebello	62,150	19,416
Monterey Park	60,051	20,209
Paramount	55,266	14,591
Pasadena	133,936	54,132
Pico Rivera	63,428	16,807
Rosemead	53,505	14,345
San Fernando	23,564	5,932
San Gabriel	39,804	12,909
San Marino	12,945	4,437
Sierra Madre	10,578	4,923
Signal Hill	9,333	3,797
South El Monte	21,144	4,724
South Gate	96,375	24,269
South Pasadena	24,292	10,850
Temple City	33,377	11,674
Vernon	91	26

7.14.2 Thresholds of Significance

The following thresholds for determining the significance of impacts related to population and housing are contained in the environmental checklist form contained in Appendix G of the most recent update of the California Environmental Quality Act Guidelines. Impacts related to population and housing are considered significant if the project would:

- Induce substantial population growth in an area, either directly (for example, by proposing new homes and businesses) or indirectly (for example, through the extension of roads or other infrastructure).

- Displace substantial numbers of existing housing, necessitating the construction of replacement housing elsewhere (issue is addressed within Section 5.0, Effects Found Not to be Significant).

- Displace substantial numbers of people, necessitating the construction of replacement housing elsewhere (issue is addressed within Section 5.0, Effects Found Not to be Significant).

7.14.3 Environmental Impacts

The reasonably foreseeable impacts are identified for the installation and operation phases of each alternative. Where applicable, mitigation measures to reduce the impacts associated with each alternative are provided. The thresholds reflect relevant issues identified in the CEQA checklist and issues raised during the CEQA scoping meeting and the draft Los Angeles River Trash TMDL.

7.14.3.1 Vortex Separation Systems

Vortex Separation Systems (i.e. CDS unit) are installed below grade and are appropriate for highly urbanized areas where space is limited. The installation of vortex separation systems may require modification of storm water conveyance structures. These devices can be installed in existing storm drain infrastructure, therefore, no additional land is required nor is there a need to displace existing housing. Maintenance of the vortex separation system involves the removal of the solids either by using a vactor truck, a removable basket or a clam shell excavator depending on the design and size of the unit.

Therefore, it is not reasonably foreseeable that the installation and maintenance of vortex separation systems would directly or indirectly induce population growth, displace people or existing housing, or create a demand for additional housing.

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 a device. Rather, an agency would foreseeably opt for non-structural control measures, such as enforcing litter ordinances.

7.14.3.2 Gross Solids Removal Devices

The Gross Solids Removal Devices (GSRDs) were developed by Caltrans to be retrofitted below grade into existing highway drainage systems or installed in future highway drainage systems. These devices are appropriate for highly urbanized areas where space is limited. The GSRDs can be designed to accommodate vehicular loading. Maintenance of the devices involves the removal of the solids either by using a vactor truck or other equipment.

The installation of GSRDs may require modification of storm water conveyance structures; however, these units would generally be sited below grade and within existing storm drain infrastructure. The installation of GSRDs is not expected to require additional land nor is there a need to displace existing housing.

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 a device. Rather, an agency would foreseeably opt for non-structural control measures, such as enforcing litter ordinances.

7.14.3.3 Trash Nets

It is not reasonably foreseeable that the installation and maintenance of trash nets would induce population growth, displace people or existing housing or create a demand for additional housing. These units are installed entirely within existing storm drain infrastructure.

7.14.3.4 Catch Basin Inserts

It is not reasonably foreseeable that the installation and maintenance of catch basin inserts would induce population growth, displace people or existing housing or create a demand for additional housing. These units are installed entirely within existing storm drain infrastructure.

7.14.3.5 Increased Street Sweeping

It is not reasonably foreseeable that increased street sweeping would induce population growth, displace people or existing housing or create a demand for additional housing. Current street sweeping, whether infrequent or frequent does not have this effect.

7.14.3.6 Enforcement of Litter Laws

It is not reasonably foreseeable that enforcement of litter laws would induce population growth, displace people or existing housing or create a demand for additional housing. Current litter laws do not have this effect.

7.14.3.7 Public Education

It is not reasonably foreseeable that public education would induce population growth, displace people or existing housing or create a demand for additional housing.

7.14.4 Comments on Housing Impacts

Some commenters referenced a study conducted by the Gateway Cities Council of Governments in 2004 on the “Impacts on Housing of the Metals TMDL for the Los Angeles River” that estimated 4967 housing units would have to be demolished in order to install structural BMPs for metals removal. These commenters have suggested that “a significant number of houses will similarly likely need to be demolished to comply with the Trash TMDL for the Los Angeles River Watershed”. As previously stated, the reasonably foreseeable methods of compliance with the TMDL include nonstructural BMPs and installation of trash collection devices in the existent urban stormwater systems. It is not reasonably foreseeable that the installation of these devices in stormdrains located in public rights-of-way will impact housing, and therefore, this study is not considered relevant to the trash TMDL. In addition, these commenters have, to date, failed to provide an instance where installation of a trash capture device in compliance with TMDL has resulted in an impact to housing.

The same argument could be applied to the referenced study in relation to the metals TMDL. The structural BMPs for reduction of metal discharges, discussed in the staff report, have been determined by the Federal Highway Administration and EPA to be well-suited for ultra-urban applications due to their limited land area requirements and flexibility of design to accommodate various local constraints (U.S EPA 1999, FHWA 2004). These BMPs are designed to be placed along curbs, in parking lots and other public areas and have been demonstrated to be effective in such locations by the California Department of Transportation (Caltrans 2003c). This being the case, it is not foreseeable that housing would need to be displaced to implement the metals TMDL.

7.15 PUBLIC SERVICES

This section provides an overview of the existing conditions for public services in the Los Angeles River Watershed and an analysis of potential impacts to these services that could result from implementation the Los Angeles River Trash TMDL. The reasonably foreseeable impacts are analyzed for the structural compliance measures such as vortex separation systems, gross solids removal devices, trash nets, catch basin inserts, as well as non-structural alternatives such as increased street sweeping, enforcement of existing litter laws, storm drain cleaning and public education. Public services that could be affected include fire and police protection, maintenance of public facilities, including roads and other governmental services. Where applicable, mitigation measures to reduce the impacts associated with each alternative are provided.

7.15.1 Environmental Setting

7.15.1.1 Fire Protection Services

The Los Angeles Fire Department (LAFD) is a full-spectrum life safety agency, providing fire suppression, emergency medical care, technical rescue, hazardous materials handling, disaster response, public education and community service to the City of Los Angeles. The Board of Fire Commissioners, a five-person civilian board appointed by the mayor and affirmed by the City Council, oversees the LAFD. The LAFD has 3,562 uniformed personnel and 338 non-sworn support personnel at 103 neighborhood fire stations serving a 470 square-mile jurisdiction (LAFD, 2006). The location and number of stations that would be called in the event of a fire or other emergency depends on a number of factors including the type of emergency, severity of the emergency, and availability of nearest fire station. In actuality, the resources of the entire LAFD force could be available collectively.

The Los Angeles County Fire Department services to the unincorporated areas of the County consist of more than fighting fires and responding to emergency calls. Today, actual firefighting accounts for only about four percent of the total emergency calls receive each year. More than 80 percent of all the calls receive are emergency medical calls, which involve anything from minor traffic accidents, to heart attacks, or even major rescue operations where people are trapped. Los Angeles County Fire Department has grown in response to the population and the diverse needs of the citizens in Los Angeles County. With numerous specialized units, the Los Angeles County Fire Department is capable of responding to everything from the smallest animal rescue to a major terrorist incident in the region. (LACFD, 2006a).

In addition, the Los Angeles County Fire Department contracts with many of the smaller cities, including Bell, Bell Gardens, Bradbury, Calabasas, Carson, Commerce, Cudahy, Duarte, El Monte, Hidden Hills, Huntington Park, Irwindale, La Canada Flintridge, Lakewood, Lynwood, Maywood, Paramount, Pico Rivera, Rosemead, San Fernando, Santa Clarita, Signal Hill, South El Monte, South Gate, and Temple City to provide fire protection services (LACFD, 2006b). Fire protection services within the City of Simi Valley are provided by the Ventura County Fire Department (VCFD, 2006). The other cities within the Los Angeles River Watershed, which include Alhambra, Arcadia, Burbank, Compton, Downey, Glendale, Long Beach, Monrovia, Montebello, Monterey

Park, Pasadena, San Gabriel, San Marino, Sierra Madre, South Pasadena, and Vernon have there own individual fire departments that serve their residence.

7.15.1.2 Police Protection Services

The Los Angeles Police Department (LAPD) is one of the largest and most innovative law enforcement agencies in the world. LAPD provides police protection services in the City of Los Angeles, serving an area of approximately 468 square miles, with 18 communities representing approximately 3.8 million residents (LAPD, 2006). A Board of Police Commissioners oversees all LAPD operations. In addition to administrative and special investigative units, the City of Los Angeles is divided into four smaller operational units, or bureaus: Central Bureau, South Bureau, West Bureau, and Valley Bureau. To facilitate response times, LAPD has approximately 19 individual police stations throughout the bureaus. LAPD employs approximately 10,354 sworn officers and 3,640 civilian personnel (LAPD, 2006), providing an average of approximately 2.7 sworn officers per 1,000 people.

Los Angeles County Sheriffs Department (LASD) is a municipal law enforcement that serves the unincorporated areas of the County and cities within the County that have contracted with the LASC for law-enforcement services. The LASD is the largest sheriff's department in the world with of over 13,000 employees. In December 1996, the LASD had 8,028 sworn deputies and 4,377 civilian employees (LASD, 2006). LASD deputies provided law enforcement services to approximately 2.7 residents within the unincorporated areas and contract cities. The cities that contract with the LASD for law enforcement services include Bell, Bell Gardens, Bradbury, Calabasas, Carson, Commerce, Compton, Cudahy, Duarte, Hidden Hills, La Canada Flintridge, Lakewood, Lynwood, Paramount, Pico Rivera, Rosemead, Santa Clarita, South El Monte, and Temple City (LASD, 2006).

The other cities within the Los Angeles River Watershed, which include Alhambra, Arcadia, Burbank, Downey, El Monte, Glendale, Huntington Park, Irwindale, Long Beach, Maywood, Monrovia, Montebello, Monterey Park, Pasadena, San Fernando, San Gabriel, San Marino, Sierra Madre, Signal Hill, Simi Valley, South Gate, South Pasadena, and Vernon have there own individual police departments that serve their residence.

7.15.1.3 Schools

The Los Angeles Unified School District (LAUSD) is the primary school district within the City of Los Angeles. The LAUSD includes a 710-square-mile area, which is broken into eight local districts (LAUSD, 2006). In addition to the City of Los Angeles, LAUSD serves all, or portions of, several incorporated cities and portions of the unincorporated areas of Los Angeles County, representing a total population of approximately 4.5 million residents (LAUSD, 2004). Cities in the Los Angeles River Watershed that are entirely within the LAUSD are Cudahy, Huntington Park, Maywood, San Fernando, and Vernon. Cities partially within the LAUSD are Bell, Bell Gardens, Carson, Commerce, Downey, Long Beach, Los Angeles, Lynwood, Montebello, Monterey Park, and South Gate. LAUSD operates 1,155 schools, including kindergarten through grade 12 (K-12), community and occupational centers, and charter schools (LAUSD, 2006). During the

2003 to 2004 school year, enrollment totaled 904,799 students, of which 746,610 were K-12 students (LAUSD, 2004). LAUSD employs over 77,000 staff members that include over 36,000 teachers (LAUSD, 2006).

Other school districts within the Los Angeles River watershed include Glendale Unified School District (GUSD) and Montebello Unified School District (MUSD). GUSD operates 30 K-12 schools plus four special facilities such as the Glendale Preparatory Academy, with a total enrollment of approximately 30,000 students. GUSD employs approximately 2,800 personnel (GUSD, 2006). MUSD with a total enrollment of more than 35,000 K through 12 students and 30,000 adult learners in eighteen elementary schools, six intermediate schools, four high schools and four adult schools, is one of the largest in Los Angeles County. The MUSD serves a diverse student population from the cities of Bell Gardens, Commerce, Montebello, and portions of Downey, Los Angeles, Monterey Park, Pico Rivera, Rosemead and South San Gabriel (MUSD, 2006).

7.15.2 Thresholds of Significance

According to Appendix G of the State CEQA Guidelines, a project would normally have a significant effect on the environment if it would:

- Result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, need for new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times or other performance objectives for any of the public services: a) Fire protection, b) Police protection, c) School, d) Parks, and e) Other public facilities.

7.15.3 Environmental Impacts

The reasonable foreseeable direct impacts are identified for the installation and operation phases of each alternative. Where applicable, mitigation measures to reduce the direct impacts associated with each alternative are provided. The thresholds reflect relevant issues identified in the CEQA checklist and issues raised during the CEQA scoping meeting and the draft Los Angeles River Trash TMDL.

Cost was one of the issues raised during the CEQA scoping meeting and in written comments on the draft Los Angeles River Trash TMDL. The cost of implementing the Los Angeles River Trash TMDL was determined to be a secondary or indirect impact to public services. It is not, however, an environmental impact.

7.15.3.1 Vortex Separation Systems

There is potential for temporary delays in response times of fire and police vehicles due to road closure/traffic congestion during installation of the vortex separation systems. To mitigate potential delays the responsible agencies could notify local emergency and police service providers of construction activities and road closures, if any, and coordinate with the local fire and police providers to establish alternative routes and traffic control during the installation activities. Most jurisdictions have in place established procedures to ensure safe passage of emergency and police vehicles during periods of road maintenance, construction, or other attention to physical infrastructure, and there is no evidence to suggest that installation of these structural devices would create any more significant impediments than other such typical activities. Any construction activity would be subject to applicable building and safety codes and permits. Therefore, the potential delays in response times for fire and police vehicles after mitigation are less then significant.

Since, the installation of vortex separation systems will not result in development of land uses for residential, commercial, and/or industrial uses nor will the these units result in increase growth, it is reasonably foreseeable that the vortex separation systems would not result in a need for new or altered fire or police protection services. In addition, Emergency Preparedness Plans could be developed in consultation with local emergency providers to ensure that the new vortex separation systems will not contribute to an increase in the cumulative demand for fire and police emergency services.

Once the vortex separation systems are installed and operating, there may be a need for increased maintenance and monitoring of the devices to verify that the structural BMP is performing properly and as expected. In addition, increased monitoring will be required to track compliance with the Los Angeles River Trash TMDL. The addition monitoring requirements may result in expanding the current monitoring program that is currently in effect. While complying with the Los Angeles River Trash TMDL may result in increases in maintenance and monitoring costs (and cost is not an impact to the physical environment and not a matter for analysis under CEQA), any increase will likely be outweighed by the resulting overall improvement in water quality and protection of human health. To the extent that these increase costs may be high on a local municipality, these costs are already occurring in the watershed and are being borne by downstream communities such as the City of Long Beach. For example Long Beach uses “clam shell” tractors, other heavy duty equipment, and many, many truck trips to cart away the tons of trash from all the upstream cities that end up in Long Beach Harbor after storm events. It is not unreasonable to require cities to address the trash that is generated locally and ends up in the storm drain system and ultimately the Los Angeles River, rather than burdening the downstream cities with the entire costs of cleaning up all the trash that is washed down from the upstream cities.

<u>7.15.3.2 Gross Solids Removal Devices</u>

There is potential for temporary delays in response times of fire and police vehicles due to road closure/traffic congestion during installation of the GSRDs. To mitigate potential delays the responsible agencies could notify local emergency and police service providers of construction activities and road closures, if any, and coordinate with the local fire and police providers to establish alternative routes and traffic control during the installation activities. Most jurisdictions have in place established procedures to ensure safe passage of emergency and police vehicles during periods of road maintenance, construction, or other attention to physical infrastructure, and there is no evidence to suggest that installation of these structural devices would create any more significant impediments than other such typical activities. Any construction activity would be subject to applicable building and safety codes and permits. Therefore, the potential delays in response times for fire and police vehicles after mitigation are less then significant.

Since, the installation of GSRDs will not result in development of land uses for residential, commercial, and/or industrial uses nor will the these units result in increase growth, it is reasonable foreseeable that the VSS units would not result in a need for new or altered fire or police protection services. In addition, Emergency Preparedness Plans could be developed in consultation with local emergency providers to ensure that the new GSRDs will not contribute to an increase in the cumulative demand for fire and police emergency services.

Once the GSRDs are installed and operating, there may be a need for maintenance and monitoring of the devices to verify that the structural BMP is performing properly and as expected. In addition, monitoring will be required to track compliance with the Los Angeles River Trash TMDL. The monitoring requirements may result in expanding the monitoring program that is currently in effect. While complying with the Los Angeles River Trash TMDL may result in increases in maintenance and monitoring costs for a local municipality, (and cost is not an impact to the physical environment and not a matter for analysis under CEQA) these costs are already occurring in the watershed and are being borne by downstream communities such as the City of Long Beach. For example Long Beach uses “clam shell” tractors, other heavy duty equipment, and many truck trips to cart away the tons of trash from all the upstream cities that end up in Long Beach Harbor after storm events. Under the proposed TMDL, cities will be required to address the trash that is generated locally rather than allowing it to enter the storm drain system and ultimately the Los Angeles River, burdening the downstream cities with the entire costs of removing the trash.

7.15.3.3 Trash Nets

The environmental impacts associated with the installation, maintenance and monitoring of trash nets are similar to those for the vortex separation systems and GSRDs. Although the delays due to installations will be more localized and of shorter duration since the installation of trash nets is not as complicated as the other structural BMPs. More maintenance may be required depending on the design of these units since, the capacity for trash collection may be limited to the size of the unit.

7.15.3.4 Catch Basin Inserts

The environmental impacts associated with the installation, maintenance and monitoring of catch basin inserts are similar to those for the trash nets. As with the trash nets, more maintenance may be required depending on the design of these units since, the capacity for trash collection may be limited to the size of the catch basin.

7.15.3.5 Increased Street Sweeping

Non-structural BMPs may include increased street sweeping. The impacts of these increases can be minimized by efficient timing of the increased street sweeping, for example, prior to storm events. Also by identifying land uses where trash production is high (i.e. commercial retail), where, therefore, an increase in street sweeping will yield the greatest results.

7.15.3.6 Enforcement of Litter Laws

It is not reasonably foreseeable that enforcement of litter laws would result in a need for increased staffing of police officers, as the enforcement of litter laws would be included in the daily routine of patrol officers already on staff. In any event, expenditure of funds to increase staffing is not an environmental impact subject to CEQA.

7.15.3.7 Public Education

It is not reasonably foreseeable that public education would result in the need for new or altered governmental services, since public education is already required under the MS4 permit.

7.15.4 Secondary Impact

Although the cost of implementing the alternatives necessary to comply with the Los Angeles River Trash TMDL is not a direct environmental impact subject to CEQA analysis, the cost may result in a secondary or indirect impact to public services. Since, the cost associated with the alternative could impact a municipality's ability to adequately provide services such as fire and police protection to its citizens. It is expected that each responsible agency will select their implementation strategy based on considerations such as cost effectiveness and available funding mechanisms. Full capture BMPs can be as simple and cost-effective as end-of-pipe trash nets or catch basin inserts that are being installed by some smaller cities, or as complex as vortex separation systems being installed by the County of Los Angeles. There is a wide range of costs associated with these various BMPs which allows the responsible agencies great flexibility in complying with the TMDL requirements while simultaneously being cost-conscious. Since, the LA River Trash TMDL does not mandate a specific means of compliance the municipalities are free to choose the most effective and lowest impact means of compliance. Therefore, it is reasonably foreseeable that a municipality could comply with the Los Angeles River Trash TMDL with little to no impacts to fire, police, parks and recreation or other public services. In addition, responsible agencies have the option of generating funds for any necessary increases in public services for maintenance and monitoring of trash-reduction BMPs through increases in related services charges such as flood control assessment fees and stormwater management user fees.

7.15.5 Summary

Installation and maintenance of structural trash-reduction BMPs should not result in potentially significant environmental effects with regard to public services. However, mitigation measures which can be applied to reduce and/or eliminate these impacts are available as described above. These mitigation measures are within the responsibility and jurisdiction of the responsible agencies in the Trash

TMDL and can or should be adopted by them (California Code of Regulations, title 14, section 15091(a)(2)). The Regional Board does not direct which compliance measures responsible agencies choose to adopt nor which mitigation measures they employ. The Regional Board does, however, recommend that appropriate mitigation measures be applied in order that potential environmental impacts be reduced or avoided. It is foreseeable that these mitigation measures may not always be capable of reducing these impacts to levels that are less than significant in every conceivable instance. In the event that a specific mitigation measure or alternative may not reduce impacts to levels that are less than significant, the project proponent may need to consider an alternative strategy or combination of strategies to comply with the TMDL.

7.16 RECREATION

This section provides an overview of the recreational facilities in the Los Angeles River Watershed and an analysis of potential impacts to these recreational facilities that could result from implementation the Los Angeles River Trash TMDL. Recreational resources include public parks, golf courses, beaches, lakes, rivers, wildlife areas, recreation centers, and senior citizen centers. The reasonable foreseeable impacts are analyzed for the structural compliance measures such as vortex separation systems, gross solids removal devices, trash nets, catch basin inserts, as well as non-structural alternatives such as increased street sweeping, enforcement of existing litter laws, storm drain cleaning and public education. Where applicable, mitigation measures to reduce the impacts associated with each alternative are provided.

7.16.1 Environmental Setting

Recreational Facilities

The Los Angeles River Watershed is characterized as an urbanized area framed by open space. The Pacific Ocean, San Gabriel Mountains, Santa Susana Mountains, Baldwin Hills, and the Santa Monica Mountains are examples of natural open space resources in the County and City of Los Angeles. The County of Los Angeles Department of Parks and Recreation oversees local and community parks in the unincorporated County areas. For the most part, incorporated cities within the County of Los Angeles operate their own departments of park and recreation.

The County of Los Angeles Department of Parks and Recreation provides the residents and visitors of Los Angeles County with quality recreational opportunities that promote a healthy lifestyle and strengthen the community through diverse physical, educational, and cultural programming. The Department of Parks and Recreation operates more than 90 community parks and six regional parks, gardens, lakes, and natural open space areas. The Department of Parks and Recreation also has jurisdiction over the largest public golf course system in the world, which consists of 19 golf courses on 17 sites, located throughout the County. In addition, the Department of Parks and Recreation maintains over 300 miles of multipurpose riding and hiking trails (Los Angeles County Department of Parks and Recreation, 2006).

In the City of Los Angeles, the Department of Recreation and Parks maintains publicly accessible parks, beaches, mountain trails, campgrounds, and historical sites. The department operates over 15,710 acres of parkland, including 390 neighborhood and regional parks, 9 lakes, 176 recreation centers, 372 play areas for children, 13 golf courses, 287 tennis courts, 9 dog parks, 59 swimming pools, and 7 skate parks (LA City Department of Recreation and Parks, 2006).

Facilities at neighborhood, community, and regional parks provide recreational opportunities such as baseball, basketball, swimming, tennis, and soccer. The Department of Recreation and Parks also provides after-school and day care for children; teen clubs; and volleyball, softball, and flag football games and leagues. Classes provided for children range from homework help to dance classes to field trips.

7.16.2 Thresholds of Significance

The following thresholds for determining the significance of impacts related to recreation are contained in the environmental checklist form contained in Appendix G of the most recent update of the California Environmental Quality Act Guidelines. An alternative would result in a significant recreation impact if it would:

- Increase the use of the existing neighborhood and regional parks or other recreational facilities such that a substantial physical deterioration of the facilities would occur or be accelerated.
- Substantially degrade the recreational use of existing parks.
- Include recreational facilities or require the construction or expansion of recreational facilities that might have an adverse physical effect on the environment.
- Preclude the implementation of planned facilities.

7.16.3 Environmental Impacts

The reasonably foreseeable direct impacts are identified for the installation and operation phases of each alternative. Where applicable, mitigation measures to reduce the direct impacts associated with each alternative are provided. The thresholds reflect relevant issues identified in the CEQA checklist and issues raised during the CEQA scoping meeting and the draft Los Angeles River Trash TMDL.

7.16.3.1 Vortex Separation Systems

The vortex separation systems will be installed below grade in existing storm drain systems, which should 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 the vortex separation systems. In addition, implementation of the Los Angeles River Trash TMDL is designed to improve the quality of the Los Angeles River. This will create a positive impact and increase recreational opportunities throughout the watershed.

It is reasonably foreseeable that installation of the vortex separation systems may temporarily impact the usage of existing recreational sites but not above the threshold of significance. 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 vortex separation systems in storm drains located in parks, bike lanes, and other recreational sites to avoid impairment of the entire site. The responsible agency may also redesign the vortex separation systems to be less obtrusive or choose a less disruptive implementation strategy such as a non-structural alternative.

7.16.3.2 Gross Solids Removal Devices

The GSRD units will be installed below grade in existing storm drain systems, which should 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 the GSRD units. In addition, implementation of the Los Angeles River Trash TMDL is designed to improve the quality of the Los Angeles River. This will create a positive impact and increase recreational opportunities throughout the watershed.

It is reasonably foreseeable that installation of the GSRD units may temporarily impact the usage of existing recreational sites but not above the threshold of significance. 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 GSRD units in storm drains located in parks, bike lanes, and other recreational sites to avoid impairment of the entire site. The responsible agency may also redesign the GSRD units to be less obtrusive or choose a less disruptive implementation strategy such as a non-structural alternative.

7.16.3.3 Trash Nets

Since, trash nets can be installed at or below grade within existing storm water conveyance structures or retrofitted to an existing outfall structure it is reasonably foreseeable that additional land will not be required. Therefore, there will not be a significant impact to the quality or quantity of existing recreational opportunities. In addition, implementation of the Los Angeles River Trash TMDL is designed to improve the quality of the Los Angeles River. This will create a positive impact and increase recreational opportunities throughout the watershed.

It is reasonably foreseeable that installation of the trash nets may temporarily impact the usage of existing recreational sites as was the case with the other structural BMPs but not above the threshold of significance Mitigation measures include the incremental installation of the trash nets in storm drains located in parks, bike lanes, and other recreational sites to avoid impairment of the entire site.

7.16.3.4 Catch Basin Inserts

Since, catch basin inserts can be installed at or below grade within existing storm water catch basins it is reasonably foreseeable that additional land will not be required. Therefore, there will not be a significant impact to the quality or quantity of existing recreational opportunities. In addition, implementation of the Los Angeles River Trash TMDL is designed to improve the quality of the Los Angeles River. This will create a positive impact and increase recreational opportunities throughout the watershed.

It is reasonably foreseeable that installation of the catch basin inserts may temporarily impact the usage of existing recreational sites as was the case with the other structural BMPs but not above the threshold of significance. Mitigation measures include the incremental installation of catch basin inserts located in parks, bike lanes and other recreational sites to avoid impairment of the entire site.

7.16.3.5 Increased Street Sweeping

It is not reasonably foreseeable that increased street sweeping would impact the quality or quantity of existing recreational opportunities. In addition, implementation of the Los Angeles River Trash TMDL is designed to improve the quality of the Los Angeles River. This will create a positive impact and increase recreational opportunities throughout the watershed.

7.16.6 Enforcement of Litter Laws

It is not reasonably foreseeable that enforcement of litter laws would impact the quality or quantity of existing recreational opportunities. In addition, implementation of the Los Angeles River Trash TMDL is designed to improve the quality of the Los Angeles River. This will create a positive impact and increase recreational opportunities throughout the watershed.

7.16.7 Public Education

It is not reasonably foreseeable that public education would impact the quality or quantity of existing recreational opportunities. In addition, implementation of the Los Angeles River Trash TMDL is designed to improve the quality of the Los Angeles River. This will create a positive impact and increase recreational opportunities throughout the watershed.

7.17 TRANSPORTATION AND TRAFFIC

This section provides an overview of transportation resources throughout the Los Angeles River Watershed. This section also identifies and analyzes foreseeable potential impacts to transportation resources associated with the trash TMDL implementation alternatives.

Transportation resources include the street and highway network within the watershed, including facilities for both motorized and non-motorized transportation. Potentially significant impacts are discussed and mitigation measures to reduce these impacts are identified where applicable.

7.17.2 Environmental Setting

The implementation alternatives could be located throughout the unincorporated areas of the County of Los Angeles and all other cities, or portions thereof that make up the Los Angeles River Watershed. The transportation system serving this area consists of roads and highways, public transit (paratransit, bus and rail), freight railroads, airports, seaports and intermodal terminals.

The regional freeway and highway system within the watershed consists of an interconnected network of local streets, arterial streets, freeways and carpool lanes that allows for the operation of private autos, carpools, private and public buses, and trucks. The network of freeways and state highways supports high-capacity limited-access travel, whereas the arterial network provides high levels of signalized street capacity and serves as a feeder system for the regional freeways and local street system. The freeway and highway system is the primary means of regional person and goods movement, providing for direct vehicular access to employment, services, and goods. The regional public transit system includes local shuttles, municipal and area-wide public bus operations, rapid rail transit operations, regional commuter rail services, and inter-regional passenger rail service. The Los Angeles County Metropolitan Transportation Authority is the largest provider of public transit services in the watershed, and is supplemented by municipal transit lines and local shuttle services.

Non-motorized transportation includes primarily biking and walking, and typically serves shorter trips than does motorized travel. Bikeways facilitate and encourage this mode of non-motorized transportation in the watershed. Class I bikeways are defined as separate off-street paths, Class II bikeways are defined as striped lanes within streets, and Class III bikeways are defined as signed bicycle routes. Pedestrian access at and near public transit, in local commercial and residential areas is facilitated by sidewalks, which are present on most streets.

7.17.3 Thresholds of Significance

Based on the policy and guidelines provided by CEQA (PRC Section 21001 and the CEQA Guidelines), an individual or cumulative impact of the proposed project would be significant if it does one or more of the following:

- Causes an increase in traffic which is substantial in relation to existing traffic load and capacity of the street system;

- Exceeds, either individually or cumulatively, a level of service standard established by the county congestion management agency for designated roads or highways;

- Results in a change in air traffic patterns, including either an increase in traffic levels or a change in location that results in substantial safety risks;

- Substantially increases hazards due to a design feature (e.g. sharp curves or dangerous intersections) or incompatible uses (e.g. farm equipment);

- Results in inadequate parking capacity; or

- Conflicts with adopted policies, plans, or programs supporting alternative transportation (e.g., bus turnouts, bicycle racks).

7.17.4 Environmental Impacts

<u>7.17.4.1 Vortex Separation Systems</u>

The TMDL Staff Report estimates that as many as 3700 large capacity vortex separation systems would have to be installed to collect all the trash generated in the urban portion of watershed. The proposal may also result in additional vehicular movement during installation of these devices. These impacts will be temporary and limited in duration to the period of installation. Maintenance requirements for trash removal devices demonstrate that devices could be emptied when they reach 85% capacity. However, trash removal devices can be designed so that they need be cleaned only once per storm season Assuming that 3700 vortex separation systems are cleaned once per storm season (November 1 to March 31, or 150 days), this translates to approximately 25 vehicle trips per day in the watershed. An additional 25 trips per day, watershed-wide, would not foreseeably result in a substantial or significant change to traffic flow, other than short-term congestion on limited roadway segments. The approximately 25 trips per day are fewer than the number of trips that would trigger the requirement of a traffic impact analysis per the congestion management plan (MTA, 2004)). Consequently, the proposed project would be in conformance with the existing Los Angeles County CMP, and this impact would be less than significant.

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. 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.

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. It is anticipated that impacts after mitigation will be less than significant.

<u>7.17.4.2 Catch Basin Inserts</u>

The TMDL Staff Report estimates that as many as 150,000 catch basins would have to be retrofitted with inserts to collect all the trash generated in the urban portion of watershed. No construction activity or use of heavy equipment is anticipated for catch basin insert installation. Therefore additional vehicular movement during installation of the catch basin inserts to control trash is unlikely to be significant. Also, it is not anticipated that any such increase will have an adverse effect on traffic and transportation in the watershed, as they would be limited and short-term. With respect to maintenance, catch basins need to be cleaned regularly. Frequency of cleaning depends on the amount of trash flowing in through the insert. Catch basins are cleaned out on varying schedules at a minimum frequency of once a year as a requirement of the MS4 permit. This implementation measure does not require an increase in cleaning frequency above what is already required for existing permits, therefore no significant increase in traffic is anticipated. Impacts from other maintenance activities, such as street sweeping, are not expected to be significant.

Mitigation measures to be applied will be the same as those for the vortex separation systems. It is anticipated that impacts after mitigation will be less than significant.

<u>7.17.4.3 Trash Nets</u>

The number of end-of-pipe trash nets installed will be limited by the number of suitable locations within the watershed. Installation and maintenance of trash nets will create environmental impacts similar to those of the vortex separation systems. It is not clear how many trash nets are going to be installed at this point. If the stakeholders make decisions on the numbers of trash nets that are going to be installed, the impacts on air quality caused by installation and maintenance of trash nets could be analyzed at project level. Nevertheless, many fewer trash nets are currently being installed than vortex separation systems, and, anticipating this trend to continue, the impacts of installation and maintenance of trash nets on air quality are expected to be much less than those of vortex separation systems.

Mitigation measures to be applied will be the same as those for the vortex separation systems. It is anticipated that impacts after mitigation will be less than significant.

7.17.4.4 Gross Solids Removal Devices

Gross Solids Removal Devices are the implementation alternatives developed by Caltrans for trash reduction from roadways. Hence their installation will foreseeably be limited to rights of way over which Caltrans has jurisdiction. In the Caltrans gross solids removal devices pilot studies, interim cleaning was not required and trash was removed only once per season. Therefore, fewer GSRDs will be installed than vortex separation systems and, cleanout will be less frequent, so the impacts of installation and maintenance of GSRDs on traffic are expected to be much less than those of vortex separation systems. The approximately 25 vehicle trips per day due to vortex separation systems, are fewer than the number of trips that would trigger the requirement of a congestion management plan (CMP). Consequently, the proposed project would be in conformance with the Los Angeles County CMP, and this impact would be a less than significant impact.

Mitigation measures to be applied will be the same as those for the vortex separation systems. It is anticipated that impacts after mitigation will be less than significant.

7.17.4.5 Increased Street Sweeping

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. Increased street sweeping would not foreseeably be implemented alone for the trash TMDL. It is not clear how often street sweeping would be increased to fulfill the trash TMDL at this point. If the stakeholders make decisions on the frequency of street sweeping, the impacts on air quality caused by increased street sweeping could be analyzed at project level. Nevertheless, the impacts of increased street sweeping have been included in alternatives, such as catch basin inserts, that may also include increased street sweeping. It is not anticipated that such increases will have a significant impact on traffic and transportation in the watershed. However, in the unlikely event that traffic and or transportation systems in the watershed are negatively impacted, mitigation measures such as providing notice to any affected residents, businesses, and property owners in the vicinity of areas targeted for increased street sweeping frequency could be applied.

7.17.4.6 Enforcement of Litter Laws

No adverse impacts to traffic or transportation is anticipated with this alternative.

7.17.4.7 Public Education

No adverse impacts to traffic or transportation is anticipated with this alternative.

7.17.5 Summary

The foreseeable methods of compliance may entail short-term disturbances during installation of structural devices to control trash. The specific project impacts can be mitigated by appropriate mitigation methods during installation. To the extent that significant adverse traffic impacts occur in a given locality, those effects are already occurring in the watershed and should be considered baseline impacts. Nevertheless, to the extent the locality that originated the trash would become newly exposed to increased traffic from the need to properly dispose of trash generated locally instead of downstream jurisdictions, those impacts could be potentially significant in those locales. Under the proposed TMDL, municipalities will abate locally generated trash, rather than causing the downstream cities and other stakeholders to suffer the effect of the trash or the cost of cleaning up the trash.

Installation and maintenance of structural trash-reduction BMPs could result in potentially significant environmental effects with regard to public services. However, mitigation measures which can be applied to reduce and/or eliminate these impacts are available as described above. These mitigation measures are within the responsibility and jurisdiction of the responsible agencies in the Trash TMDL and can or should be adopted by them (California Code of Regulations, title 14, section 15091(a)(2)). The Regional Board does not direct which compliance measures responsible agencies choose to adopt nor which mitigation measures they employ. The Regional Board does, however, recommend that appropriate mitigation measures be applied in order that potential environmental impacts be reduced or avoided. It is foreseeable that these mitigation measures may not always be capable of reducing these impacts to levels that are less than significant in every conceivable instance. In the event that a specific mitigation measure or alternative may not reduce impacts to levels that are less than significant, the project proponent may need to consider an alternative strategy or combination of strategies to comply with the TMDL.

7.18 UTILITIES AND SERVICE SYSTEMS

This section evaluates the effects of the proposed project on utilities and service systems by describing the existing condition of the utility and identifying the anticipated demand for utilities, as well as existing and planned utility availability. For purposes of this document, utilities include power or natural gas, communication systems, water, sewer or septic tanks, stormwater drainage, and solid waste disposal.

Storm drains have been identified as a major source of trash in the Los Angeles River. The strategy for meeting the water quality objective will focus on reducing the trash discharged via municipal storm drains. It is anticipated that trash reduction will be achieved by implementing controls such as:

- End-of-pipe full capture structural controls
- Partial capture control systems
- Institutional controls

7.18.2 Power and Natural Gas

7.18.2.1 General Setting

For the purposes of this analysis, energy resources consist of power (electricity) and natural gas. The 2005 Integrated Energy Policy Report prepared by the California Energy Commission (CEC) summarizes the state of California's electrical and natural gas supplies (CEC, 2005). Despite improvements in power plant licensing, enormously successful energy efficiency programs and continued technological advances, development of new energy supplies is not keeping pace with the state's increasing demands. A key constraint in energy is the state's electricity transmission system. Under most circumstances, the state's power grid is able to reliably delivery energy to consumers; for the majority of the days during the year adequate energy supplies are reliably provided to consumers. California's electricity demand is driven by short summer peaks, such that reducing peak demand is the essential factor in adequately planning for the State's electrical needs. These peak demands include a few hours to several days each year, such that managing demand, rather than developing supplies at new power plants for this limited time appears the most efficient method to meet State needs on peak days (Ibid.). The CEC has developed an action plan which includes increasing energy capacity in investor-owned utilities, incentives for combined heat and power projects (cogeneration), energy efficiency programs, expansion of renewable energy programs.

In the Los Angeles River watershed power is supplied by the Los Angeles Department of Water and Power (LADWP) or Southern California Edison (SCE). LADWP provides electrical service to 3.8 million residents and businesses of the City of Los Angeles through 1.4 million service connections (LADWP, 2006). As part of its ongoing efforts to improve air quality and reduce consumption of fossil fuels, the LADWP is actively working to provide power from alternative sources such as solar, wind, geothermal, and hydro. SCE provides power for millions of southern Californians in many different communities. SCE generates electricity through a variety of energy sources including, natural gas, fossil fuels and hydroelectric plants. SCE is also working to improve energy efficiency through programs for residents, commercial facilities and new construction developments (SCE, 2006).

California has not experienced a widespread natural gas shortage in many years. Current supplies are adequate to meet demands. The state has made infrastructure improvements that will increase the reliability and operational flexibility of the natural gas system, but must still address the need for additional pipeline capacity to meet peak demand (CEC, 2005). The state imports 87 percent of its statewide natural gas supply and therefore must be prepared for declining production in most U. S. supply basins and potential natural disasters that could the states ability to meet consumer natural gas demand (Ibid.). The state is working to reduce the demand for natural gas and increase the efficiency while at the same time improving and maintaining the natural gas infrastructure. Natural gas is provided to the Los Angeles region by The Southern California Gas Company (SCGC), which provides service to 19 million people in California. The SCGC receives its supply of natural gas from several sources: Southern California, Northern California, and out-of-state suppliers. All natural gas services are regulated by the California Public Utilities Commission CPUC.

<u>Regulations</u>
Federal
There are no federal laws, regulations, or policies, applicable to the trash TMDL that pertain to power and natural gas.

State
California Public Utilities Commission.
The CPUC regulates privately owned electric, telecommunications, natural gas, water, and transportation companies, in addition to household goods movers and rail safety. CPUC is responsible for assuring that California utility customers have safe, reliable utility service at reasonable rates, protecting utility customers from fraud and promoting the health of the California economy. CPUC also enforces CEQA requirements for utility construction.

California Energy Commission.
Created by the legislature in 1974, the California Energy Commission regulates the provision of electricity and natural gas in the State of California. With the signing of the Electric Industry Deregulation Law in 1998 (AB1890), the role of the commission includes overseeing funding programs that support public interest energy research; advance energy science and technology through research, development, and demonstration; and provide market support to existing, new, and emerging renewable technologies.

<u>7.18.2.2 Thresholds of Significance</u>

According to Appendix G of the California Environmental Quality Act (CEQA) Guidelines, a project will normally have a significant adverse environmental impact on water supply if the project would:

- Require or result in the construction of new energy production and/or transmission facilities or expansion of existing facilities, the construction of which could cause significant environmental effects.

7.18.2.3 Environmental Impact

The installation of full or partial trash capture systems would not require or result in the construction of new energy production or transmission facilities. These trash capture systems do not require power for operation. However; there is the limited potential that power or natural gas lines may conflict with the installation of a full capture trash system at specific locations; although with careful placement of the full capture trash system this issue should be avoided. It is not anticipated that the implementation of full or partial trash capture systems will require substantial alterations to power or natural gas utilities. There will be no impacts related to power and natural gas and no mitigation is required.

7.18.3 Communication Systems

7.18.3.1 General Setting

In general the communications systems used through out the Los Angeles River Watershed are typical communications tools such as, telephone and cell phones. These services are provided by many different private companies. In addition, radios may be used by employees of the agencies that will be implementing the Los Angeles River Trash TMDL. It is anticipated that these three communication tools (telephone, cell phone and radios) would be the most critical communication systems utilized to implement this TMDL and are evaluated under Impact B.

State Regulations

California Public Utilities Commission.
The CPUC regulates privately owned electric, telecommunications, natural gas, water, and transportation companies, in addition to household goods movers and rail safety. CPUC is responsible for assuring that California utility customers have safe, reliable utility service at reasonable rates, protecting utility customers from fraud and promoting the health of the California economy. CPUC also enforces CEQA requirements for utility construction.

7.18.3.2 Thresholds of Significance

A project will normally have a significant adverse environmental impact on water supply if the project would:

- Require or result in the construction of transmission facilities or expansion of existing facilities, the construction of which could cause significant environmental effects.

7.18.3.3 Environmental Impact

Implementation of this TMDL will require new trash control structures. 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 full or partial trash capture systems 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. There will be no impacts related to communication systems and no mitigation is required.

7.18.4 Water

7.18.4.1 General Setting

The Metropolitan Water District (MWD) is the largest water wholesaler for domestic and municipal uses in California. MWD owns and operates the Colorado River Aqueduct (CRA), and is a contractor for water from the California State Water Project (SWP). There are 26 MWD member public agencies (MWD, 2007). Many municipalities and or water districts within the Los Angeles River Watershed purchase water from MWD to supplement the local supplies. During very wet years, MWD's CRA and SWP supplies can total over 3 million AF, while deliveries in very dry years can be much less (approximately 1.2 million AF). To help ensure reliable deliveries of imported water to its 26 member agencies, MWD has implemented a variety of storage projects and water transfer programs. Examples include the new Diamond Valley Lake, an 800,000 AF reservoir, and groundwater banking programs in the Central Valley that can produce almost 200,000 AF of supply in a dry year (DWP, 2005).

In addition, a key water resource that is relied upon for water supply in the Los Angeles region is groundwater. Local groundwater wells provide a significant source of the water supply for many municipalities for example; the City of Los Angeles relies on groundwater for approximately 15 percent of its total water supply (Ibid.). Likewise, the City of Los Angeles relies on the Los Angeles Aqueduct to supply additional water. The LA Aqueduct extends 340 miles from the Mono Basin to Los Angeles. Water is conveyed the entire distance by gravity. There are seven reservoirs along the way with the total storage capacity of 300,560 AF (Ibid.). This aqueduct system is fed by runoff from the eastern slopes of the Sierra Nevada Mountains. During very wet years, the Los Angeles Aqueduct can provide more than 400,000 AF annually; in dry years in may produce less than 75,000 AF (Ibid.). Approximately half of the City of Los Angeles' water needs have been meet by the aqueduct system for the last ten years.

Historically in the City of Los Angeles water demands peaked in 1989 at just over 700,000 AF (Ibid.). In the 1990s the City instigated conservation and education campaigns and which were very successful in increasing the efficient use and conservation of water.

Today the water usage in the City of Los Angeles is the same as it was 20 years ago despite an increase in population of more than 750,000 people (Ibid.). A focus on water supply and availability and the relationship with community growth has led to recent legislation by the Sate mandating that local government demonstrate adequate water supply before approving large development projects. Specifically Senate Bill 221 prohibits local government form approving subdivisions of 500 or more dwellings unless sufficient water supply is available. Senate Bill 610 requires large development projects subject to CEQA to contact the public water systems that will supply water to the project and request that public water system to prepare a water supply assessment (DWP, 2005). The assessment must evaluate whether water is available to the meet the projects anticipated demand.

Regulations

Federal

Federal Safe Drinking Water Act

Enacted in 1974 and implemented by the EPA, the federal *Safe Drinking Water Act* imposes water quality and infrastructure standards for potable water delivery systems nation-wide. The primary standards are health-based thresholds established for numerous toxic substances. Secondary standards are recommended thresholds for taste and mineral content.

U.S. Environmental Protection Agency

The EPA established primary drinking water standards in the *Clean Water Act* Section 304. States are required to ensure that potable water retailed to the public meets these standards. Standards for a total of eighty-one individual constituents have been established under the *Safe Drinking Water Act* as amended in 1986. The U.S. EPA may add additional constituents in the future. State primary and secondary drinking water standards are promulgated in CCR Title 22 Sections 64431–64501. Secondary drinking water standards incorporate non-health risk factors including taste, odor, and appearance.

State

Urban Water Management Planning Act (California Water Code, Division 6, Part 2.6, Section 10610 et seq.)

The *Urban Water Management Planning Act* (Act) was developed due to concerns over potential water supply shortages throughout California. It requires information on water supply reliability and water use efficiency measures. Urban water suppliers are required, as part of the Act, to develop and implement Urban Water Management Plans (UWMP) to describe their efforts to promote efficient use and management of water resources.

Water Conservation Projects Act

California's requirements for water conservation are codified in the *Water Conservation Projects Act of 1985* (Water Code Sections 11950–11954), as reflected below:
11952 (a). It is the intent of the Legislature in enacting this chapter to encourage local agencies and private enterprise to implement potential water conservation and reclamation projects….

<u>7.18.4.2 Thresholds of Significance</u>

According to Appendix G of the California Environmental Quality Act (CEQA) Guidelines, a project will normally have a significant adverse environmental impact on water supply if the project would:

- Require or result in the construction of new water facilities or expansion of existing facilities, the construction of which would cause significant environmental effects.

- Have insufficient water supplies available to serve the project from existing entitlements and resources, or would require new or expanded entitlements.

7.18.4.3 Environmental Impact

Potential projects associated compliance with Los Angeles River Trash TMDL will not result in the need for a new or substantial alteration to water supply utilities. The implementation of the Los Angeles River Trash TMDL will not result in the 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. There will be no impacts related to water supply and no mitigation is required.

7.18.5 Sewer/ Septic Tanks

7.18.5.1 General Setting

The sewer system throughout the Los Angles River Watershed includes three publicly owned treatment works (POTWs). They include the Tillman plant located in the San Fernando Valley, the Los Angeles-Glendale plant located in the City of Glendale and the Burbank plant located in the City of Burbank. In general these plants receive waste from commercial, industrial and residential sources. All incoming wastewater receives primary, secondary and tertiary treatment. In addition, the effluent is disinfected and used in water recycling programs or discharged to various reaches or tributaries of the Los Angeles River (LADPW, 2006, Burbank DPW, 2006). The Los Angles-Glendale, Tillman and Burbank POTWs discharge to Reach 3, Reach 4 and 5, and the Burbank Western Channel (a tributary to the Los Angeles River), respectively.

Onsite wastewater treatment systems (septic systems) are used in areas in where direct connection to sewer lines is not possible and have been used as a form of wastewater disposal for many decades. A septic tank system generally consists of a tank between 1,000 to 1,500 gallons which is connected to an inlet wastewater pipe at one end and the to septic leech field at the other. Recent designs of the tank usually include two chambers which are separated by means of a dividing wall. Wastewater enters the first chamber of the tank and allows solids to settle and scum to float on top. The settled solids are anaerobically digested reducing the volume of the solids. The liquid portion flows through the division to the second chamber where further settlement takes places and the remaining liquid flows to the leach field and remaining solids decompose in the soil. There are several thousand septic systems used for the disposal of wastewater throughout the Los Angeles River Watershed; they are generally located in the San Fernando Valley, the foothills of the San Gabriel Mountains, the Hollywood Hills, Calabasas, and the Santa Monica Mountains.

Regulations
Federal
Federal Water Pollution Control Act (Clean Water Act)
The major piece of federal legislation dealing with wastewater is the federal *Water Pollution Control Act*, which is designed to restore and preserve the integrity of the nation's waters. The federal *Water Pollution Control Act*, popularly known as the *Clean Water Act*, is a comprehensive statute aimed at restoring and maintaining the chemical, physical, and biological integrity of the nation's waters. Enacted originally in 1948, the Act was amended numerous times until it was reorganized and expanded in 1972. It continues to be amended almost every year. In addition to the federal *Water Pollution Control Act*, other federal environmental laws regulate the location, type, planning, and funding of wastewater treatment facilities.

State
Operations of Wastewater Treatment Plants are subject to regulations set forth by the California Department of Health Services and the California State Water Resources Control Board.
Regional Water Quality Board
Under the Los Angeles Regional Water Quality Control Board (LARWQCB) National Pollutant Discharge Elimination System (NPDES) permit system, all existing and future municipal and industrial discharges to surface waters within the area would be subject to regulations.

<u>7.18.5.2 Thresholds of Significance</u>
According to Appendix G of the California Environmental Quality Act (CEQA) Guidelines, a project will normally have a significant adverse environmental impact on water supply if the project would:

- Exceed wastewater treatment requirements of the applicable Regional Water Quality Control Board.

- Require or result in the construction of new wastewater treatment facilities or expansion of existing facilities, the construction of which could cause significant environmental effects.

- Result in a determination by the wastewater treatment provider which serves or may serve the project that it has adequate capacity to serve the project's projected demand in addition to the provider's existing commitments.

<u>7.18.5.3 Environmental Impacts</u>
Implementation of this Basin Plan amendment involves a progressive reduction in trash discharges to the Los Angeles River through structural BMPs, enforcement of existing litter laws, and institutional controls. These strategies to reduce trash are not related to the sewer system and will not affect POTWs nor will they impact any septic tank systems. The implementation of the trash TMDL will not result in the need for a new or alterations to existing sewer or septic tank systems. The structural BMPs that may be implemented as part of the trash TMDL such as catch basin inserts will be implemented

to update the storm drain system and reduce trash to the Los Angeles River. The storm drain system is completely separate from the sewer system and septic tank systems; thus the sewer and septic systems will not be impacted. There will be no impacts related to sewer and septic tank systems and no mitigation is required.

7.18.6 Stormwater Drainage

7.18.6.1 General Setting

The original storm drain system in the Los Angeles region was developed by the Army Corps of Engineers in the 1930s. As the region began to rapidly develop stormwater runoff increased as more area became paved and there was less undeveloped land for rain water infiltration (LA Stormwater, 2006). In order to prevent extensive flooding a complex drainage system was developed. There are thousands of miles of storm drains networked throughout the Los Angeles River Watershed; this vast network of underground pipes and open channels that was designed to prevent flooding. Runoff drains from the street, into the gutter, and enters the system through an opening in the curb called a catch basin. Catch basins serve as the local entry point into the Los Angeles River and then the ocean. Storm drains not only capture stormwater runoff, but other urban water runoff such as runoff from over watering of lawns or gardens or home car washing. Stormwater is generally not treated or filtered before it is discharged to the ocean. It is estimated that in Los Angeles County 100 million gallons of water and debris drain through the storm drain system each day. During rain events the flow can increase to 10 billion gallons (Ibid.).

Regulations

Federal

The *Clean Water Act* was enacted with the primary purpose of restoring and maintaining the chemical, physical, and biological integrity of the nation's waters. The EPA has delegated responsibility for implementation of portions of the *Clean Water Act* to the State Water Resources Control Board (SWRCB) and the Regional Water Quality Control Board (RWQCB) for water quality control planning and programs, such as the National Pollutant Discharge Elimination System (NPDES) program.

State

The Los Angeles County NPDES permit requires that discharges within permit area are subject to the provisions of the Los Angeles County NPDES Storm Water Permit. The NPDES storm water permit was issued by LARWQCB for municipal storm water and urban runoff discharges within Los Angles County and for co-permitees.

7.18.6.2 Thresholds of Significance

A project will normally have a significant adverse environmental impact on water supply if the project would:

- Require or result in the construction of new stormwater facilities or expansion of existing facilities, the construction of which would cause significant environmental effects.

7.18.6.3 Environmental Impact

In order to achieve compliance with the TMDL, the stormwater drainage systems may need to be retrofitted with structural BMPs such as catch basin inserts and or full capture systems. These structural BMPs have the potential to significantly impact the stormwater drainage system.

Several studies conclude that urban runoff is the dominant source of trash. The large amount of trash conveyed by urban stormwater to the Los Angeles River is evidenced by the amount of as trash that accumulates at the base of storm drains. Wind and direct dumping can also be sources of trash; however these sources are not addressed under this section. The beneficial uses in the Los Angeles River are impaired by large accumulations of suspended and settled debris throughout the river system. Common items that have been observed by Regional Board staff include Styrofoam cups, Styrofoam food containers, glass and plastic bottles, toys, balls, motor oil containers, antifreeze containers, construction materials, plastic bags, and cans.

Trash in waterways causes significant water quality problems. Small and large floatables can inhibit the growth of aquatic vegetation, decreasing spawning areas and habitats for fish and other living organisms. Wildlife living in rivers and in riparian areas can be harmed by ingesting or becoming entangled in floating trash. Except for large items such as shopping carts, settleables are not always obvious to the eye. They include glass, cigarette butts, rubber, construction debris and more. Settleables can be a problem for bottom feeders and can contribute to sediment contamination. Some debris (e.g. diapers, medical and household waste, and chemicals) are a source of bacteria and toxic substances. Floating debris that is not trapped and removed will eventually end up on the beaches or in the open ocean, repelling visitors away from our beaches and degrading coastal waters.

The trash described above enters the Los Angeles River through catch basins which connect to the storm drain system. In order to prevent this, storm drains will be retrofitted with BMPs to collect trash. Impacts to the storm drains may range from potentially significant to less than significant with mitigation depending on the specific structural BMP implemented. The agencies implementing and complying with the LA River Trash TMDL will plan and implement the best trash capture systems for their municipality. Overall, the installation of full and partial trash capture systems will substantially alter the storm drain system.

The most critical potential impact related to implementation of full or partial trash capture systems is the risk of increased flooding. The trash collected by these devices (not the devices themselves) have the potential to impede the course of flow of flood waters through the storm drain system. This risk is considerably lower with the full capture system, because it is likely that they will be designed with a flood event bypass system. Therefore, under large storm conditions the trash capture unit will be bypassed and the stormwater flows and the trash will be directly discharged to the ocean. The risk of increased street flooding is greater for the catch basin inserts. In general, the inserts are simple screens that are placed inside the catch basin to prevent large pieces of trash for being discharged into the river. If under storm conditions these screens were to become clogged with trash it would impede the flow of the stormwater and could possibly cause flooding.

The potential risk of increased flooding can be mitigated by proper design and maintenance. For example the screens can be engineered to be removable and or retractable; the screens could be removed prior to forecasted large storm events to reduce the risk of flooding.

The prevention and removal of trash in the Los Angeles River through structural BMPs of catch basin inserts and full capture systems ultimately will lead to improved water quality and protection of aquatic life and habitat, expansion of opportunities for public recreational access, enhancement of public interest in the rivers and public participation in restoration activities, and propagation of the vision of the river as a whole and enhancement of the quality of life of riparian residents. These improvements outweigh the risk of potentially increased flooding; furthermore, proper design and maintenance of structural BMPs, as discussed above, will mitigation this risk. This impact is considered potentially significant and mitigation should be incorporated.

<u>Recommended Mitigation Measures</u>
(i) Design and installation of trash capture systems (catch basin inserts or full capture systems) should be prepared by a Licensed Civil Engineer or Environmental Engineer in consultation with Hydrologist to ensure there will be adequate capacity for stormwater flows and or a stormwater bypass system.
(ii) There should be regular maintenance of trash capture systems to remove trash and to prevent the accumulation of trash especially prior to forecasted storm events.

Installation and maintenance of structural trash-reduction BMPs will result in potentially significant environmental effects with regard to stormwater drainage. However, mitigation measures which can be applied to reduce and/or eliminate these impacts are available as described above. These mitigation measures are within the responsibility and jurisdiction of the responsible agencies in the Trash TMDL and can or should be adopted by them (California Code of Regulations, title 14, section 15091(a)(2)). The Regional Board does not direct which compliance measures responsible agencies choose to adopt nor which mitigation measures they employ. The Regional Board does, however, recommend that appropriate mitigation measures be applied in order that potential environmental impacts be reduced or avoided. It is foreseeable that these mitigation measures may not always be capable of reducing these impacts to levels that are less than significant in every conceivable instance. In the event that a specific mitigation measure or alternative may not reduce impacts to levels that are less than significant, the project proponent may need to consider an alternative strategy or combination of strategies to comply with the TMDL.

7.18.7 Solid Waste and Disposal

7.18.7.1 General Setting

The Los Angeles County Sanitation District (LACSD) is responsible for solid waste services throughout Los Angeles County. There are numerous public and private landfills as well as transfer stations in Los Angeles County that could potentially receive waste collected as implementation of the Los Angeles River Trash TMDL. Solid waste in Los Angeles County is collected by over 250 waste haulers and several city governments. The waste is then disposed at landfills in the County, transformation facilities (such as refuse to energy), and inter-modal facilities that transport the waste to facilities outside the county. The three landfills operated by LACSD include Calabasas, Puente Hills, and Scholl Canyon. In addition, there are privately operated landfills (Bradely Landfill West and West Extension and Sunshine Canyon Sanitary Landfill County Extension) that accept waste from various municipalities and wastesheds in the Los Angeles Region. The table below provides the daily throughput, remaining capacity, and estimated closing date of each landfill.

Landfill	Daily Throughput (tons/day)	Remaining Capacity (cubic yards)	Estimated Closing Date
Bradley Landfill West and West Extension (Waste Management, Inc.)	10,000	4,725,968 (as of 2002)	May be closing, depending City of Los Angeles approval of an extension.
Scholl Canyon Landfill (LACSD)	3,400	11,556,400 (as of 2005)	2019.
Puente Hills Landfill (LACSD)	13,200	55,711,200 (as of 2005)	2013.
Calabasas Sanitary Landfill (LACSD)	3,500	16,900,400 (as of 2004)	2028.
Sunshine Canyon Sanitary Landfill County Extension (BFI, Inc.)	6,600	16,000,000 (as of 2001)	2011.

Source: California Integrated Waste Management Board Solid Waste Information System http://www.ciwmb.ca.gov/SWIS

Regulations

Federal

There are no applicable federal laws, regulations, or policies that pertain to solid waste.

State

At the state level, the management of solid waste is governed by regulations established by the CIWMB, which delegates local permitting, enforcement, and inspection responsibilities to local enforcement agencies. In 1997, some of the regulations adopted by the State Water Quality Control Board (SWQCB) pertaining to landfills (Title 23, Chapter 15) were incorporated with CIWMB regulations (Title 14) to form Title 27 of the California Code of Regulations (CCR).

State Law AB 939

In 1989, the Legislature adopted the Integrated Waste Management Act of 1989, which established an integrated waste management hierarchy that consists of the following in order of importance: source reduction, recycling, composting, and land disposal of solid waste. The law also required that each county prepare a new Integrated Waste Management Plan. The Act further required each City to prepare a Source Reduction and Recycling Element (SRRE) by July 1, 1991. Each source reduction element includes a plan for achieving a solid waste reduction goal of 25 percent by January 1, 1995, and 50 percent by January 1, 2000. Recently, a number of changes to the municipal solid waste diversion requirements under the Integrated Waste Management Act were adopted, including a revision to the statutory requirement for 50 percent diversion of solid waste. Under these provisions, local governments shall continue to divert fifty percent of all solid waste on and after January 1, 2000.

7.18.7.2 Thresholds of Significance

According to Appendix G of the California Environmental Quality Act (CEQA) Guidelines, a project will normally have a significant adverse environmental impact on water supply if the project would:

- The project will be served by a landfill with insufficient permitted capacity to accommodate the project's solid waste disposal needs.

- The project does not comply with federal, state, and local statutes and regulations related to solid waste.

7.18.7.3 Environmental Impacts

Compliance with the Los Angeles River Trash TMDL will require that significant amounts of waste, that would otherwise enter storm drains, will be collected by institutional controls and structural methods for collecting trash, or by source control and proper litter disposal by citizens in upstream locales. The Los Angeles River Trash TMDL identifies waste load allocations for 46 municipalities and or agencies. The total waste load allocation for all of the stakeholders combined is 5,756,232 pounds or 2,878.12 tons. This mass represents the total mass of trash expected to be collected by the stakeholders when 100% of the allocation is met (i.e. the TMDL is fully implemented). Based on landfill capacity in the Los Angeles region there appears to be ample availability to receive trash that would be collected as part of compliance with Los Angeles River Trash TMDL. Based on information from the California Integrated Waste Management Board there is 9,905,735 tons of landfill capacity in Los Angeles County. The solid waste anticipated to be collected as part of the trash TMDL would account for less than one tenth of a percent (0.03 %) of this capacity. It is not anticipated that trash collected as part of the Los Angeles River Trash TMDL would cause the landfills to exceed their permitted capacity.

To the extent that decreases in available landfill space may be imposed upon a given locality or local region, those effects are already occurring elsewhere in the watershed as a result of the improper disposal of trash, and such effects should be considered baseline impacts, as they are presently carried by the downstream communities. On balance, it is not unfair to require localities to dispose of trash generated locally rather than causing the downstream cities to dispose of this solid waste. The city of Long Beach, for instance, uses "clam shell" tractors, other heavy duty equipment, and many, many truck trips to cart away the tons of trash from all the upstream cities. Notably, any such impacts could be avoided considerably if the responsible agencies would control trash locally. Although, based on the capacity of landfill space in the Los Angeles area it is not anticipated that the collected trash will cause and exceedance of permitted landfill capacity. Furthermore, it is reasonably foreseeable that the regulation would precipitate education about the environmental and economic effects of litter, and thereby stimulate greater efforts to use less disposable materials, and to recycle more, thus reducing the use of resources including natural resources. Increased recycling would be considered a positive environmental impact.

In addition, to trash collected as part of compliance with the TMDL there will be construction debris generated by the installation of structural BMPs. Existing landfills in the area do have adequate capacity to accommodate this limited amount of construction debris. In addition, the County of Los Angeles and many municipalities have construction and demolition debris recycling and reuse programs. Recycling and reuse of construction and demolition material has been shown to considerably reduce the amount of debris sent to landfills. According the county of Los Angeles, except under unusual circumstances, is feasible to recycle or reuse at least 50% or construction and demolition debris (LADPW, 2005). Impacts on the disposal of solid waste would be less than significant. There will be no impacts related to sewer and septic tank systems and no mitigation is required.

SECTION 8 SITE SPECIFIC ENVIRONMENTAL ANALYSIS

Pursuant to Section 21159 of the Public Resources Code, an agency's environmental analysis must include an analysis of a reasonable range of specific sites. The following section includes a discussion of site-specific and device-specific environmental impacts from implementing the trash TMDL. The trash TMDL compliance projects discussed below have been implemented by municipalities and public agencies. All of the projects discussed below were deemed categorically exempt from CEQA analysis by the lead agencies of the corresponding projects, showing that the municipalities and public agencies consider the environmental impacts from implementing these trash TMDL compliance projects to have no reasonable probability of resulting in a significant adverse effect on the environment. An otherwise applicable categorical exemption is not available when the project could result in significant individual or cumulative adverse environmental effects. (14 Cal. Code Regs. § 15300.2.)

The municipality or public agency decisions in designing and siting structural devices may depend on the catchment land use. The Los Angeles River Watershed is one of the most diverse watersheds in the Los Angeles Region in terms of land use. The total area of the watershed is 824 square miles, of this approximately 324 square miles are covered by forest or open space land including the area near the headwaters in the Santa Monica, Santa Susana, and San Gabriel Mountains. The rest of the watershed is highly developed and urbanized, and the land uses include, commercial, industrial, high density residential, low density residential, and various parks. Site specific BMPs will likely be employed throughout the watershed to reduce trash loading to the Los Angeles River, and specific BMPs will be best suited to particular land uses. For example, land uses generating large amounts of trash or downstream collection points may be better target areas to implement full capture systems; where as low density residential areas may be better served by simple catch basin inserts.

8.1 TRASH NETS

Trash nets are an option that can be placed end of pipe to collected trash and debris prior to discharge into a water body. In general they are "sock" like in design and are attached to the pipe at the storm drain discharge point. Typically maintenance and monitoring of these devices is straight-forward, and loss of drain capacity may be minor when properly designed (County of Los Angeles, 2004). Proper designed would also be necessary to prevent the reintroduction of trash to the water body under peak flows (County of Los Angeles, 2004). Trash nets are generally considered easy to install with moderate to low cost, and have a high benefit of trash reduction (County of Los Angeles, 2004).

8.1.1 Trash net example: Hamilton Bowl End of pipe trash nets

To comply with the Los Angeles River trash TMDL, end of pipe nets were installed in storm drain outlets that discharge into the Hamilton Bowl. Hamilton Bowl is a Los Angeles County flood control facility that collects runoff from storm drain systems, and thereafter pumps runoff to the Los Angeles River. It is located at 1900 Walnut Avenue in Long Beach, California. The end of pipe nets, installed in the Hamilton Bowl, has been certified by the LARWQCB as full capture devices. Los Angeles County Department of Public Works (DPW) is responsible for maintaining the devices with cranes. The installation and maintenance of these devices may cause temporary traffic impacts depending on the location of maintenance. Since the devices are an end of pipe treatment, no upstream or downstream flooding is expected. Vector creation and noise impacts were also not an issue (County of Los Angeles DPW, personnel communication 2006).

Environmental Impact Analysis: The City of Long Beach filed a Notice of Exemption (NOE) on May 16, 2002. The NOE cited California Code of Regulations (CCR), Title 14, Section §15301 and §15303 and stated that the City of Long Beach is categorically exempt from CEQA as a result. Categorical exemptions are found in Article 19 of the Guidelines for implementation of the California Environmental Quality Act. Section §15301 and §15303 address "Existing Facilities" and "New Construction or Conversion of Small Structures," respectively. Regional Board staff has located no evidence to dispute the accuracy of the NOE. Regional Board staff has also located no evidence to support the claim that routine installation and maintenance in an urban area, akin to routine street construction and utility maintenance, would create significant impacts as opposed to the ordinary trivial impacts routinely encountered in an urban environment. Nevertheless, the impacts of these types of devices have been treated as potentially significant, and traffic impacts associated with such installation have been analyzed elsewhere in this SED.

8.2 CATCH BASIN INSERTS

Catch basins inserts are designed to remove oil and grease, trash, debris, and sediment and can improve the quality of stormwater runoff as it enters the catch basins. Different types of catch basin inserts are available, some employ simple screens to remove trash and other debris; others are more sophisticated and are used to filter hydrocarbons and other pollutants from stormwater runoff (US EPA, 2006b). The catch basin inserts must be maintained especially during the wet season to prevent clogging and loss of drain capacity or the reintroduction of pollutants to the water body. The installation of catch basin inserts as screen and or excluders is moderately straight-forward and the cost is relatively moderate; moreover the relative benefit of trash removal is high (County of Los Angeles, 2004). This type of BMP could be implemented in many different land use areas.

8.2.1 Example of a catch basin insert: City of Glendale brush and screen combination

The Cities of Glendale, Burbank, La Canada Flintridge, and Pasadena, have received full capture certification for their catch basin insert brush and aluminum mesh screen combination. Continuous broom brushes were installed along the upper edge of storm drain inlets to prevent trash from entering. Inside the catch basins, a full capture 5 mm screen completely covers the basin to avoid the overflow of trash. Each catch basin may need to be cleaned by a vacuum truck once per wet season for 45 minutes to one hour. Temporary traffic, noise, and parking impacts occurred during installation and maintenance. All these impacts were short term and consistent with other minor construction project impacts. The devices require vacuum truck maintenance once or twice a year depending on intensity and frequency of precipitation. On average each device takes a total of 45 to 60 minutes for cleanup (City of Glendale, personal communication, 2006).

Five brush and mesh full capture systems have been installed in the City of Glendale in existing storm drains, with more units being added at this time. These units are located at the intersection of Isabel and Broadway, the intersection of Jackson and Broadway, at the post office on Broadway, and in two locations north of the post office. These are urban, high trash loading sites.

Figure 8-1. City of Glendale, catch basin insert

Figure 8-2. City of Glendale, catch basin brush insert

Environmental Impact Analysis: While installation of the devices caused some temporary traffic, noise, and parking impacts, City of Glendale staff stated that the installation of these devices is categorically exempt from CEQA and the City is, therefore, not required to submit a NOE or Environmental Impact Report (EIR) equivalent (14 CCR §15062). However, the City of Burbank may file an NOE in the future if Trash BMPs are implemented in a large scale manner. Categorical exemption was justified via City of Glendale's discretion in retrofitting and maintenance of existing public structures consistent with 14 CCR §15301 and §15303 respectively. Regional Board staff has located no evidence to dispute the accuracy of the NOE. Regional Board staff has also located no evidence to support the claim that routine installation and maintenance in an urban area, akin to routine street construction and utility maintenance, would create significant impacts as opposed to the ordinary trivial impacts routinely encountered in an urban environment. Nevertheless, traffic, noise, and parking impacts during installation and maintenance have been treated as potentially significant, and analyzed elsewhere in this SED.

8.3 Continuous Deflection Separation (CDS) Units

Continuous Deflection Separation (CDS) units are a type of vortex separation system (VSS) and a full capture device. They are cylindrical structures that are connected to the storm drain system. The units allow stormwater to flow through them while removing various pollutants including sediment, oil, grease, trash, and debris (CDS Technologies, 2006). The CDS units can be incorporated into new development projects or retrofitted as part of the existing storm drain network. The CDS unit takes advantage of the energy in flowing water creating a vortex in which solid pollutants will move to the center and drop into the catch basket below the unit. The different types of CDS units (inline or offline) are designed to treat different stormwater flows (0.7 – 64 cfs) (CDS Technologies, 2007). Full capture systems such as the CDS units could be located in regions generating greater percentages of man made trash such as areas with industrial and or commercial land use.

8.3.1 Example of a CDS unit: City of Los Angeles CDS units

In 1996 the City of Los Angeles installed three Continuous Deflector System (CDS) units.

- Los Angeles Coliseum on Vermont between 43rd Street and 42nd Place. The CDS unit installed was CDS Technologies PSW70-70,

- Westlake area on 11th Street between Park View and Grand View. The CDS unit installed was CDS Technologies PSW70-70, and

- Downtown Los Angeles on Park Grove just north of 23rd Street. The CDS unit installed was CDS Technologies PSW100-100.

The environmental impacts associated with the devices include temporary construction, noise, traffic, and aesthetic impacts consistent with various other construction and maintenance operations within the City (City of Los Angeles DPW Civil Engineer, personal communication, 2006).

Environmental Impact Analysis: The City of Los Angeles filed an NOE for the installation of their CDS units. The City of Los Angeles regards the installation as a retrofit of existing storm water systems. Citing 14 CCR §15301 and §15303, the installation and maintenance of the devices was categorically exempt from CEQA.

8.3.2 Site specific noise impact of CDS unit

While no site-specific significant environmental impacts were reported for the trash BMPs located in the Los Angeles River Watershed, there was one reported incidence of negative impacts associated with the maintenance of a trash BMP in the Ballona Creek Watershed. This involved cleanout operations for a Continuous Deflective System (CDS) unit located in Culver City in the Ballona Creek Watershed.

The CDS unit in question is located at 4308 Mildred Avenue in Culver City. Residents complained of noise levels, odors, duration of the clean out and inconvenience in accessing their driveways during clean outs. The Los Angeles County Department of Public works (County) estimated the duration of each clean out process to be approximately four hours and fifteen minutes (4.25 hours), and in conjunction with the City of Culver City, determined that noise levels rose from an ambient level of 52.2 decibels (dB) to as high as 92.6dB during cleanout operations (noise levels ranged from 60.6 -92.6 decibels).

In response to these complaints the County held two community meetings to discuss the issues and also invited interested parties to meet with the clean out contractors to discuss refinements to the posting of “no parking” signs, cleanout routines, and the type of equipment to be used to reduce the noise and duration of the cleanout. Steps were taken to improve residents’ accessibility to their driveways. In addition, the County tried using alternative equipment (a standard vacuum truck as opposed to a guzzler vacuum truck) to reduce the noise levels of the operation, but they indicated this turned out to be ineffective as this truck did not have sufficient power to remove the trash. Despite this, a resident filed an intent-to-sue notice on this issue. The County eventually halted the use of vacuum trucks to clean out the CDS unit to rectify the situation.

Regional Board’s Noise Impact Analysis: This SED acknowledges that using vacuum trucks could result in significantly elevated noise levels, and therefore agencies are encouraged to explore other less intrusive techniques for cleaning operations near sensitive receptors. Mitigation measures are also available. 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 exposure to noise, noise effects can be minimized. An operators plan for the specific construction and/or maintenance activities should be developed to address the variety of available measures to limit the impact from noise to adjacent homes and businesses. These should include:

(1) Reducing the level of noise coming from the source, which can be done using newer quieter equipment which may be hydraulic or electric or, if diesel, have mufflers to reduce the noise.

(2) Installing noise barriers or curtains around the noisy equipment.

(3) Reducing the time and, in some cases, season of exposure to noise.

(4) Reducing the distance of the noisemaking machinery from the receptors where possible.

(5) Developing a community liaison program, prior to the commencement of installation activities, that keeps residents informed about installation plans and provides a conduit for residents to express any concerns or complaints

Where these measures prove to be insufficiently effective, an alternative means of compliance should be considered.

The above case highlights the importance of a proactive approach to community involvement. The situation could conceivably have been avoided if residents had been provided with information regarding CDS cleanouts, their purpose, and the nature, duration and frequency of the activities, prior to their commencement. Furthermore, noise impacts are short term in nature; and CDS units require only seasonal maintenance. This SED also discusses potential mitigation measures for short term noise impacts such as designing passive BMPs that require less frequent maintenance, scheduling of maintenance during mid-day hours, and noise monitoring to ensure levels remain below acceptable levels.

Figure 8-3. Example of Inline CDS unit, Pico-Kenter drain in the City of Santa Monica

8.4 Gross Solids Removal Devices (GSRDs)

Gross solids removal devices (GSRDs) are structural devices designed to remove trash, vegetative material, and other particles of relatively large, gross size from stormwater runoff. GSRD designs were developed by the California Department of Transportation (Caltrans) in 2000. GSRDs were designed to be installed inline with the current drainage system, have a hydraulic capacity for a 25 year storm, and have trash storage capacity for one year (under normal conditions) (Caltrans, 2006). These designs were intended to minimize maintenance and it anticipated the GSRD will only need to be cleaned once per year. In addition, the GSRDs were designed to drain excess water within 72 hours preventing standing water and possible mosquito breeding.

Caltrans has developed two designs, the Linear Radial Configuration 1 (LR1 I-10) GSRD and Incline Screen Configuration 1 (IS1 SR-10). Dimensions of Linear Radial GSRDs vary depending on the drainage area. These two GSRDs were developed as part of Caltrans Phase I Gross solids Removal Devices Pilot Study: 2000-2002. Both of these designs were certified as full capture systems by the Regional Board. As of October 2003, eight of these units had been installed throughout the Los Angeles River Watershed (see Figure 8-4)

Figure 8-4: GSRDs Located in the Los Angeles River Watershed as of October, 2003.
(Source Caltrans, 2003b)

8.4.1 Example of a GRSD: California Department of Transportation (Caltrans) Gross Solid Removal Devices (GSRD)

The two GSRDs, LR1 I-10 and IS1 SR-10, shown below in Figures 8.5 and 8.6, were developed as part of Caltrans Phase I Gross solids Removal Devices Pilot Study conducted in 2000-2002. The devices were installed in Caltrans right of way lands. The linear radial unit was installed off the I-10 freeway in Rosemead and the Incline screen unit was installed along the northbound side of State Route 170 in the City of North Hollywood. Both units were monitored for a period of two years. No public disruptions, impacts, or vector issues were observed in the pilot study for the two devices. Due to the design of the devices, flooding was also not an issue (Caltrans, personal communication 2006).

Environmental Impact Analysis: Caltrans staff stated that the two pilot study devices as well all the ensuing devices are categorically exempt from CEQA. The devices are considered minor construction devices and retrofits of existing facilities. Regional Board staff has located no evidence to dispute the accuracy of the NOE. Regional Board staff has also located no evidence to support the claim that routine installation and maintenance in an urban area, akin to routine street construction and utility maintenance, would create significant impacts as opposed to the ordinary trivial impacts routinely encountered in an urban environment. More units are being installed throughout Los Angeles River and Ballona Creek Watershed. The new devices were properly designed and sited so that maintenance and installation did not cause any temporary or adverse impacts.

Figure 8-5 Caltrans GSRD Unit Linear Radial GSRD (LR1 I-10) off the I-10 Freeway at Rosemead

Figure 8-6. Caltrans GSRD Unit Linear Radial GSRD (LR1 I-10) off the I-10 Freeway at Rosemead

8.5 END-OF-PIPE SCREENS

End-of-pipe screens may be placed on storm drains to prevent large pieces of trash from entering the water body. This BMP device is easy to monitor and mesh size of the screen can be custom sized. The installation of these screens is generally easy and in certain situations can be very easy. The cost is moderate to low and benefit of trash reduction is high (County of Los Angeles, 2004). However, it is critical to properly design the system to prevent a loss of drain capacity, particularly if a small mesh size is selected (County of Los Angeles, 2004). This type of BMP may be best suited to low density residential or park land uses as these areas generate a lower percentage of man-made trash.

Figure 8-6. Machado Lake trash screen. Machado Lake is in the Ken Malloy Harbor Regional Park, in the Dominguez Channel Watershed.

Figure 8-7. Machado Lake trash screen. Machado Lake is in the Ken Malloy Harbor Regional Park, in the Dominguez Channel Watershed.

8.6 PUBLIC INVOLVEMENT AND PARTICIPATION

Public involvement and participation can also be very helpful when implementing a successful trash reduction and management program. Citizens can be informed and or reminded about the environmental consequences of trash. Signage and community education campaigns can increase citizen awareness and accountability. In addition, maintaining trash cans, that are readily available, in areas such as parks will allow for proper disposal of trash.

Figure 8-8. Signage at Lake Elizabeth. Lake Elizabeth is in the Santa Clara River watershed.

Figure 8-9. Trash can at a Los Angeles County park.

8.7 SUMMARY

All of the projects discussed above were deemed categorically exempt from CEQA analysis by the lead agencies of the corresponding projects, showing that the lead agencies consider the environmental impacts from implementing these trash TMDL compliance projects to have no reasonable probability that they could result in a significant adverse effect on the environment. An otherwise applicable categorical exemption is not available when the project could result in significant individual or cumulative adverse environmental effects. (14 Cal. Code Regs. § 15300.2.)

Categorical exemptions are descriptions of types of projects which the Secretary of the Resources Agency has determined do not usually have a significant effect on the environment. Categorical exemptions are found in Article 19 of the CEQA Guidelines. Unlike statutory exemptions, categorical exemptions are not absolute. There are exceptions to the exemptions depending on the nature or location of the project, and specifically, to the extent significant adverse impacts could actually occur (Guidelines §15300.2). There are approximately 30 "classes" or types of categorical exemptions. Only projects deemed to not have a “significant effect on the environmental” may be classified as categorically exempt. The lead agencies for these projects determined that these compliance technologies installed at the above-mentioned sites pose a less than significant impact on the environment. Except as noted above, Regional Board staff were unable to locate evidence suggesting that those projects did not actually qualify for categorical exemptions, or that the project had unanticipated significant adverse impacts. Nevertheless, to the extent significant adverse environmental impacts might otherwise have been reasonably foreseeable, those potential impacts are further discussed in this SED.

Possible temporary and/or short-term adverse impacts, identified by the lead agencies for the trash BMP projects included but were not limited to traffic, aesthetic, and noise. Not all sites experienced these impacts. Foreseeable traffic, aesthetic, and noise impacts are addressed individually in this SED. While the Regional Board cannot specify the exact method of compliance to the regulated party, this SED provides an in-depth analysis of the potential adverse impacts associated with trash BMP installation and maintenance.

9 OTHER ENVIRONMENTAL CONSIDERATIONS

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

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

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

9.3. Unavoidable Significant Impacts (as required by CEQA Guidelines Section 15126.2); and

9.4. Environmental Justice.

9.1 CUMULATIVE IMPACTS

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

The areas of cumulative impacts analyzed in this section include: 1) the Program level cumulative impacts and 2) the Project level cumulative impacts. On the program level, several commenters have noted that the Trash TMDL is one of several TMDLs that are planned for the Los Angeles River watershed and stated that the impact from multiple TMDLs should be included; these impacts are analyzed, here. 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 Trash 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.

9.1.1 Program cumulative impacts

Regarding programmatic cumulative impacts, the Regional Board has adopted two additional TMDLs for the Los Angeles River: nitrogen compounds (Nitrogen Compounds and Related Effects in the Los Angeles River TMDL in effect March 23, 2004) and metals (Los Angeles River and Tributaries Metals TMDL in effect December 22, 2005). These TMDLs have been developed due to impairments from all of these compounds. In addition, a TMDL for bacterial indicators is in development for the Los Angeles River Watershed. In assessing cumulative impacts from multiple TMDLs, the SED considers the nature, source and transport of impairing compounds to the Los Angeles River, the pollutant loading mechanisms and reasonably foreseeable methods of compliance.

The potential implementation strategies discussed in this SED for the trash TMDL may contribute to the implementation of other TMDLs for the Los Angeles River watershed. Likewise, implementation of other TMDLs in the Los Angeles River watershed may contribute to the implementation of this trash TMDL.

Regarding the nitrogen TMDL, the TMDL source analysis found that the greatest sources of nitrogen to the Los Angeles River were from the publicly owned treatment works and the implementation focuses on upgrades to the Tillman and Los Angeles Glendale wastewater treatment plants. WLAs were also assigned to MS4 stormwater permittees, but the source analysis did not show exceedances of the nitrogen standards by the MS4 permittees. Accordingly storm sewer system retrofits may not be necessary to comply with that TMDL.

Regarding the metals TMDLs, the metals have diverse sources and have a loading profile similar to bacteria wherein greater mass is loaded to the Los Angeles River, via the stormdrain system, during wet weather. The structural BMPs for metals are based on the premise that specific land uses, critical sources, or specific periods of a storm event can be targeted to achieve the TMDL waste load allocations. Structural BMPs may include placement of storm water treatment devices specifically designed to reduce metals loading, such as infiltration trenches or filters, at critical points in the storm water conveyance system. If these filters are placed in series with the systems being installed to meet the Trash TMDL, then these filters will operate more efficiently and will require less maintenance.

Regarding the bacteria TMDLs, the preliminary source analysis shows localized stormdrains to be a source, with loading highly variable and elevated during wet weather. These stormdrain loads could be reduced by nonstructural BMPs such as tracking and controlling illegal stormdrain connections and/or discharges, and public education on issues such as proper handling and disposal of pet waste. These loads could also be reduced by structural BMPs such as infiltration trenches or filters as would be the case for the metals TMDL. Neither of these approaches should disrupt any structural BMPs as applied for trash.

For compliance with the Los Angeles River Trash TMDL, full capture systems must be designed to treat the peak flow rate resulting from a one-year, one-hour storm, at a minimum. Some trash removal systems for compliance with this TMDL have a secondary benefit; the catch basin improvements and gross solids removal systems developed by Caltrans and discussed in section 6 of this SED also remove sediments and other pollutants.

9.1.2 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 Trash 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 trash device installation are available as discussed in section 7.1.4. In addition, the fact that trash BMP installation activities are being conducted in the same vicinity as other projects will not make mitigation methods, such as discussed in section 7.1.4, less implementable.

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

Transportation and Circulation - Compliance with the trash TMDL involves installation activities occurring simultaneously at a number of surface sites along the Los Angeles River and tributaries to the River. Installation of trash devices may be occurring in the same general time and space as other related or unrelated projects. In these instances, surface construction activities from all projects could produce cumulative traffic effects which may be significant, depending upon a range of factors including the specific location involved and the precise nature of the conditions created by the dual construction activity. Special coordination efforts may be necessary to reduce the combined effects to an acceptable level. Overall, significant cumulative impacts are not anticipated because coordination can occur and because transportation mitigation methods including are available as discussed in section 7.1.8. In addition, the fact that trash device installation activities are being conducted in the same vicinity as other projects will not make mitigation methods such as discussed in section 7.1.8 less implementable.

Public Services - The cumulative effects on public services in the Trash TMDL study area would be limited to traffic inconveniences discussed above. These effects are not considered cumulatively significant as discussed above.

Aesthetics - Construction activities associated with other related projects may be ongoing in the vicinity of one or more Trash 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 section 7.2.

9.2 GROWTH-INDUCING IMPACTS

This section presents the following:
9.2.1) an overview of the CEQA Guidelines relevant to evaluating growth inducement,
9.2.2) a discussion of the types of growth that can occur in the Los Angeles River Watershed,
9.2.3) a discussion of obstacles to growth in the watershed, and
9.2.4) an evaluation of the potential for the TMDL Program Alternatives to induce growth.

9.2.1 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.

9.2.2 Types of Growth

The primary types of growth that occur within the watershed 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 watershed. 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 watershed and other jurisdictions within the boundaries of the watershed. 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 the City of Los Angeles does not have the same boundaries as the watershed, as an indication, the population of the City is projected to grow by 19 percent by 2020 (from the 2000 level) according to the 2001 Southern California Association of Governments (SCAG) projections, and by 13 percent according to the 2004 SCAG projections.

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

Overall development in the County of Los Angeles is governed by the County of Los Angeles General Plan, which is intended to direct land use development in an orderly manner. The General Plan is the framework under which development occurs, and, within this framework, other land use entitlements (such as variances and conditional use permits) can be obtained. Because the General Plan guides land use development and allows for entitlements, it does not represent an obstacle to land use growth. The cities with in the watershed also have plans which direct land use development.

9.2.3 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.

9.2.4 Potential for the compliance with the proposed TMDL to induce growth.

Direct Growth Inducement
Because the reasonably foreseeable methods of compliance with the proposed trash TMDL focus on improvements to the stormdrain system which is located throughout the

urbanized portion of the Los Angeles River Watershed, the trash TMDL would not result in the construction of new housing and, therefore, would not directly induce growth.

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

Installation of trash devices to comply with the proposed TMDL would occur over a 10-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 trash devices. Based on the above annual construction cost estimates, the alternatives would result in direct jobs and indirect jobs. The creation of jobs in the region is considered a benefit.

Although the construction activities associated with the trash TMDL would increase the economic opportunities in the area and region, this construction is not expected to result in or induce substantial or significant population or land use development growth because the majority of the new jobs that would be created by this construction are expected to be filled by persons already residing in the area or region, based on the existing surplus of unemployed persons in the area and region. SCAG estimates that the City of Los Angeles, for instance, had 117,000 unemployed persons in 2000, while 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.

9.3 UNAVOIDABLE SIGNIFICANT ADVERSE IMPACTS

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

Furthermore, implementation of the trash TMDL 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 TMDL, the necessity of implementing the federally required TMDL and removing the significant environmental effects from trash impairment in the Los Angeles River Watershed (an action required to achieve the express, national policy of the Clean Water Act) remains.

In addition, implementation of the TMDL will have substantial benefits to water quality and will enhance beneficial uses. Enhancement of the recreational beneficial uses (both water contact recreation and non-contact water recreation) will have positive social and economic effects by decreasing potential trash hazards and increasing the aesthetic experience at beaches, parks along the river, river bike paths and other recreation areas. In addition, habitat carries a significant non-market economic value. 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. These substantial benefits outweigh any unavoidable adverse environmental effects, as set forth herein in and in the Statement of Overriding Considerations.

Section 7 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. Significant impacts that remain after implementation of mitigation are considered significant unavoidable adverse impacts. Significant unavoidable adverse impacts are identified in Chapter 7 and are also summarized in Table 1.1 in the Executive Summary.

9.4 Environmental Justice

Environmental justice as defined in California State law (Government Code Section 65040.12 and Public Resources Code Section 72000) is "...the fair treatment of people of all races, cultures and income with respect to the development, adoption, implementation and enforcement of environmental laws, regulations and policies." CEQA does not address environmental justice or fairness to communities explicitly, nonetheless, the Los Angeles River watershed is very diverse in ethnicity, cultures and incomes and the Regional Board and stakeholders are compelled to consider the effects of regulatory actions such as the proposed trash TMDL on environmental justice and fairness.

It is generally acknowledged that the burden of the trash allowed to enter the storm drain system, whether the aesthetic impairment, the degradation of habitat, or the cost of removing the trash, is carried by the downstream communities. When the trash bypasses the downstream communities and leaves the watershed entirely and enters the ocean, where it may continue to pollute for years, then the burden is carried by the global community.

For instance, the City of Long Beach uses “clam shell” tractors, other heavy duty equipment, and many, many, truck trips to cart away the tons of trash discharged by upstream cities. The impact of the trash itself and the financial and environmental cost to remove it could be considerably avoided if the upstream municipalities addressed their own trash, upstream.

All municipalities generate trash and have stormdrains. Under this proposed TMDL, every city will be required to make the same sort of effort and make the same sort of improvements to their storm drains. In this way, the burden of addressing the trash loading to the Los Angeles River is evenly distributed. It is therefore appropriate and equitable that municipalities and agencies whose communities generate trash locally are responsible for the effort and cost of abating that trash locally rather than to continue to allow those municipalities to dispose of locally generated trash through the storm drain system.

As it currently stands, without a trash TMDL and without efforts to keep trash from entering the storm drain system and river, the upstream cities disposing of trash to the downstream cities also represents an uneven environmental burden in terms of income and ethnicity. Certain ethnicities and lower income groups suffer a disproportionate share of the trash burden. Within the Los Angeles River watershed there are 17 congressional districts: districts numbers 24-39 and 46, with nine bordering the main stem of the Los Angeles River (Figure 9.1). For these nine districts, Figure 9.2 includes the breakdown by ethnicity, and Figure 9.3 includes the median and per capita income for families (US Census Bureau, 2003). The top of the watershed, represented by the community of Calabasas, is predominately white (82%), and the median income is highest here ($96,425). The bottom of the watershed, near the city of Long Beach, is predominately Hispanic (51%), and the median income is $36,285. Due to the distribution of peoples within the watershed, it appears that implementation of the proposed trash TMDL supports the goals of environmental justice are met.

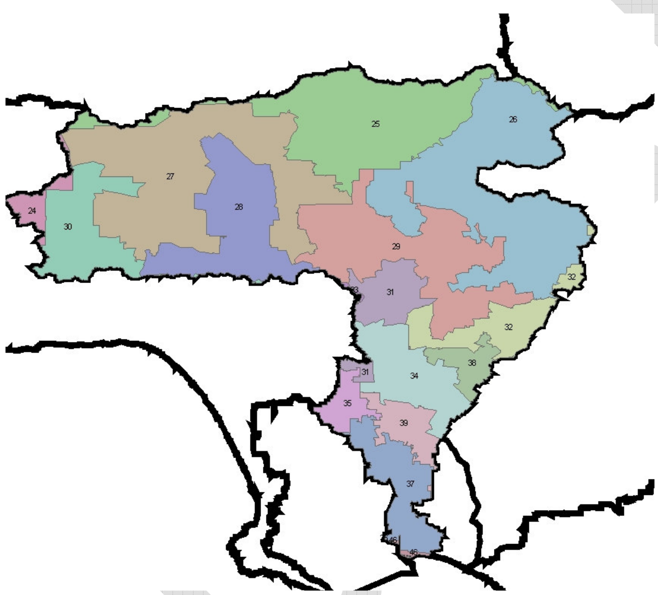


Figure 9-1 Congressional districts within the Los Angeles River watershed.

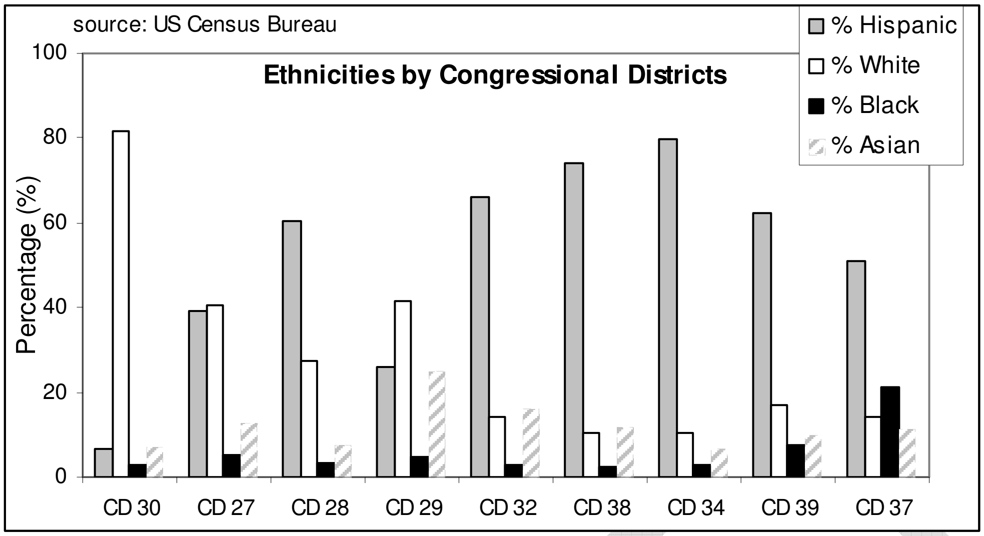


Figure 9-2. Ethnic groups within congressional districts along the main stem of the Los Angeles River, from the upper part of the watershed (CD 30) to the lower portion (CD 37).

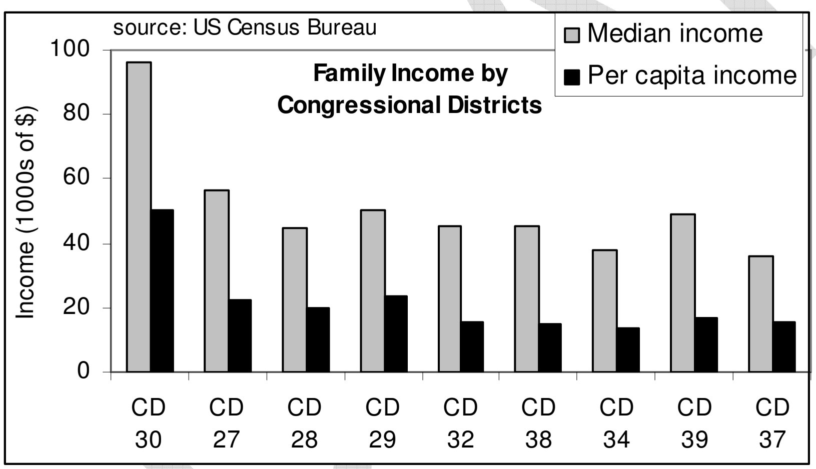


Figure 9-3. Family income by congressional districts, along the main stem of the Los Angeles River, from the upper part of the watershed (CD 30) to the lower portion (CD 37).

10. CEQA CHECKLIST

10.1 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
	b. Substantial depletion of any nonrenewable natural resource?				X

	ENVIRONMENTAL CHECKLIST	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant	No Impact
10.	**Risk of Upset. Will the proposal involve:**				
	a. A risk of an explosion or the release of hazardous substances (including, but not limited to: oil, pesticides, chemicals or radiation) in the event of an accident or upset conditions?	X			
11.	**Population. Will the proposal:**				
	a. Alter the location, distribution, density, or growth rate of the human population of an area?				X
12.	**Housing. Will the proposal:**				
	a. Affect existing housing, or create a demand for additional housing?				X
13.	**Transportation/Circulation. Will the proposal result in:**				
	a. Generation of substantial additional vehicular movement?	X			
	b. Effects on existing parking facilities, or demand for new parking?	X			
	c. Substantial impact upon existing transportation systems?			X	
	d. Alterations to present patterns of circulation or movement of people and/or goods?			X	
	e. Alterations to waterborne, rail or air traffic?			X	
	f. Increase in traffic hazards to motor vehicles, bicyclists or pedestrians?	X			
14.	**Public Service. Would the project result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times, or other performance objectives of any of the public services:**				

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

	ENVIRONMENTAL CHECKLIST	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant	No Impact
	b. The creation of an aesthetically offensive site open to public view?			X	
19.	**Recreation. Will the proposal result in:**				
	a. Impact upon the quality or quantity of existing recreational opportunities?	X			
20.	**Archeological/Historical. Will the proposal:**				
	a. Result in the alteration of a significant archeological or historical site structure, object or building?			X	
21.	**Mandatory Findings of Significance**				
	Potential to degrade: Does the project have the potential to degrade the quality of the environment, substantially reduce the habitat of a fish or wildlife species, cause a fish or wildlife population to drop below self-sustaining levels, threaten to eliminate a plant or animal community, reduce the number or restrict the range of a rare or endangered plant or animal or eliminate important examples of the major periods of California history or prehistory?	X			
	Short-term: Does the project have the potential to achieve short-term, to the disadvantage of long-term, environmental goals? (A short-term impact on the environment is one which occurs in a relatively brief, definitive period of time, while long-term impacts will endure well into the future.)			X	
	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	

10.2 DISCUSSION OF ENVIRONMENTAL EVALUATION

The analysis of potential environmental impacts is based on the numerous alternative means of compliance that are available for controlling trash in the Los Angeles River in response to the proposed Basin Plan amendment. These include structural methods such as catch basin inserts, structural vortex separation devices, end of pipe trash nets, as well as non-structural alternatives such as increased street sweeping and enforcement of existing litter laws. While potential impacts to air quality, geology and soils, biological resources, hydrology, land use planning, public services, and utilities are discussed below, it is generally found that any significant impacts can be mitigated at a project level. Many of the mitigation measures identified are common practices currently employed by agencies when planning and implementing storm water BMPs. Agencies such as Caltrans, CASQA, and WERF publish handbooks containing guidance on the selection, siting, design, installation, monitoring, and evaluation of storm water BMPs (Caltrans, 2002, CASQA, 2003a, CASQA, 2003b, WERF, 2005). The evaluation considers whether the environmental impact indicated will have a substantial, adverse change in any of the physical conditions within the area affected by the activity. In addition, the evaluation discusses environmental effects in proportion to their severity and probability of occurrence.

A checklist for the Water Boards certified regulatory program is not an initial study, but a tool to ensure analyses of a full range of conceivable impacts. The discussion set forth below should be read in context and together with related discussions elsewhere in this SED.

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

Answer: Potentially Significant

No impact is expected because foreseeable methods of compliance, including construction of structural methods to control trash, would not be of the size or scale to result in unstable earth conditions or in changes in geologic substructures. It In addition, it is not reasonably foreseeable that responsible agencies would choose to comply with this TMDL through structural means in areas where doing so would result in unstable earth conditions or in changes in geologic substructure. Rather, it is foreseeable that localities would avoid such compliance measures in lieu of other reasonable compliance measures, such as enforcing litter ordinances in such sensitive areas. however, to the extent that such facilities could result in unstable earth conditions or in changes in geologic substructures, potential impacts could be avoided or mitigated through proper siting, design, and ground and groundwater level monitoring to ensure stable conditions.

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 Trash TMDL. However, the Regional Board does recommend that appropriate compliance and mitigation measures as discussed herein, which are readily available and generally considered to be consistent with industry standards, be applied in order to reduce, and if possible avoid, potential environmental impacts, such that there is no significant impact. Since the decision to perform these measures is strictly within the responsibility and jurisdiction of the

individual implementing agencies, such measures can and should be adopted by these agencies. (Title 14, California Code of Regulations, Section 15091(a)(2).)
.

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

Answer: Potentially significant

Depending on the implementation methods chosen, the proposal may result in minor surface soil excavation during construction of structural methods to control trash. Notably, most of the relevant areas are already urbanized, and have already suffered soil compaction and hardscaping. Standard construction techniques, including but not limited to, shoring, piling and soil stabilization can mitigate any potential short-term impacts. In addition, adverse impacts could be mitigated to less than significant levels if structural methods are properly designed and sited in areas where the risk of soil disruption is minimal.

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 Trash TMDL. However, the Regional Board does recommend that appropriate compliance and mitigation measures as discussed herein, which are readily available and generally considered to be consistent with industry standards, be applied in order to reduce, and if possible avoid, potential environmental impacts, such that there is no significant impact. Since the decision to perform these measures is strictly within the responsibility and jurisdiction of the individual implementing agencies, such measures can and should be adopted by these agencies. (Title 14, California Code of Regulations, Section 15091(a)(2).)

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

Answer: No impact

No impact is expected because foreseeable methods of compliance, including implementation of structural methods to control trash, would not be of the size or scale to result in change in topography or ground surface relief features. To the extent that such facilities could result in change in topography or ground surface relief features, potential impacts could be avoided or mitigated through siting such alterations in geologically stable areas outside of flood plains.

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

Answer: No impact

It is not reasonably foreseeable that responsible agencies would choose to comply with this TMDL through structural means in areas where doing so would result in the destruction, covering or modification of any unique geologic or physical features. Rather, it is foreseeable that localities would avoid such compliance measures in lieu of other compliance measures, such as enforcing litter ordinances in sensitive areas. Furthermore, no impact is expected because foreseeable methods of compliance, including implementation of structural methods to control trash, would not be of the size or scale to result in the destruction, covering or modification of any unique geologic or physical features. If municipalities choose to achieve compliance with structural facilities, they should mitigate potential impacts by mapping these features to avoid siting facilities in areas that could result in the destruction, covering or modification of any unique geologic or physical features.

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

Depending on the implementation methods chosen, the proposal may result in soil excavation during construction and installation of pollution control facilities. Wind or water erosion of soils may occur as potential short-term impact. Typical established best management practices would foreseeably be used during implementation to minimize offsite sediment runoff or deposition. Construction sites are required to retain sediments on site, either under 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.

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 Trash TMDL. However, the Regional Board does recommend that appropriate compliance and mitigation measures as discussed herein, which are readily available and generally considered to be consistent with industry standards, be applied in order to reduce, and if possible avoid, potential environmental impacts, such that there is no significant impact. Since the decision to perform these measures is strictly within the responsibility and jurisdiction of the individual implementing agencies, such measures can and should be adopted by these agencies. (Title 14, California Code of Regulations, Section 15091(a)(2).)

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: Less than significant

To the extent that storm flows are treated by vortex separation systems and other facilities, siltation or deposition within the vortex separation systems and other facilities may occur. As a result reduction in siltation or deposition may occur in the estuary within the concrete lined channels and the channels. Reduction in siltation and deposition in the estuary may be considered a positive impact as fine sediments may contain toxic pollutants. Little or no impact on erosion of the river bed is expected since the flow rate in the river is not impacted by foreseeable methods of compliance and most the river channel is lined.

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: Less than significant

No impact is expected. Although areas of the watershed are subject to geologic hazards, geotechnical studies prepared at the project level would ensure that treatment facilities or BMPs were not employed in these areas in order to mitigate potential impacts to a less than significant level. It is not reasonably foreseeable that responsible agencies would choose to comply with this TMDL through structural means in areas where doing so would result in exposure of people or property to geologic hazards. Rather, it is foreseeable that localities would avoid such compliance measures in lieu of other compliance measures, such as enforcing litter ordinances in sensitive areas.

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 Trash TMDL. However, the Regional Board does recommend that appropriate compliance and mitigation measures as discussed herein, which are readily available and generally considered to be consistent with industry standards, be applied in order to reduce, and if possible avoid, potential environmental impacts, such that there is no significant impact. Since the decision to perform these measures is strictly within the responsibility and jurisdiction of the individual implementing agencies, such measures can and should be adopted by these agencies. (Title 14, California Code of Regulations, Section 15091(a)(2).)

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

Answer: Potentially significant

Structural methods such as catch basin inserts, and vortex devices or non-structural methods such as increased street sweeping may be used to comply with the TMDL. Short term increases in traffic during the construction and installation of trash removal devices and long-term increases in traffic caused by ongoing maintenance of these devices (e.g., delivery of materials and deployment of vacuum trucks) are potential sources of increased air pollutant emissions. Increased street sweeper traffic could also cause air pollutant emissions.

The TMDL Staff Report estimates that approximately 150,000 catch basins could be retrofitted with inserts or 3700 large capacity vortex separation systems could be installed to collect all the trash generated in the urban portion of watershed.

Maintenance requirements for trash removal devices demonstrate that devices should be emptied when they reach 85% capacity. However, trash removal devices can be designed so that they need be cleaned only once per storm season. In the Caltrans gross solids removal devices pilot studies, interim cleaning was not required and trash was removed only once per season. Assuming that 3700 vortex separation systems are cleaned once per storm season (November 1 to March 31, or 150 days), this translates to approximately 25 vehicle trips per day in the watershed. An additional 25 trips per day, watershed-wide, would not result in emissions levels that exceed the SCAQMD daily construction and operational emissions thresholds (based on similar estimated truck trips under the City of Los Angeles Integrated Resources Program (IRP)). The emissions generated by construction equipment would also be lower than the SCAQMD daily construction emissions thresholds (based on similar onsite construction projects under the City of Los Angeles IRP).

Nonetheless, mitigation measures are available to mitigate any potential impacts to air quality due to increased traffic during construction and maintenance. Mitigation measures could include 1) use of construction, maintenance, and 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, and 5) the design of trash removal devices to minimize the frequency of maintenance trips.

The potential re-suspension of sediments and associated pollutants during construction could also impact air quality. An operations plan for the specific construction and/or maintenance activities could be completed to address the variety of available measures to limit the air quality impacts. These could include vapor barriers and moisture control to reduce transfer of small sediments to air.

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 Trash TMDL. However, the Regional Board does recommend that appropriate compliance and mitigation measures as discussed herein, which are readily available and generally considered to be consistent with industry standards, be applied in order to reduce, and if possible avoid, potential environmental impacts, such that there is no significant impact. Since the decision to perform these measures is strictly within the responsibility and jurisdiction of the individual implementing agencies, such measures can and should be adopted by these agencies. (Title 14, California Code of Regulations, Section 15091(a)(2).)

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

Answer: Potentially significant

Trash removal devices 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 nets, screens, or 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, trash removal devices could be designed to minimize stagnation of water and installed to increase the distance to sensitive receptors in the event of any stagnation. Notably, the current conditions result in significant impacts from odor, especially following storm events, where tons of upstream trash collects downstream in the Los Angeles River and blankets the Estuary and beaches.

To the extent improper disposal of, for instance, household hazardous wastes result in them being trapped in structural compliance measures, and potentially allowing a release of such chemicals, local residents could be exposed to those effects. On balance, however, it is not unfair that the residents of the localities where improper disposal of such materials occurs should suffer those risks rather than allowing the wastes to be conveyed through the Los Angeles River and Estuary, to expose downstream citizens to the cumulative risks of them instead. Those effects are already occurring in the watershed and should be considered baseline impacts. Nevertheless, to the extent the locality that originated the risk would become newly potentially exposed instead of downstream receptors, those impacts could be potentially significant in those locales. Such impacts could be avoided or mitigated by educating the local community of the effects of improper disposal of such wastes, enforcing litter ordinances, and timely cleaning out inserts and structural controls.

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 Trash TMDL. However, the Regional Board does recommend that appropriate compliance and mitigation measures as discussed herein, which are readily available and generally considered to be consistent with industry standards, be applied in order to reduce, and if possible avoid, potential environmental impacts, such that there is no significant impact. Since the decision to perform these measures is strictly within the responsibility and jurisdiction of the individual implementing agencies, such measures can and should be adopted by these agencies. (Title 14, California Code of Regulations, Section 15091(a)(2).)

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

Answer: No Impact

Foreseeable methods of compliance would not be of the size or scale to result in alteration of air movement, moisture or temperature, or any change in climate, either locally or regionally.

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

Answer: Potentially significant

The course of direction or water movement may change depending on the choice and implementation of compliance measures. Streamflow in the lower watershed is highly channelized. None of the compliance alternatives would alter the direction or slope of the stream channels in the lower watershed. The roughness coefficient may be reduced as more trash is kept out of the channels, which would increase the flow rate in the channel but would not change the direction of flow. Overland flow in the urbanized portion of the watershed is directed primarily to storm drains. This overland flow may change depending on the chosen compliance alternative. Partial capture devices (i.e., catch basin inserts) may alter overland flow to storm drains, but this impact can be mitigated through proper design and maintenance of these inserts. Similarly, full capture devices (i.e., structural vortex separation devices) may impede or slow overland flow to storm drains but proper design and maintenance can mitigate this impact.

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 Trash TMDL. However, the Regional Board does recommend that appropriate compliance and mitigation measures as discussed herein, which are readily available and generally considered to be consistent with industry standards, be applied in order to reduce, and if possible avoid, potential environmental impacts, such that there is no significant impact. Since the decision to perform these measures is strictly within the responsibility and jurisdiction of the individual implementing agencies, such measures can and should be adopted by these agencies. (Title 14, California Code of Regulations, Section 15091(a)(2).)

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

Absorption rates, drainage patterns, and surface water runoff may change depending on the chosen compliance alternative. Full capture and partial capture devices may impede overland flow to storm drains. This negative impact can be mitigated through proper design and maintenance of these devices. The amount of streamflow within the river channel may change, but the direction would not change. The channelized drainage pattern would remain essentially unchanged.

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 Trash TMDL. However, the Regional Board does recommend that appropriate compliance and mitigation measures as discussed herein, which are readily available and generally considered to be consistent with industry standards, be applied in order to reduce, and if possible avoid, potential environmental impacts, such that there is no significant impact. Since the decision to perform these measures is strictly within the responsibility and jurisdiction of the individual implementing agencies, such measures can and should be adopted by these agencies. (Title 14, California Code of Regulations, Section 15091(a)(2).)

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

Answer: Potentially significant

The course of flow of flood waters may change depending on the chosen compliance alternative. Partial capture devices (i.e., catch basin inserts) and full capture devices (i.e., structural vortex separation devices) may impede the course of flow of flood waters to storm drains. 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. Enlargement of the drain upstream of the device may be required. Certain devices such as trash racks or mesh screen may have less hydraulic effect than in-line treatment devices.

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 Trash TMDL. However, the Regional Board does recommend that appropriate compliance and mitigation measures as discussed herein, which are readily available and generally considered to be consistent with industry standards, be applied in order to reduce, and if possible avoid, potential environmental impacts, such that there is no significant impact. Since the decision to perform these measures is strictly within the responsibility and jurisdiction of the individual implementing agencies, such measures can and should be adopted by these agencies. (Title 14, California Code of Regulations, Section 15091(a)(2).)

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

Answer: No impact

Because partial and full capture devices do not divert water for other uses and the amount of water in storm drains is not changed, surface water in the Los Angeles River or the Estuary is not likely to change due to the removal of trash.

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: No Impact

The proposal will not result in any additional discharge to surface waters. Compliance with the proposed Basin Plan Amendment aims will alter surface water quality by reducing the amount of trash that enters the river. This reduction will positively impact water quality and associated recreational beneficial uses of surface waters, including water contact and non-contact recreation, and other beneficial uses. This project will not foreseeably result in negative impacts to temperature, dissolved oxygen, or turbidity.

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

Answer: Less than significant

The direction or rate of flow of ground waters is not likely to change due to compliance with this TMDL. Partial capture devices (i.e., catch basin inserts) and full capture devices (i.e., structural vortex separation devices) likely would not change the direction or rate of flow of ground water because systems would not be installed in areas that are not already developed or at depths that could impact the ground water table.

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

Answer: Less than significant

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

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

Answer: No Impact

No impact is foreseeable. The goal of the TMDL is to capture the trash through catch basins or structural BMP devices. Stormwater runoff may be captured and used to recharge groundwater used for public water supplies or returned to the river without resulting in substantial reduction in the amount of water. This TMDL has no effect on such activities.

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

Depending on the implementation methods chosen, compliance with the proposed TMDL may result in flooding hazards if structural methods of trash control are not properly designed and constructed to allow for bypass of storm water during storms that exceed design capacity or in stormdrains that are not properly maintained. This potential impact can be mitigated through proper design and maintenance of these compliance structures.

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 Trash TMDL. However, the Regional Board does recommend that appropriate compliance and mitigation measures as discussed herein, which are readily available and generally considered to be consistent with industry standards, be applied in order to reduce, and if possible avoid, potential environmental impacts, such that there is no significant impact. Since the decision to perform these measures is strictly within the responsibility and jurisdiction of the individual implementing agencies, such measures can and should be adopted by these agencies. (Title 14, California Code of Regulations, Section 15091(a)(2).)

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

Potential implementation projects, such as catch basin inserts or vortex separation systems, would be implemented in currently urbanized areas. Because these areas are already fully urbanized it is unlikely that their implementation would cause the removal, disturbance or change in diversity of any plant species. Assuming any unique species are present, mitigation measures could be implemented to ensure that potential impacts to plant number and species diversity are less than significant. Plant number and species diversity could be maintained by either preserving them prior, during, and after the construction of trash control systems or by re-establishing and maintaining the plant communities post construction.

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 Trash TMDL. However, the Regional Board does recommend that appropriate compliance and mitigation measures as discussed herein, which are readily available and generally considered to be consistent with industry standards, be applied in order to reduce, and if possible avoid, potential environmental impacts, such that there is no significant impact. Since the decision to perform these measures is strictly within the responsibility and jurisdiction of the individual implementing agencies, such measures can and should be adopted by these agencies. (Title 14, California Code of Regulations, Section 15091(a)(2).)

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

It is anticipated that structural trash controls would be implemented in highly urbanized areas and it is unlikely that they would result in a change or reduction in the number of any unique, rare or endangered species of plants. However, should any reduction in the numbers of any unique, rare or endangered plants occur this impact would be considered potentially significant unless mitigation is incorporated.

Mitigation measures could be implemented to ensure that potential impacts to unique, rare or endangered plant 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 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 should 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.

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 Trash TMDL. However, the Regional Board does recommend that appropriate compliance and mitigation measures as discussed herein, which are readily available and generally considered to be consistent with industry standards, be applied in order to reduce, and if possible avoid, potential environmental impacts, such that there is no significant impact. Since the decision to perform these measures is strictly within the responsibility and jurisdiction of the individual implementing agencies, such measures can and should be adopted by these agencies. (Title 14, California Code of Regulations, Section 15091(a)(2).)

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

Answer: Less than significant

It is not reasonably foreseeable that potential projects associated with complying with Los Angeles River Trash TMDL would result in the introduction of exotic or invasive plant species into an area. Nor will potential projects result in a barrier to the normal replenishment of existing species. However, in the case that landscaping is incorporated into the specific project design, the possibility of disruption of resident native species could be avoided or minimized by using only plants native to the area. In any event, 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.

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

Answer: No impact

Based on the California Department of Conservation Division of Land Resources Protection Farmland Mapping and Monitoring Program Important Farmland in California, 2002 there is no Prime Farmland, Farmland of Statewide Importance, Unique Farmland or Farmland of Local Importance in the Los Angeles River watershed. However, it is known that there is limited agriculture crop production in the watershed. It is not expected that trash control devices will be placed in any area currently engaged in crop production. As previously discussed, trash control devices will be implemented in already highly urbanized area and would have no foreseeable impact on the acreage of any agricultural crop.

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

Answer: Less than significant

In general, the activities that will take place with the implementation of the full capture and/or partial capture trash control devices will be similar in nature to current urban activities that are already occurring in the watershed. The implementation of additional trash control measures will not foreseeably:

a) Cause a substantial reduction of the overall habitat of a wildlife species,
b) Produce a drop in a wildlife population below self-sustaining levels, and/or
c) 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.

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

Depending on the implementation method chosen, it is possible that direct or indirect impacts to special-status animal species may occur. Because these 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 what would generally be described as 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:

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

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

a) Displacement of wildlife by construction activities and/or
b) 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 such measures as enforcing litter ordinances 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 should 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 would 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 should be developed with the USFWS and CDFG to reduce potential impacts. Mitigation can include nighttime lighting that is 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.

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 Trash TMDL. However, the Regional Board does recommend that appropriate compliance and mitigation measures as discussed herein, which are readily available and generally considered to be consistent with industry standards, be applied in order to reduce, and if possible avoid, potential environmental impacts, such that there is no significant impact. Since the decision to perform these measures is strictly within the responsibility and jurisdiction of the individual implementing agencies, such measures can and should be adopted by these agencies. (Title 14, California Code of Regulations, Section 15091(a)(2).)

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

It is not reasonably foreseeable that implementation of full capture or partial capture trash controls 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 considered unlikely that trash control measures would be constructed in areas such as these.

However, constructed trash control measures 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 trash control measures such as the vortex separation system 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.

If structural methods of implementation are chosen 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 should 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 enforcing litter ordinances in sensitive areas.

The City Manager from the City of Downey suggested at the June 28, 2006 CEQA scoping meeting that storm drain screens would create significant adverse impacts in that they would serve as a barrier to raccoons that have been known to use the storm drains as travel routes. The representative also stated that such instances have not been frequently noted. There is no evidence that raccoons "migrate" through the storm drains, nor is there evidence that their transit through some storm drains is commonplace or even beneficial.

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 Trash TMDL. However, the Regional Board does recommend that appropriate compliance and mitigation measures as discussed herein, which are readily available and generally considered to be consistent with industry standards, be applied in order to reduce, and if possible avoid, potential environmental impacts, such that there is no significant impact. Since the decision to perform these measures is strictly within the responsibility and jurisdiction of the individual implementing agencies, such measures can and should be adopted by these agencies. (Title 14, California Code of Regulations, Section 15091(a)(2).)

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

Answer: Less than significant

It is not reasonably foreseeable that the implementation of trash control methods will result in the deterioration of existing fish and or wildlife habitat. Potential full capture and or partial trash control measures 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.

Full capture and partial capture trash control systems would not be located within the river channel, but rather in the storm drain itself. As such, a foreseeable deterioration of existing fish habitat is not anticipated. It is foreseeable, however, that the implementation of the Los Angeles River Trash TMDL will considerably improve fish habitat by removing trash from the Los Angeles River and Estuary, as well as the surrounding beaches.

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

Answer: Potentially significant

Depending on the implementation strategy chosen, the proposal may result in increases in existing noise levels, particularly in the case of maintenance of trash-reduction structural BMPs. The potential for increased noise levels due to installation is limited and short-term. Given the size of the individual projects and the fact that installation would be in small discrete locations, noise impacts during installation would not foreseeably be greater, and would likely be less onerous than, other types of typical construction activities in urbanized areas, such as ordinary road and infrastructure maintenance activities, building activities, etc. These short-term noise impacts, from installation and maintenance activities, can be mitigated by implementing commonly-used noise abatement procedures, standard construction techniques such as sound barriers, mufflers and employing restricted hours of operation. In addition community participation should be actively sought through open dialog between the implementing agency and affected parties. .Applicable and appropriate mitigation measures could be evaluated when specific projects are determined, depending upon proximity of construction activities to receptors.

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 Trash TMDL. However, the Regional Board does recommend that appropriate compliance and mitigation measures as discussed herein, which are readily available and generally considered to be consistent with industry standards, be applied in order to reduce, and if possible avoid, potential environmental impacts, such that there is no significant impact. Since the decision to perform these measures is strictly within the responsibility and jurisdiction of the individual implementing agencies, such measures can and should be adopted by these agencies. (Title 14, California Code of Regulations, Section 15091(a)(2).)

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

Answer: Potentially significant

Depending on the implementation methods chosen, the proposal may result in increases in exposure of people to severe noise levels, particularly in the case of construction of structural methods of trash control. The potential for severe noise levels due to construction is limited and short-term. 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 done to address the variety of available measures to limit the impacts from noise to adjacent homes and businesses. These could include: (1) reducing the levels of noise from the source - - this can be done by using newer, quieter equipment which may be hydraulic or electric, or if diesel, have mufflers to reduce the noise, (2) installing noise barriers or curtains around the noisy equipment, (3) reducing the time, and in some cases, season of exposure to noise, (4) reducing the distance of the noise making machinery from the receptors where possible, and (5) actively seeking community participation through open dialog between the implementing agency and affected parties.

Foreseeable methods of compliance include structural methods such as catch basin inserts, structural vortex separation devices, end of pipe trash nets, as well as non-structural alternatives such as increased street sweeping and enforcement of existing litter laws. These methods may entail short term disturbances during construction of structural methods and during periodic servicing which may include the use of vacuum trucks and pumps. 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.

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 Trash TMDL. However, the Regional Board does recommend that appropriate compliance and mitigation measures as discussed herein, which are readily available and generally considered to be consistent with industry standards, be applied in order to reduce, and if possible avoid, potential environmental impacts, such that there is no significant impact. Since the decision to perform these measures is strictly within the responsibility and jurisdiction of the individual implementing agencies, such measures can and should be adopted by these agencies. (Title 14, California Code of Regulations, Section 15091(a)(2).)

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

Answer: Less than 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.

However, The Regional Board does not direct which compliance measures responsible agencies choose to adopt nor which mitigation measures they employ. The Regional Board does, however, recommend that appropriate mitigation measures be applied in order that potential environmental impacts be reduced or avoided such that there is no significant impact.

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

Answer: Less than significant

Compliance with the TMDL may require modification of storm water conveyance structures to include structural methods of trash control, which is not foreseeably expected to result in substantial alterations to present planned land use and is not expected to have adverse impacts on land use and planning, because of the relatively modest size of the structural methods, and the fact that such methods would be generally sited in the existing storm drain infrastructure. Potential conflicts between implementation efforts and other land uses can be resolved by standard planning efforts under which specific projects are reviewed by local planning agencies. Applicable and appropriate mitigation measures could be evaluated when specific projects are determined.

Construction of structural methods of trash control would not temporarily divide an established community, conflict with any applicable land use plan or policy;, nor result in the conversion of planned land use because the reasonably foreseeable projects are so small in size. 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 construction period.

At the June 28, 2006 CEQA scoping meeting, representatives from the California Department of Transportation commented that adequate land might be unavailable for multiple structural compliance measures, particularly from this and subsequent TMDLs. This comment was echoed by representatives from the Coalition for Practical Regulation. The infeasibility of specific compliance measures at specific locations, however, is not subject to CEQA analysis in a Tier 1 review, 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 a CEQA impact.

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

Answer: No impact

Implementation of the proposed Basin Plan amendment is not foreseeably likely to significantly increase the rate of use of any natural resources or cause substantial depletion of any nonrenewable natural resource. The proposed project would not require quarrying, mining, dredging, or extraction of locally important mineral resources. Some types of structural methods to control trash and treatment facilities may consume electricity to operate pumps, etc. It is reasonably foreseeable that the regulation would precipitate education about the environmental and economic effects of litter, and thereby stimulate greater efforts to use less disposable materials, and to recycle more, thus reducing the use of resources including natural resources. Increased recycling would be considered a positive environmental impact. (See 15.a.)

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

Answer: No impact

Implementation of the proposed Basin Plan amendment is not foreseeably likely to significantly increase the rate of use of any natural resources or cause substantial depletion of any nonrenewable natural resource. The proposed project would not require quarrying, mining, dredging, or extraction of locally important mineral resources. Some types of structural methods to control trash and treatment facilities may consume electricity to operate pumps, etc. It is reasonably foreseeable that the regulation would precipitate education about the environmental and economic effects of litter, and thereby stimulate greater efforts to use less disposable materials, and to recycle more, thus reducing the use of resources including natural resources. Increased recycling would be considered a positive environmental impact. (See 15.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

It is not reasonably foreseeable that implementation of the proposed Basin Plan amendment would 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 would it foreseeably 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.

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 Trash TMDL. However, the Regional Board does recommend that appropriate compliance and mitigation measures as discussed herein, which are readily available and generally considered to be consistent with industry standards, be applied in order to reduce, and if possible avoid, potential environmental impacts, such that there is no significant impact. Since the decision to perform these measures is strictly within the responsibility and jurisdiction of the individual implementing agencies, such measures can and should be adopted by these agencies. (Title 14, California Code of Regulations, Section 15091(a)(2).)

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

Answer: No impact

It is not reasonably foreseeable that the proposed Basin Plan amendment would directly or indirectly induce population growth in the area, displace existing housing, or displace people.

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

Answer: No impact

Implementation of the proposed TMDL would not foreseeably require displacement of existing housing. Structural methods to control trash can be designed to be suitable for an urban setting and can be specifically designed to accommodate limited land area. Furthermore, based on the estimated size constraints of various structural methods and considering that many trash control devices would be built into the existing stormwater conveyance systems and not require additional land, it is not reasonably foreseeable that there would be a need to displace housing for this limited area. To the extent that structural controls, if employed, conceivably could require the displacement of available housing, it is not reasonably foreseeable that the responsible agencies would employ those controls. The commenters alleging the potential of this impact have not explained why, nor submitted evidence supporting that a local agency would condemn and raze housing for siting of structural BMPs when readily available alternatives exist. Rather, they would foreseeably instead opt for non-structural control measures, such as enforcing litter ordinances, or siting structural controls in locations that don't require destruction of housing..

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

Answer: Potentially significant

The TMDL Staff Report assumes that as many as 150,000 catch basins would have to be retrofitted with inserts or 3700 large capacity vortex separation systems would have to be installed to collect all the trash generated in the urban portion of watershed. Maintenance requirements for trash removal devices demonstrate that devices could be emptied when they reach 85% capacity. However, trash removal devices can be designed so that they need be cleaned only once per storm season. In the Caltrans gross solids removal devices pilot studies, interim cleaning was not required and trash was removed only once per season. Assuming that 3700 vortex separation systems are cleaned once per storm season (November 1 to March 31, or 150 days), this translates to approximately 25 vehicle trips per day in the watershed. An additional 25 trips per day, watershed-wide, would not foreseeably result in a substantial or significant change to traffic flow, other than short-term congestion on limited roadway segments. The approximately 25 trips per day, are fewer than the number of trips that would trigger the requirement of a congestion management plan (CMP). Consequently, the proposed project would be in conformance with the Los Angeles County CMP, and this impact would be a less than significant impact.

The proposal may also result in additional vehicular movement during construction of structural methods to control trash. Construction impacts are temporary during the period of construction. 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.

To the extent that significant adverse traffic impacts occur in a given locality, those effects are already occurring in the watershed and should be considered baseline impacts. Nevertheless, to the extent the locality that originated the trash would become newly exposed to increased traffic from the need to properly dispose of trash generated locally instead of downstream jurisdictions, those impacts could be potentially significant in those locales. On balance, it is not unfair to subject localities to the effects of abating locally generated trash in storm drains, rather than causing the downstream cities and beachgoers to suffer the synergistic effects of the cleaning up the trash collected from all the upstream cities. The city of Long Beach, for instance, uses “clam shell” tractors, other heavy duty equipment, and many, many truck trips to cart away the tons of trash from all the upstream cities. Any such impacts could be avoided considerably if the responsible agencies would address issues of locally generated trash locally.

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 Trash TMDL. However, the Regional Board does recommend that appropriate compliance and mitigation measures as discussed herein, which are readily available and generally considered to be consistent with industry standards, be applied in order to reduce, and if possible avoid, potential environmental impacts, such that there is no significant impact. Since the decision to perform these measures is strictly within the responsibility and jurisdiction of the individual implementing agencies, such measures can and should be adopted by these agencies. (Title 14, California Code of Regulations, Section 15091(a)(2).)

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

Answer: Less than significant

Depending on the implementation methods chosen, the proposal may result in alterations to existing parking facilities to incorporate structural methods of trash control. Structural methods, 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.

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

Answer: Less than significant

Depending on the implementation strategy chosen, the proposal may result in temporary alterations to existing transportation systems during construction of structural methods to control trash. 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. As discussed previously, the proposed project is anticipated to generate approximately 25 trips per day, which are fewer than the number of trips that would trigger the requirement of a congestion management plan (CMP). Consequently, the proposed project would be in conformance with the Los Angeles County CMP, and this impact would be less than significant impact.

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

Answer: Less than significant

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

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

Answer: Less than significant

Depending on the implementation strategy and location chosen, the proposal may potentially result in temporary alterations to rail transportation during construction of storm water diversion or treatment facilities. However the potential impacts would be less than significant as they will be limited and short-term and could be avoided or minimized through siting, designing, and scheduling of construction activities

However, The Regional Board does not direct which compliance measures responsible agencies choose to adopt nor which mitigation measures they employ. The Regional

Board does, however, recommend that appropriate mitigation measures be applied in order that potential environmental impacts be reduced or avoided such that there is no significant impact.

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

Answer: Potentially significant

The foreseeable methods of compliance may entail short-term disturbances during construction of structural methods to control trash. 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. 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.

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 Trash TMDL. However, the Regional Board does recommend that appropriate compliance and mitigation measures as discussed herein, which are readily available and generally considered to be consistent with industry standards, be applied in order to reduce, and if possible avoid, potential environmental impacts, such that there is no significant impact. Since the decision to perform these measures is strictly within the responsibility and jurisdiction of the individual implementing agencies, such measures can and should be adopted by these agencies. (Title 14, California Code of Regulations, Section 15091(a)(2).)

14. Public Service. a.

Would the project result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times, or other performance objectives of any of the public services: Fire protection?

Answer: Potentially Significant

There is potential for temporary delays in response time of fire and police vehicles due to road closure/traffic congestion during construction activities. However, any construction activities would be subject to applicable building and safety and fire prevention regulations and codes. The responsible agencies could notify local emergency service providers of construction activities and road closures and could coordinate with local providers to establish alternative routes and appropriate signage. In addition, an Emergency Preparedness Plan could be developed for the construction of proposed new facilities in consultation with local emergency providers to ensure that the proposed project's contribution to cumulative demand on emergency response services is less than significant and would not result in a need for new or altered fire protection services. Most jurisdictions have in place established procedures to ensure safe passage of emergency vehicles during periods of road maintenance, construction, or other attention to physical infrastructure, and there is no evidence to suggest that installation of structural devices would create any more significant impediments than such other ordinary activities.

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 Trash TMDL. However, the Regional Board does recommend that appropriate compliance and mitigation measures as discussed herein, which are readily available and generally considered to be consistent with industry standards, be applied in order to reduce, and if possible avoid, potential environmental impacts, such that there is no significant impact. Since the decision to perform these measures is strictly within the responsibility and jurisdiction of the individual implementing agencies, such measures can and should be adopted by these agencies. (Title 14, California Code of Regulations, Section 15091(a)(2).)

14. Public Service. b. Would the project result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times, or other performance objectives of any of the public services: Police protection?

Answer: Potentially significant

It is not foreseeable that this proposal will have an effect upon, or result in a need for new or altered any police protection services except for possible increased traffic control during construction projects and the 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 police service providers of construction activities and road closures and could coordinate with local police providers to establish alternative routes and traffic control during construction projects. In addition, an Emergency Preparedness Plan could be developed for the proposed new facilities in consultant 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. 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.

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 Trash TMDL. However, the Regional Board does recommend that appropriate compliance and mitigation measures as discussed herein, which are readily available and generally considered to be consistent with industry standards, be applied in order to reduce, and if possible avoid, potential environmental impacts, such that there is no significant impact. Since the decision to perform these measures is strictly within the responsibility and jurisdiction of the individual implementing agencies, such measures can and should be adopted by these agencies. (Title 14, California Code of Regulations, Section 15091(a)(2).)

14. Public Service. c. Would the project result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times, or other performance objectives of any of the public services: Schools?

Answer: No impact

Proposed implementation strategies for this TMDL include stormwater best management practices, storm drain diversions and treatment strategies, and pollution prevention. It is not foreseeable that this proposal will have an effect upon, or result in a need for new or altered any school services.

14. Public Service. d. Would the project result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times, or other performance objectives of any of the public services: Parks or other recreational facilities?

Answer: No impact

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

14. Public Service. e. Would the project result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times, or other performance objectives of any of the public services: other government services?

Answer: No environmental impact

The proposal will result in the need for increased monitoring in the Los Angeles River, and its tributaries 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. Nevertheless, these types of alterations to governmental services are not "environmental" impacts that involve a change in the physical environment.

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

Answer: Less than significant impact

The foreseeable means of compliance with the proposed Basin Plan Amendment include a mix of non-structural and structural methods to control trash, several of which will require expenditure of fuel or energy. However, compliance should not result in the use of substantial additional amounts of fuel or energy, or a substantial increase in demand upon existing sources of energy, or require the development of new sources of energy.

A full capture vortex separation system would require fuel for heavy equipment and fuel for vacuum trucks maintenance. Other full capture systems and catch basin inserts may require heavy equipment for maintenance in the form of dump trucks. The TMDL Staff Report estimates that approximately 3700 large capacity vortex separation systems could be installed or 150,000 catch basins could be retrofitted with inserts to collect all the trash generated in the urban portion of watershed. Maintenance requirements for trash removal devices demonstrate that devices should be emptied when they reach 85% capacity. However, trash removal devices can be designed so that they need be cleaned only once per storm season. In the Caltrans gross solids removal devices pilot studies, interim cleaning was not required and trash was removed only once per season. Assuming that 3700 vortex separation systems are cleaned once per storm season (November 1 to March 31, or 150 days), this translates to approximately 25 vehicle trips per day in the watershed. An additional 25 trips per day, is not expected to place substantial increases on existing energy supply.

Responsible agencies may avoid some use of fuel or energy by enforcement of litter laws and institutional controls which could lessen the increase in truck trips and the demand for fuel. The cleaning of catch basin inserts and other full capture systems can coincide with residential and commercial trash pickup schedules to decrease the added vehicle trips for dump trucks. In addition, increased fuel consumption from added street sweeping could also be mitigated by the gradual installation of full capture systems, decreasing the need for added street sweeping.

It should be noted that any increase in use of fuel or energy in the locales where the trash originated would be to some degree offset by the decrease in the use of fuel needed to remove the trash downstream in the Los Angeles River, the Estuary, and from the beaches.

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

Answer: Less than significant impact

See response to “15. Energy. a.”

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

Answer: Less than significant impact

Installation of full or partial capture systems may require minor alterations to existing power or natural gas systems. Power and natural gas lines might need to be rerouted to accommodate the addition of full capture systems. The degree of alteration depends upon local system layouts, and careful placement and design can mitigate such alterations. However, it is not foreseeable that this proposal will result in a substantial increase in the need for new systems, or substantial alterations to power or natural gas utilities

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

Answer: Less than significant impact

Implementation of this TMDL will require new trash control structures and operators or maintainers of the structures will use communication systems. However, it is not foreseeable that this proposal will result in a substantial increase need for new systems, or substantial alterations to existing communication systems.

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: Less than significant impact

It is not foreseeable that this proposal will result in a substantial increased need for new systems, or substantial alterations to water utilities.

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 a progressive reduction in trash discharges to the Los Angeles River through structural BMPs, enforcement of existing litter laws, and institutional controls. 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.

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

Answer: Potentially significant impact

In order to achieve compliance with the TMDL, the storm water drainage systems will need to be retrofitted with structural BMPs or re-configured to divert and/or capture and treat a portion of storm water. Impacts to the storm water drainage systems will range from potentially significant to less than significant depending on the implementation strategy of each municipality. However, overall, the significant amount of installation required by full capture systems will substantially alter the storm water drainage system. These alterations will have a positive environmental impact with the resulting reduced pollutant loads from urban and storm water runoff.

For impacts to floodwaters see 3.(c).

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: Less than significant

Nominal amounts of construction debris may be generated by installation of structural BMPs. Significant amounts of waste, that would otherwise enter storm drains, will be collected by institutional controls and structural methods for collecting trash, or by source control and proper litter disposal by citizens in upstream locales. The volume of waste collected and the disposal method may cause an impact to existing disposal systems presently used by upstream jurisdictions. The Los Angeles River Trash TMDL Staff Report estimated as many as 150,000 catch basins could be retrofitted with inserts. A study by Alameda County, California found that annual cleaning yielded 54 pounds of sediment per catch basin inlet. This represents as much as 4,050 tons of additional waste annually. A survey on landfills in Los Angeles County conducted by the Department of Public Works estimated remaining landfill capacity at 102.89 million tons. The volume of waste disposed compared to the existing capacity is slight and the improvement to water quality outweighs the small additional landfill use, especially given the fact that the trash presently is ultimately disposed of in landfills, albeit downstream.

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. Institutional planning and waste management techniques can adequately control the remaining solid wastes.

A new solid waste and disposal system is not required by the Basin Plan Amendment.

To the extent that decreases in available landfill space may be imposed upon a given locality or local region, those effects are already occurring elsewhere in the watershed as a result of the improper disposal of trash, and such effects should be considered baseline impacts, as they are presently carried by the downstream communities. Nevertheless, to the extent the localities that generated the trash would have less landfill capacity from the need to properly dispose of trash generated locally instead of downstream jurisdictions, those impacts could be deemed new environmental impacts in those locales. On balance, it is not unfair to require localities to dispose of trash generated locally in local landfills, rather than causing the downstream cities to do so in theirs. The city of Long Beach, for instance, uses “clam shell” tractors, other heavy duty equipment, and many, many truck trips to cart away the tons of trash from all the upstream cities. Notably, any such impacts could be avoided considerably if the responsible agencies would control trash locally. Furthermore, it is reasonably foreseeable that the regulation would precipitate education about the environmental and economic effects of litter, and thereby stimulate greater efforts to use less disposable materials, and to recycle more, thus reducing the use of resources including natural resources. Increased recycling would be considered a positive environmental impact.

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 Trash TMDL. However, the Regional Board does recommend that appropriate compliance and mitigation measures as discussed herein, which are readily available and generally considered to be consistent with industry standards, be applied in order to reduce, and if possible avoid, potential environmental impacts, such that there is no significant impact. Since the decision to perform these measures is strictly within the responsibility and jurisdiction of the individual implementing agencies, such measures can and should be adopted by these agencies. (Title 14, California Code of Regulations, Section 15091(a)(2).)

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

Answer: Potentially significant

See response to 10. Risk of upset. Use of heavy equipment during construction and maintenance of structural BMPs may add to the potential for construction accidents. Unprotected sites may also result in accidental health hazards for people.

In addition, certain structural BMPs have may become a source of standing water. Any source of standing water can potentially become a source of vector production.

Potential health hazards attributed to installation and maintenance of structural BMPs can be mitigated by use of Occupational Safety & Health Administration (OSHA) construction and maintenance, health and safety guidelines. Potential health hazard attributed to BMP maintenance can be mitigated through OSHA industrial hygiene guidelines. Installation of non-vector producing BMPs can help mitigate vector production from standing water. Netting can be installed over structural BMPs to further mitigate vector production. Structural BMPs can be redesigned and sites can be properly protected to prevent accidental health hazards as well as prevent vector production. Vector control agencies may also be employed as another source of mitigation. Structural BMPs prone to standing water can be selective 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.

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 Trash TMDL. However, the Regional Board does recommend that appropriate compliance and mitigation measures as discussed herein, which are readily available and generally considered to be consistent with industry standards, be applied in order to reduce, and if possible avoid, potential environmental impacts, such that there is no significant impact. Since the decision to perform these measures is strictly within the responsibility and jurisdiction of the individual implementing agencies, such measures can and should be adopted by these agencies. (Title 14, California Code of Regulations, Section 15091(a)(2).)

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: Less than significant impact

Installation of structural BMPs are unlikely to result in an impairment of scenic and opens views to the public. Structural BMPs are subsurface devices. Once completed, structural BMPs would not foreseeably obstruct scenic vistas or opens views to the public. To the extent that a particular structural control at a particular site could obstruct scenic views, such impacts could be avoided by employing non-structural controls at such locations instead, for instance, increased litter enforcement. Visual and scenic impairment on the Los Angeles River, at the Estuary, and on the beaches are already existing impacts, and should be considered baseline conditions. On balance, it is not unfair to subject localities to the visual effects of abating their own litter in their own storm drains, rather than forcing the downstream cities to suffer the visual effects of the mountains of trash that collect there from the upstream cities. Implementation of the Basin Plan amendment would eventually improve the overall aesthetic appeal of the LA River and its downstream beaches by the removal of visible trash, thus causing a positive impact.

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

Answer: Less than significant

Depending on the method of implementation, impacts can range from less than significant with mitigation to no impact at all. Institutional controls and enforcement of litter laws would pose a positive aesthetic impact by reducing visible trash. Structural BMPs may create an aesthetically offensive site to the public during installation. Structural BMPs may become a target of vandalism. Vandalized structures may become an aesthetically offensive site. Vandalism, however, already exists to some degree in most, if not all, urbanized areas, and adding several new structures is not of itself likely to have any impact upon current vandalism trends, any more than adding any other public structure.

Structural BMPs are often subsurface devices and would not create an aesthetically offensive site after installation. The creation of an aesthetically offensive site during installation can be mitigated with screening and construction BMPs. Improved lighting and enforcement of current vandalism regulations may decrease vandalized structures. 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 structural impacts. Screening and landscaping may be used to mitigate aesthetic effects. Applicable and appropriate mitigation measures would be evaluated considering project-level circumstances when specific projects are determined.

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 Trash TMDL. However, the Regional Board does recommend that appropriate compliance and mitigation measures as discussed herein, which are readily available and generally considered to be consistent with industry standards, be applied in order to reduce, and if possible avoid, potential environmental impacts, such that there is no significant impact. Since the decision to perform these measures is strictly within the responsibility and jurisdiction of the individual implementing agencies, such measures can and should be adopted by these agencies. (Title 14, California Code of Regulations, Section 15091(a)(2).)

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

Answer: Less than significant

Installation of structural BMPs may impact the usage of existing recreational sites but not above thresholds of significance. For instance, bike lanes may be temporarily unavailable during installation of structural BMPs. Structural BMPs and subsurface devices and will pose only temporary impairment to recreational opportunities. Implementation of the TMDL will gradually improve the quality of the water body. This will create a positive impact and increase recreational opportunities throughout the water body.

Impacts to recreational opportunities can be mitigated through construction BMPs and planning by the responsible agency. Installation of structural BMPs in parks, bike lanes, and other recreational sites can be done incrementally to avoid the impairment of the entire site. The responsible agency may also redesign the structural BMPs or choose a less disruptive implementation strategy.

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 Trash TMDL. However, the Regional Board does recommend that appropriate compliance and mitigation measures as discussed herein, which are readily available and generally considered to be consistent with industry standards, be applied in order to reduce, and if possible avoid, potential environmental impacts, such that there is no significant impact. Since the decision to perform these measures is strictly within the responsibility and jurisdiction of the individual implementing agencies, such measures can and should be adopted by these agencies. (Title 14, California Code of Regulations, Section 15091(a)(2).)

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

Answer: Less than significant

Implementation of the proposed Basin Plan amendment is unlikely to impact a significant archeological or historical site structure, object or building. It is not reasonably foreseeable that responsible agencies would comply with structural controls in places where doing so would create adverse impacts to significant archeological or historical resources. Rather it is foreseeable that responsible agencies would instead opt for non-structural measures such as enforcing litter ordinances in any such areas, or siting structural controls away from such resources. Any potential impact to specific archeological and/or historical resources by the construction of new facilities/BMPs can be determined by a project-level EIR once the location of any such facility has been determined. The agencies responsible for implementing this TMDL could consult the relevant local archeological or historical commissions or authorities to determine ways to avoid significant adverse impacts to any such structures, if implementation is proposed that would affect them.

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 Trash TMDL. However, the Regional Board does recommend that appropriate compliance and mitigation measures as discussed herein, which are readily available and generally considered to be consistent with industry standards, be applied in order to reduce, and if possible avoid, potential environmental impacts, such that there is no significant impact. Since the decision to perform these measures is strictly within the responsibility and jurisdiction of the individual implementing agencies, such measures can and should be adopted by these agencies. (Title 14, California Code of Regulations, Section 15091(a)(2).)

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. In some cases, mitigation measures even if performed may not reduce the impacts to less than significant levels. The significance of these impacts are discussed in detail above, as well as elsewhere in this document.

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: Less than significant

This TMDL is directed to long-term environmental goals, and does not sacrifice long-term for short-term benefit. Rather, the proposed trash 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 above, as well as elsewhere 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. In some cases, mitigation measures even if performed may not reduce the impacts to less than significant levels. The significance of these impacts are discussed in detail above, as well as elsewhere in this document.

11. STATEMENT OF OVERRIDING CONSIDERATIONS AND DETERMINATION

11.1 STATEMENT OF OVERRIDING CONSIDERATIONS (14 CAL CODE REGS. § 15093)

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

The implementation of this Basin Plan amendment will result in improved water quality in the waters of the Region and will have significant positive impacts to the environment (including restoration and enhancement of beneficial uses) and the economy over the long term. Enhancement of the recreational beneficial uses (both water contact recreation and non-contact water recreation) will have positive social and economic effects by decreasing potential trash hazards and increasing the aesthetic experience at beaches, parks along the river, river bike paths and other recreation areas. In addition, habitat carries a significant non-market economic value. 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 amendment may have adverse significant impacts to the environment, but these impacts are generally expected to be limited, short-term or may be mitigated through design and scheduling.

The Staff Report and the Basin Plan amendment, and this SED provide the necessary information pursuant to Public Resources Code section 21159 to conclude that properly designed and implemented BMPs or trash capture systems 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.

Nevertheless, the environmental and economic impacts associated with trash abatement, and with proper disposal of garbage, are already occurring elsewhere in the watershed, and the municipalities and agencies that are not already bearing those burdens are essentially forcing sister communities downstream to do so instead. On balance, to the extent upstream communities will be required to suffer some of those burdens, it is not unjust but appropriate. Communities should be responsible for bearing the burdens of their own trash generation, which also will have the effect of encouraging reductions in trash generation.

This TMDL is required by law under section 303(d) of the federal Clean Water Act, and if this Regional Board does not establish this TMDL, the USEPA will be required to do so under a federal consent decree. The impacts associated with USEPA's establishment of the TMDL would be significantly more severe, as discussed herein, because USEPA will not provide a compliance schedule, and the final waste load allocations, pursuant to federal regulations, would need to be complied with upon incorporation into the relevant 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 this TMDL will result in improved water quality in the Los Angeles River Watershed, but it may result in short-term localized significant adverse impacts to the environment as a variety of small construction projects may be undertaken at many places throughout the watershed over a period of 10 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 Los Angeles River Trash TMDL and this checklist provide the necessary information pursuant to Public Resources Code section 21159 to conclude that properly designed and implemented structural or non-structural methods of compliance should mitigate and generally avoid significant adverse effects on the environment, and all agencies responsible for implementing the TMDL should ensure that their projects are properly designed and implemented.

All of the potential impacts must, however, be mitigated at the subsequent, project level because they involve specific sites and designs not specified or specifically required by the Basin Plan Amendment to implement the TMDL. At this stage, any more particularized conclusions would be speculative. The Regional Board does not have legal authority to specify the manner of compliance with its orders or regulations (Wat. C. § 13360), and thus cannot dictate that an appropriate location be selected for any particular project, that it be designed consistent with standard industry practices, or that routine and ordinary mitigation measures be employed. These measures are all within the jurisdiction and authority of the agencies that will be responsible for implementing this TMDL, and those agencies can and should employ those alternatives and mitigation measures to reduce any impacts as much as feasible. (14 Cal. Code Regs., § 15091(a)(2).)

Implementation of the TMDL is both necessary and beneficial. To the extent that the alternatives, mitigation measures, or both, that are examined in this analysis are not deemed feasible by those local agencies, the necessity of implementing the federally required TMDL and removing the trash impairment from the Los Angeles River Watershed (an action required to achieve the express, national policy of the Clean Water Act) remains.

11.2 DETERMINATION

On the basis of this evaluation and staff report for the TMDL, which collectively provide the required information:

☐ I find the proposed Basin Plan amendment could not have a significant effect on the environment.

☒ I find that the proposed Basin Plan amendment could have a significant adverse effect on the environment. However, there are feasible alternatives and/or feasible mitigation measures that would substantially lessen any significant adverse impact. These alternatives are discussed above and in the staff report for the TMDL.

☐ I find the proposed Basin Plan amendment may have a significant effect on the environment. There are no feasible alternatives and/or feasible mitigation measures available which would substantially lessen any significant adverse impacts. See the attached written report for a discussion of this determination.

DATE:

__________________________ ______________________

Jonathan S. Bishop
Executive Officer

12. DOCUMENT PREPARERS

This document was prepared by the staff of the Los Angeles Regional Water Quality Control Board. The following persons were directly involved in the preparation of this document.

Name	Section
L.B. Nye, PhD	Executive Summary Program Alternatives Areas of Controversy and Issues to be Resolved Other Environmental Considerations Site Specific Environmental Analysis Technical Review
C.P. Lai, PhD, P.E	Environmental Setting Hydrology and Water Quality Overview and Analysis of Storm Drain System
Ginachi Amah, D.Env	Environmental Setting CEQA Requirements for the TMDL process TMDL Overview and Objectives Noise and Vibration Transportation and Traffic Site Specific Environmental Analysis Technical Review
Jenny Newman	Air Quality Biological Resources Coastal Resources Geology and Soils Hazards and Hazardous Materials Human Health Institutional Controls Public Education
Man Voong	Energy Utilities and Service Systems Human Health Aesthetics Recreation Cultural Resources Site Specific Environmental Analysis
Rebecca Christmann	Hydrology and Water Quality Land Use Population and Housing Public Services Recreation
Rebecca Veiga Nascimento	Biological Resources Utilities and Service Systems
Sam Unger, P.E	Other Environmental Considerations Technical Review
Sarah Rothenberg	Environmental Justice Cultural Resources
Thanhoan Ngyuen	Public Service Transportation and Traffic Population and Housing Land Use

Name	Section
Tom Siebels	Graphics
Yanjie Chu, PhD	Aesthetics Agricultural Resources Air Quality Structural Controls

13 REFERENCES

Ackerman, D., Schiff, K.C., Trim, H., and Mullin, M. 2003. Characterization of water quality in the Los Angeles River. Bulletin of Southern California Academy of Sciences 102: 17-25.

Air & Noise Compliance. 2006a. Technical Details in Acoustics.. Http://airandnoise.com/NoiseTech.html. Accessed November, 2006

Air & Noise Compliance. 2006b. Common Sound Levels.. Http://airandnoise.com/CommonSPLs.htm. Accessed November, 2006

American Srormwater. 2006. American Storm Water: Products – Surf Gate http://www.americanstormwater.com/Storm_Water_Products/surf_gate.html Accessed November, 2006

City of Burbank, Public Works Department: (Burbank DPW). 2006. http://www.ci.burbank.ca.us/PublicWorks/eng-envir-wrs/water_rec_plant.htm

California Air Resources Board, 2006. Ambient Air Quality Standards. http://www.arb.ca.gov/aqs/aaqs2.pdf Accessed November, 2006

California Department of Conservation, California Geological Survey. 2002a. California Geomorphic Provinces – Note 36.

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

California Department of Conservation, California Geological Survey, 2006b. Alquist Priolo Earthquake Fault Zones. http://www.consrv.ca.gov/CGS/rghm/ap/index.htm

California Department of Conservation Division of Land Resources Protection Farmland Mapping and Monitoring Program Important Farmland in California, 2002. http://www.consrv.ca.gov/DLRP/fmmp/county_info_results.asp

California Department of Fish and Game. 2006. California Natural Diversity Database (CNDDB). http://www.dfg.ca.gov/bdb/html/cnddb.html

California Department of Parks & Recreation, Office of Historic Preservation (OHP). 2006. http://ohp.parks.ca.gov/default.asp?page_id=21721

California Energy Commission, 2005. Integrated Energy Policy Report:, November 2005. Publication # CEC-100-2005-007-CMF

California Exotic Pest Plant Council (CalEPPC), 1999. Exotic Pests Plants of Greatest Ecological Concern, October, 1999. http://www.cal-ipc.org/ip/inventory/pdf/Inventory1999.pdf

California Integrated Waste Management Board (CIWMB). 2007. Solid Waste Information System http://www.ciwmb.ca.gov/SWIS Accessed February, 2007.

California Office of Historical Preservation, 2006. Proprietary data

California Regional Water Quality Control Board, 1998. Los Angeles River Watershed Water Quality Characterization. First edition.

California Regional Water Quality Control Board Los Angeles Region, 2001. Order No. 01-182: Waste Discharge Requirements for Municipal Storm Water and Urban Runoff Discharges within the County of Los Angeles, and the incorporated Cities Therein, Except the City of Long Beach. December 13, 2001.

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.

CDS Technologies, 2006 Stormwater In-line Units. http://www.cdstech.com/stormwater/inlineunit.htm Accessed February, 2007.

Cities of Burbank, Glendale, La Canada Flintridge and Pasadena (Four Cities), 2005. Letter to the Regional Board: Request for Full Capture System Certification for the Los Angeles River Trash Total Maximum Daily Load. February 16, 2005.

City of Glendale, 2006. personal communication with Environmental Program Manager, City of Glendale Department of Public Works, October 2, 2006.

City of Los Angeles, 2006. Personal communication with Civil Engineer, Department of Public Works, Bureau of Sanitation- Watershed Protection Division, October 3, 2006.

City of Los Angeles. 2001. Department of Public Works, Bureau of Engineering. Floodplain Management Plan. November 2001. Pages 18-20.

City of Los Angeles, 2006. Department of Public Works, Bureau of Engineering. FEMA Designated Floodplains. http://eng.lacity.org/projects/fmp/sfhamap.html. Accessed December, 2006.

City of Los Angeles Department of Public Works Bureau of Sanitation, and Department of Water and Power, 2005. Integrated Resources Plan Draft Environmental Impact Report. SCH No. 2004071091. SCAG No. 120040466. November 2005.

City of Los Angeles Department of Public Works (LADPW), 2006). LA Sewers: http://www.lasewers.org/treatment_plants/about/index.htm

City of Los Angeles Stormwater Program Website, 2006. http://www.lastormwater.org/WPD/program/TMDLs/tmdls.htm. Accessed November 2006.

City of Los Angeles Department of Water and Power (DWP), 2005. 2005 Urban Water Management Plan. http://www.ladwp.com/ladwp/cms/ladwp001354.jsp

Cooper, Dan. 1999. California Audubon Society, personal communication December 17, 1999.

Cooper, Dan. Audubon Society, California Academy of Sciences, personal communication May 20, 2000.

Court of Appeal Fourth Appellate District, Division One, State of California (*135 Cal.App.4th 1392.*), January 26, 2006. *City of Arcadia et al., State Water Resources Control Board et al.*

Court of Appeal of California, First Appellate District, Division One 10939 (*121. Cal.App.4th 1490)* August 6, 2004. Sierra Club vs County of Napa, Beringer Wine Estates et al

Department of Water Resources. 2004. *California's Groundwater Bulletin 118.* http://www.groundwater.water.ca.gov/bulletin118/update2003/index.cfm. Accessed December, 2006.

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

Federal Transit Administration, 2006. Transit Noise and Vibration Impact Assessment. Office of Planning and Environment FTA-VA-90-1003-06. May 2006,

Fresh Creek Technologies, Inc. 2006. The Fresh Creek Netting TrashTrap® systems, http://www.freshcreek.com/products.php. Accessed December, 2006.

Gateway Cities Council of Governments. 2004. Impacts on Housing of the Metals TMDL for the Los Angeles River. August 23, 2004.

Given, S., Pendleton, L.H., Boehm, A.B., 2006. Regional Public Health Estimates of Contaminated Coastal Waters: A Case Study of Gastroenteritis at Southern California Beaches. Environmental Science & Technology, Vol. 40, No. 16. pp 4851-4858

Glendale Unified School District (GUSD). 2006. http://www.glendale.k12.ca.us/Internal/general.htm. Accessed December, 2006.

Gumprecht, B., 1999. The Los Angeles River, Its Life, Death, and Possible Rebirth. Baltimore, The Johns Hopkins University Press.

Los Angeles City Department of Recreation and Parks. 2006. http://www.laparks.org/dept.htm. Accessed November, 2006.

Los Angeles City Department of Water and Power (LADWP). 2005. Urban Water Management Plan Year 2005.

Los Angeles City Planning Department. 2006. The City of Los Angeles General Plan. http://www.ci.la.ca.us/PLN/Cwd/GnlPln/Index.htm. Accessed November, 2006.

Los Angeles County Department of Parks and Recreation. 2006. http://lacountyparks.org/Parkinfo.asp?URL=aboutthedepartment.asp&Title=About%20the%20Department. Accessed November, 2006.

Los Angeles County Department of Public Works, Parks and Recreation, and Regional Planning., National Parks Service., Los Angeles River Advisory Committee. 1996. Los Angeles River Master Plan, June 1996.

Los Angeles County Department of Public Works (LACDPW). 2003. F319-R Data Files LACDPW. Alhambra, CA. October 1998 – December 2000.

Los Angeles County Department of Public Works. 2004. Technical Report on Trash Best Management Practices. August 5, 2004.

Los Angeles County Department of Public Works (LADPW), 2005: Ordinance amending Title 20-Utilities of the Los Angeles County Code by adding Chapter 20.87- Construction and Demolition Debris Recycling and Reuse. January 4, 2005.

Los Angeles County Fire Department (LACFD). 2006a. http://www.lacofd.org/InAction.asp. Accessed November, 2006.

Los Angeles County Fire Department (LACFD). 2006b. http://www.lacofd.org/FirePrevention/FirePrevContacts.asp. Accessed November, 2006.

Los Angeles County Sheriff Department (LASD). 2006. http://www.lasd.org/lasdabout.html. Accessed November, 2006.

Los Angeles Department of Water and Power (LADWP) 2006 http://www.ladwp.com/ladwp/cms/ladwp000508.jsp. Accessed December, 2006.

Los Angeles Fire Department (LAFD). 2006. http://www.lacity.org/lafd/about.htm. Accessed November, 2006.

Los Angeles Police Department (LAPD). 2006. http://www.lapdonline.org/inside_the_lapd/content_basic_view. Accessed November, 2006.

Los Angeles and San Gabriel Rivers Watershed Council (LASGRWC). 2001. Beneficial Uses of the Los Angeles and San Gabriel Rivers.

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

Los Angeles Regional Water Quality Control Board (LARWQCB). 1998. Los Angeles River Watershed Water Quality Characterization.

Los Angeles Regional Water Quality Control Board (LARWQCB). 2006. Total Maximum Daily Load for Metals in the Los Angeles River and its Tributaries. Final Report June 2, 2005

Los Angeles Regional Water Quality Control Board (LARWQCB). 2006. Proposed 2006 CWA Section 303(d) List of Water Quality Limited Segments. SWRCB Approval Date: October 25, 2006.

Los Angeles Unified School District (LAUSD). 2004. LAUSD Fingertip Facts 2004-2005. Issued April 2004. www.lausd.k12.ca.us/lausd/offices/Office_of_Communications/Fingertip_Facts_2004_2005.pdf. Accessed December, 2006.

Los Angeles Unified School District (LAUSD). 2006. LAUSD Fingertip Facts 2006-07. http://notebook.lausd.net/portal/page?_pageid=33,196299&_dad=ptl&_schema=PTL_EP .Accessed on December, 2006.

MBC Applied Environmental Sciences, 1994. Marine Biological Baseline Study of Queensway Bay, Long Beach Harbor, October 1994.

Metropolitan Transit Authority. Congestion Management Program (CMP) for Los Angeles County . 2004

Metropolitan Water District (MWD), 2007: MWD Member Agencies. Website: http://www.mwdh2o.com/ Accessed on February, 2007.

Mitchell, Charles. Principal Scientist MBC Applied Environmental Sciences. personal communication December 19, 1999.

Montebello Unified School District (MUSD). 2006. http://www.montebello.k12.ca.us/schools/default.htm. Accessed December, 2006.

Moore, C. J., Moore, S.L., Leecaster,M. K., Weisberg, S.B. 2001. A Comparison of Plastic and Plankton in the Pacific Central Gyre. Marine Pollution Bulletin, 42 (2001):1297-1300.

Moore, C. J., Lattin,G. L., Zellers, A. F. 2005. Density of Plastic Particles found in zooplankton trawls from Coastal Waters of California to the North Pacific Central Gyre. In Proceedings of the Plastic Debris Rivers to Sea Conference, September 7-9 2005 www.plasticdebris.org

Nishith Dhandha. North East Trees. Personal communication August 24, 2000.

Richard Watson & Associates, Inc. (RW A). 2006. Analysis of the Implementation Component of Draft Trash Total Maximum Daily Loads for the Los Angeles River Watershed. August, 2006

Schiff, Kenneth C., Bay, Steven M., and Stransky, Christopher. 2000. Characterization of stormwater toxicants from an urban watershed to freshwater and marine organisms

Sheavly, Seba. 2005. Beach Debris-Characterized through the International Coastal Cleanup & the U.S. National Marine Debris Monitoring Program. In Proceedings of the Plastic Debris Rivers to Sea Conference, September 7-9 2005 www.plasticdebris.org

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). 2006. SCAQMD Air Quality Significance Thresholds. 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#

Southern California Edison (SCE) 2006. Bettering Energy Efficiency and Power Sources http://www.sce.com/PowerandEnvironment/BetteringEnergyEfficiencyPowerSources/

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

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

State of California Department of Transportation (Caltrans), 2003b. Phase I: Gross Solids Removal Devices Pilot Study: 2000-2002. Final Report October 2003. CTSW-RT-03-072.31.22.

State of California Department of Transportation (Caltrans), 2003c. BMP Retrofit Pilot Program. Final Report January 2004. CTSW - RT - 01 - 050

State of California Department of Transportation (Caltrans), 2005. Division of Environmental Analysis http://www.dot.ca.gov/hq/env/stormwater/ongoing/gsrd_pilot_study/index.htm –Website updated: December 22, 2005.

State of California Department of Transportation (Caltrans), 2006. personal communication with District 7 Storm Water Program Manager October 4, 2006.

State of California Division of Land Resources Protection. 2006. Important Farmland Mapping Categories and Soil Taxonomy Terms. www.consrv.ca.gov/dlrp/fmmp/pubs/soil_criteria.pdf. Accessed November, 2006.

State Water Resources Control Board. 2006. California Water Boards - Erase the Waste Campaign. California Storm Water Toolbox. http://www.waterboards.ca.gov/erasethewaste/index.html

Superior Court of the City and County of San Francisco, No.316912 (*102 Cal.App.4th 656*, *Division T*), September 30, 2002 San Franciscans Upholding The Downtown Plan, et al. v. City and County of San Francisco, et al.

Swift, Camm Emeritus Natural History Museum of Los Angeles County, California Academy of Sciences. Personal communication May 20, 2000.

Thalheimer, E., 2000. Construction Noise Control Program and Mitigation Strategy at the Central Artery Tunnel Project. Noise Control Engineering Journal. 48(5) Sept-Oct

The Sierra Club Motherload Chapter, 2006. Working with California Environmental Quality Act (CEQA). (http://www.motherlode.sierraclub.org/CEQAcommenting.htm). Accessed: December, 2006.

Trim, Heather. 2001. Beneficial Uses of the Los Angeles and San Gabriel Rivers. The Los Angeles and San Gabriel Rivers Watershed Council (LASGRWC)

U.S. Department of Transportation Federal Transit Administration, and the Peninsula Corridor Joint Powers Board, 2004. Caltrain Electrification Program –San Francisco to Gilroy: Environmental Assessment/Draft Environmental Report. April, 2004

US Census Bureau, 2003. Data Tables: Data Profiles 2003 – State Level Profiles for California. http://www.census.gov/acs/www/Products/Profiles/Single/2003/ACS/CA.htm

U.S. Census Bureau. 2006. American FactFinder. http://factfinder.census.gov/home/saff/main.html?. Accessed on November, 2006.

United States Environmental Protection Agency (U.S. EPA) 1999. Storm Water Technology Fact Sheet – Sand Filters. EPA 832-F-99-007. September, 1999.

United States Environmental Protection Agency (U.S. EPA). 2003. San Fernando Valley Superfund Sites Update.

United States Environmental Protection Agency (U.S. EPA). 2005. Stormwater Phase II Final Rule - Public Education and Outreach Minimum Control Measure Fact Sheet. EPA 833-F00-005.

United States Environmental Protection Agency (U.S. EPA) 2006a. National Menu of Best Management Practices for Stormwater Phase II. http://cfpub.epa.gov/npdes/stormwater/menuofbmps/index.cfm

United States Environmental Protection Agency (U.S. EPA), 2006b. National Menu of Stormwater Best Management Practices, Catch Basin Inserts. .http://cfpub.epa.gov/npdes/stormwater/menuofbmps/index.cfm. Accessed November 2006.

Ventura County Fire Department (VCFD). 2006. http://fire.countyofventura.org/aboutus/index.html. Accessed December, 2006.

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-1&CFID=707181&CFTOKEN=54086235